BEAM PARK

Heritage Assessment

Phase 2A Reserved Matters Application (Works within the London Borough of Havering) - Submission to the GLA

July 2019

COUNTRYSIDE
Places People Love

L&Q

SUPPORTED BY
MAYOR OF LONDON

AN ARCHAEOLOGICAL AND BUILT HERITAGE ASSESSMENT

BEAM PARK RIVERSIDE, PHASE 2 APPLICATION SITE

LONDON BOROUGHS OF HAVERING AND BARKING & DAGENHAM

24155
AN ARCHAEOLOGICAL AND BUILT HERITAGE ASSESSMENT

July 26 2019

CONTENTS

1 INTRODUCTION 4
2 LEGAL & POLICY FRAMEWORK 14
3 PHASE 2 PROPOSALS 29
4 BASELINE DATA 30
5 ASSESSMENT OF SIGNIFICANCE 59
6 REVIEW OF POTENTIAL EFFECTS 79
7 SUMMARY AND CONCLUSION 99
8 SOURCES 101

Figures

FIGURE 1 – SITE LOCATION PLAN
FIGURE 2 – HERITAGE ASSETS (WITHIN 1KM)
FIGURE 2B - DESIGNATED HERITAGE ASSETS WITHIN 5KM OF SITE CENTRE
FIGURE 3 – HISTORIC LANDSCAPE CHARACTERISATION
FIGURE 4 – 1777 JOHN CHAPMAN AND PETER ANDRE'S MAP OF ESSEX
FIGURE 5 – 1799 ORDNANCE SURVEY DRAWING
FIGURE 6 – 1848 HORNCHURCH AND ROMFORD TITHE MAPS
FIGURE 7 – 1864 ORDNANCE SURVEY (1:2500)
FIGURE 8 – 1897 ORDNANCE SURVEY (1:2500)
FIGURE 9 – 1920 ORDNANCE SURVEY (1:2500)
FIGURE 10 – 1939 ORDNANCE SURVEY (1:2500)
FIGURE 11 – 1950-61 ORDNANACE SURVEY (1:2500)
FIGURE 12 – 1975-6 ORDNANCE SURVEY (1:1250)
FIGURE 13 – 1999 GOOGLE EARTH IMAGE
FIGURE 14 – 2006 GOOGLE EARTH IMAGE
FIGURE 15 – 2015 GOOGLE EARTH IMAGE
FIGURE 16 – THE FORD MOTOR COMPANY DAGENHAM ESTATE C. 1971
FIGURE 17 – HISTORIC BUILDING SURVEY STRUCTURE LOCATION PLAN [SEE PHASE 2 SURCHARING DBA]
FIGURE 18 – LOCATION OF THE GEOARCHAEOLOGICAL AND GEOTECHNICAL BOREHOLES, ARCHAEOLOGICAL EVALUATION TRENCHES AND MITIGATION AREAS 2 & 3
FIGURE 19 - THICKNESS OF PEAT (M)
FIGURE 20 - PLAN OF MITIGATION AREA 3 SHOWING WORKED YEW [215]
FIGURE 21 - PARAMETER PLAN DEVELOPMENT PHASES
FIGURE 22 - PARAMTER PLAN BUILDING HEIGHTS

APPENDICES

APPENDIX 1 – GLHER DATABASE
APPENDIX 2 – HISTORIC BUILDING RECORDING
APPENDIX 3 – PLATES

1 INTRODUCTION

a) Introduction

1.1 This report provides an Archaeological Desk-based assessment (DBA) incorporating a Built Heritage appraisal, in support of the RM application for the Beam Park London Riverside Phase 2 development, centred TQ 50230 83015.

1.2 Phase 2 is located to the south of the A1306 (New Road) and spans areas of the former Ford Assembly Plant and associated car storage zones either side of the Beam River (Figs 1, 21 & 22). The Phase 2 Site is accessed via Thames Avenue (not a public road).

1.3 The application site (henceforth 'the Site') is therefore partially located within both the London of Havering (LBH) and the London Borough of Barking & Dagenham (LBBD).

1.4 The report has been prepared by Robert Masefield of CgMs Heritage (part of RPS) on behalf of Countryside Properties (UK) Ltd and L&Q in support of a Phase 2B Reserved Matters application to the LBBD in the first instance.

1.5 The wider Beam Park Riverside has a Consented Hybrid Planning Application comprising a Detailed element for 640 residential dwellings for the eastern Phase 1 area (6.04ha excluding the school site which comprises a further 7.9 ha) and an Outline element for residential development and school for the remainder of the development (including Phase 2). The Hybrid application is summarised as follows:

> **"Cross boundary hybrid planning application for the redevelopment of the site to include 3,000 residential units (50% affordable); two 3 form entry primary schools and nursery (Use Class D1); railway station; supporting uses including retail, healthcare, multi faith worship space, leisure, community uses and estate management space (Use Classes A1, A2, A3, A4, B1, D1 and D2); energy centres; open space with localised flood lighting; public realm with hard and soft landscaping; children's play space; flood compensation areas; car and cycle parking; highway works and site preparation/ enabling works."**

1.6 The Hybrid Application was subject to an overall Historic Environment Desk Based Assessment (RPS 2016 updated March 2017) and has associated archaeological conditions. Separate Archaeological DBA's have also been provided for Phase 1 and Phase 2 enabling works and surcharging (RPS 2017 and RPS February 2018) and for the Marketing Suite (RPS 2018). Phase 1 surcharging has since been completed with Phase 2 enabling works due to commence.

1.7 The Phase 2A proposal is for 184 units. The parameters for height are the same as at the Outline stage.

1.8 The Phase 2B proposal within LBBD (330 Units) includes the following changes from the Hybrid Application stage:

- Block 3 is to be changed from 16 x 3 storeys to a 6 storey flat block consisting of 42 units (now labelled Z on Figures 21 & 22).
- Block S is positioned further to the west

- Block N is increased in height to 15 storeys

1.9 A considerable amount of archaeological and geo-archaeological evaluation and mitigation fieldwork has already taken place on the wider Phase 1 and 2 Beam Park London Riverside site ahead of the respective surcharging works (as raising levels precludes fieldwork at a later date).

1.10 In particular this report builds on a Desk Based Assessment (DBA) (RPS 2017, updated 2018), the requirements and additional information set out in an Environmental Statement Chapter (RPS in PBA 2017 and RPS in the PBA 'ES Addendum' of August 2018), geo-archaeological sub-surface topographical modelling reports (QUEST 2017a, 2017b, January 2018 & December 2018), and summarises several stages of pre-determination archaeological evaluation work within both Phases 1 and 2, including an initial archaeological trial trenching evaluation (PCA May 2017), Phase 2 archaeological evaluation trenching (excluding the LBBD school site) (PCA November 2017), additional Phase 2 trenching for the western access (PCA 2018) and Phase's 1 and 2 mitigation excavations (archaeological Areas 1, 2 and 3) (PCA December 2018).

1.11 RPS have been commissioned to provide this report as a summary of the stages of archaeological work that have been completed in advance of the RM application in accordance with the (then draft) planning conditions for the Hybrid Application.

1.12 In addition building recording has been conducted for all of the unlisted Ford related structures within the wider Beam Park site, including several elements within the present Site (Appendix 2). The above processes have all been approved and completed with the agreement of Greater London Archaeological Advisory Service (GLAAS), the archaeological advisors to the LPA's, in order to mitigate archaeological and geo-archaeological impacts.

1.13 Built Heritage assessments were conducted for the Hybrid Application as summarised in the Environmental Statement Chapter (RPS in PBA 2017) and in relation to revised block heights for Phase 1 within an ES Addendum' (RPS in PBA August 2018). The Built Heritage assessment is updated for the present application.

b) <u>Scope of assessment</u>

1.14 In accordance with central, and local government policy and guidance on heritage and planning, and in accordance with the 'Standard and Guidance for Historic Environment Desk-Based Assessments' (Chartered Institute for Archaeologists August 2014), this assessment draws together the available heritage, topographic and land-use information in order to clarify the archaeological potential of the Site.

1.15 The Assessment thus enables relevant parties to assess the archaeological potential of the site and to consider the need for design, civil engineering, and heritage solutions to the cultural heritage potential identified.

1.16 To compile the baseline assessment, the following actions have been undertaken;

- A search of the Greater London Historic Environment Records database for all heritage assets (including archaeological sites, Listed Buildings, Conservation Areas, etc) recorded within 1km of the centre of the Site (the 'Study Area') (NB the extent of Study Area is commensurate with normal industry practice).
- An examination of national and local planning policies in relation to heritage assets;

- A map regression exercise looking at the cartographic evidence for the Site;
- An assessment of available historical, archaeological, documentary and cartographic evidence (web based and other sources including a visit to the Barking & Dagenham Archives and the London Metropolitan Archives);
- Review of archaeological Research Agendas and Frameworks in relation to archaeological assets within and adjacent to the Study Area.
- An assessment of relevant geotechnical borehole surveys at the Site and the immediate vicinity.
- A Site walkover was undertaken by Robert Masefield on 22nd November 2016 with subsequent visits during archaeological fieldwork in 2017 and 2018.

1.17 The Chartered Institute for Archaeologist's Standard and Guidance for historic environment desk-based assessment (CIfA, 2014) sets a "standard" for desk-based assessment as follows:

> **Desk-based assessment will determine, as far as is reasonably possible from existing records, the nature, extent and significance of the historic environment within a specified area. Desk-based assessment will be undertaken using appropriate methods and practices which satisfy the stated aims of the project, and which comply with the Code of conduct, Code of approved practice for the regulation of contractual arrangements in field archaeology, and other relevant by-laws of the IfA. In a development context desk-based assessment will establish the impact of the proposed development on the significance of the historic environment (or will identify the need for further evaluation to do so), and will enable reasoned proposals and decisions to be made whether to mitigate, offset or accept without further intervention that impact. (CIfA, 2014, 1)**

1.18 The "Definition" of an assessment (CIfA, 2014, 1) is given as:

> **Desk-based assessment is a programme of study of the historic environment within a specified area or site on land, the inter-tidal zone or underwater that addresses agreed research and/or conservation objectives. It consists of an analysis of existing written, graphic, photographic and electronic information in order to identify the likely heritage assets, their interests and significance and the character of the study area, including appropriate consideration of the settings of heritage assets and, in England, the nature, extent and quality of the known or potential archaeological, historic, architectural and artistic interest. Significance is to be judged in a local, regional, national or international context as appropriate.**

1.19 Guidance on Standards for Archaeological Work in London is also provided by Historic England, formerly English Heritage (2014).

c) <u>Limitations</u>

1.20 In any desk-based assessment a degree of uncertainty is attached to the baseline data sources. This includes:

- The GLHER can be limited because it depends on random opportunities for research, fieldwork and discovery;
- Lack of dating evidence for sites;
- Documentary sources are rare before the medieval period, and many historic documents are inherently biased; and
- The extent of truncation caused by previous development impacts and landscaping works cannot be fully ascertained.

d) <u>Consultation</u>

1.21 All archaeological works on the Site (2017 and 2018) were conducted and completed in relation to the requirements of draft archaeological conditions for the Hybrid Application. GLAAS on receipt of the Hybrid Application provided the following advice to the LPA's on the drafting of the Conditions:

"*Recommend archaeological conditions including provision for preservation in situ of important remains*

Thank you for your consultation received on 11th August 2017.

The Greater London Archaeological Advisory Service (GLAAS) provides archaeological advice to boroughs in accordance with the National Planning Policy Framework and GLAAS Charter.

The planning application lies in an area of archaeological interest. The submitted archaeological assessment accurately summarises the prehistoric and palaeoenvironmental potential at the site. An apparent revetting timber encountered during initial investigations on site may represent early activity on the Beam River, where extensive Roman and prehistoric activity has been found to be concentrated.

Impacts from piling on any important remains should be managed by a condition. I note also that the Ford Works fire station is proposed for demolition, this is of local heritage interest and would merit recording before its loss.

The archaeological interest could be conserved by attaching three (3) phased conditions as follows [NB these GLAAS drafted conditions were slightly amended, as shown in italics below – by LBBD in their November 2017 draft conditions]:

> **Condition 1 *(see LBBD Draft Condition 69)*:**
> **No demolition or development shall take place in each phase of development until a stage 1 written scheme of investigation (WSI) has been submitted to and approved *in writing* by the local planning authority. For land that is included within each WSI, no demolition or development shall take place other than in accordance with the agreed WSI, and the programme and methodology of site evaluation and the nomination of a competent person(s) or organisation to undertake the agreed works.**
>
> **If heritage assets of archaeological interest are identified by stage 1 then for those parts of each phase which have archaeological interest, a stage 2 WSI shall be submitted to and approved by the *L*ocal *P*lanning *A*uthority in writing. For land that is included**

within the stage 2 WSI, no demolition/development shall take place other than in accordance with the agreed stage 2 WSI which shall include:

A. The statement of significance and research objectives, the programme and methodology of site investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works.

B. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged for each phase until these elements have been fulfilled in accordance with the programme set out in the stage 2 WSI.

Informative: Written schemes of investigation will need to be prepared and implemented by a suitably professionally accredited archaeological practice in accordance with Historic England's Guidelines for Archaeological Projects in Greater London. This condition is exempt from deemed discharge under schedule 6 of The Town and Country Planning (Development Management Procedure) (England) Order 2015.

(NB this paragraph excluded from LBBD Draft conditions provided)

Condition 2 *(see LBBD Draft Condition 70):*
No development shall take place in each phase until details of the foundation design and construction method to protect archaeological remains have been submitted and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved details.

Condition 3 *(see LBBD Draft Condition 71)*:
No demolition shall take place in each phase until a written scheme of historic building investigation (WSI) has been submitted to and approved by the local planning authority in writing. For buildings that are included within the WSI, no demolition or development shall take place other than in accordance with the agreed WSI, which shall include the statement of significance and research objectives, and:

A. The programme and methodology of historic building investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed, works *and;*

B. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged until these elements have been fulfilled in accordance with the programme set out in the WSI.

Informative: The written scheme of investigation will need to be prepared and implemented by a suitably professionally accredited heritage practice in accordance with Historic England's Guidelines for Archaeological Projects in Greater London.

(NB this paragraph excluded from LBBD Draft conditions provided)

Reason for conditions 69-71: To ensure that archaeological investigation is initiated at an appropriate point in the

development process, any areas of archaeological preservation are identified (including historic building recording), and appropriately recorded/preserved in accordance with Policy BP3 of the Borough Wide Development Policies (DPD (March 2011).

I envisage that works in each phase under the condition will initially involve geoarchaeological boreholes and archaeological trial trenching, followed by more intensive mitigation and preservation work in select areas.

Please do not hesitate to contact me should you require further information or assistance. I would be grateful to be kept informed of the progress of this application.

Yours sincerely

Adam Single - Archaeology Adviser Greater London Archaeological Advisory Service, Planning Group: London"

On 28th September 2018 the Deputy Mayor of London, acting under delegated authority and acting as Local Planning Authority, granted planning permission in respect of application 17/01307/OUT and P1242.17, subject to prior completion of a section 106 legal agreement, and the inclusion of planning conditions and informatives.

1.22 An 'Archaeological Strategy and Scheme of Archaeological Resource Management' (SARMS) was agreed as an appropriate 'umbrella document' for the archaeological project at a meeting between Countryside Properties, RPS and Adam Single of GLAAS on 4th September 2017. An updated version of the resulting report was provided to GLAAS in January 2018 (RPS January 2018).

1.23 The scope of the mitigation for the Hybrid Application was then set out in general within the ES chapter and was confirmed in terms of specific process at the above meeting.

1.24 It was agreed that the GLAAS draft archaeological 'Condition 2', above, would not be applied to Phase 1 as the archaeological evaluation stage did not encounter archaeology that requires avoidance by design, or specific design measures in relation to foundations. The surcharging fill for Phase 1 in now in place.

1.25 Phase 2 evaluation (excluding the LBBD school site which is to be dealt with separately) was completed in November 2017 (PCA December 2017a). This identified archaeology of probable Late Neolithic/Chalcolithic date in two adjacent trenches to the west of Thames Avenue that were subject to an archaeological mitigation excavation (Area 3) but did not identify any highly significant remains that might require avoidance by design. As such GLAAS do not require additional mitigation within the main area of Phase 2.

1.26 The only potential exception to this is where the additional trenching for the Phase 2 access route (i.e. linking the western extent of Phase 2) demonstrated a small area of higher Brickearth survival (PCA 2018a). Although the associated trench was devoid of archaeological features GLAAS have indicated that, subject to any impact, they *may* require archaeological watching brief in this zone (i.e. at the connection with New Road).

1.27 With respect to GLAAS draft 'Condition 3' (LBBD Draft Condition 71) for Historic Building recording of the remaining Ford related structures and infrastructure, it was subsequently agreed with GLAAS that this work could be undertaken ahead of determination of the Hybrid Application

and of the surcharging of the site. This work, including recording of bridges, light structures and former building platforms at the present application Site, was completed to the satisfaction of GLAAS in October/November 2017 and the report (PCA December 2017, provided as Appendix 2).

1.28 The GLA's representation hearing report (GLA/2933a/03 28 September 2018) included the following summary of Heritage issues with regard to the Hybrid application:

> **"Heritage**
>
> **230 The Planning (Listed Buildings and Conservation Areas) Act 1990 sets out the tests for dealing with heritage assets in planning decisions. In relation to listed buildings section 66 of the Act states that all planning decisions should "have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses". Pursuant to section 72 of the Planning (Listed Buildings and Conservation Areas) Act 1990, planning decisions must also give special attention to the desirability of preserving or enhancing the character or appearance of the conservation areas which may be affected by the proposed development.**
>
> **231 The NPPF identifies that the extent and importance of the significance of the heritage asset is integral to assessing the potential impact, and therefore acceptability. The definition of significance in this context is the value of the heritage asset in relation to its heritage interest and this may be archaeological, architectural, cultural or historic. It may also derive from a heritage asset's physical presence as part of the townscape or its setting, where a proposed development will lead to 'substantial harm' or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh the harm or loss. Where a development will lead to substantial harm, the harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.**
>
> **232 London Plan Policy 7.8 states at criterion D that "development affecting heritage assets and their setting should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail". The supportive text explains that development that affects the setting of heritage assets should be of the highest quality of architecture and design and respond positively to local context and character. These sentiments are also stated in Policy HC1 of the draft London Plan.**
>
> **233 At a local level, Barking & Dagenham Local Plan Policy CP2 and Policy BP2 seeks to protect the historic environment, conservation areas and listed buildings, whilst Havering Local Plan Policy CP18 seeks to preserve the character and appearance of special architectural, historical or archaeological sites.**
>
> **234 The site does not lie within a Conservation Area and does not contain any statutorily or locally listed buildings. The nearest locally listed buildings are just north of the site at Princess Parade in LBBD. There are no statutorily listed buildings within a 1kilometre vicinity.**

235 The site is visually and physically segregated from its surroundings, including any nearby heritage assets. It does, therefore, not harm any assets themselves or the setting of any assets. Furthermore, should the buildings appear in any longer-range views from any surrounding heritage assets, it is considered that there would be no harm due to distance as well as the general urban setting of those surrounding assets. The proposals would not harm any heritage assets and are considered to comply with London Plan Policy 7.8, draft London Plan Policy HC1, Barking & Dagenham Local Plan Policy CP2 and Policy BP2 and Havering Local Plan Policy CP18."

1.29 The Decision Notice was issues in January 2019. With the Conditions reconfirmed as follows:

66.

Written Scheme of Investigation

No demolition or development shall take place in any phase of the development, with the exception of phases 1 and 2 where no above ground development shall take place, until a stage 1 written scheme of investigation (WSI) has been submitted to and approved in writing by the relevant Local Planning Authority. For land that is included within each WSI, no demolition or development shall take place other than in accordance with the agreed WSI, and the programme and methodology of site evaluation and the nomination of a competent person(s) or organisation to undertake the agreed works.
The developer shall afford access at all reasonable times to any archaeologist nominated by the local planning authority, and shall allow that person to observe the excavations and record items of interests and finds.
f heritage assets of archaeological interest are identified by stage 1 then for those parts of each phase which have archaeological interest, a stage 2 WSI shall be submitted to and approved in writing by the Local Planning Authority. For land that is included within the stage 2 WSI, no demolition/ development shall take place other than in accordance with the agreed stage 2 WSI which shall include:

A. The statement of significance and research objectives, the programme and methodology of site investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works.

B. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged for each phase until these elements have been fulfilled in accordance with the programme set out in the stage 2 WSI.

Reason: The WSI is required prior to commencement of development (and prior to above ground works in phases 1 and 2) in order to ensure that archaeological investigation is initiated at an appropriate point in the development process, any areas of archaeological preservation are identified and appropriately recorded/preserved in accordance with Barking & Dagenham Local Plan Policy BP3, Havering Local Plan Policy CP18 and London Plan Policy 7.8.

It is necessary to deal with these matters by approval of details, as the detailed information was not available for consideration as part of the planning application submission.

67.

Foundation Design

Other than the provision of roads and sewers, no development shall take place in each phase of the development until details of the foundation design and construction method to protect archaeological remains have been submitted to and approved in writing by the relevant Local Planning Authority. The development shall be carried out in accordance with the approved details.
Reason: Foundation design is required prior to commencement of development because important archaeological remains may exist on site and the relevant Local Planning Authority wishes to secure the provision of an archaeological monitoring prior to commencement of development in accordance with Barking & Dagenham Local Plan Policy BP3, Havering Local Plan Policy CP18 and London Plan Policy 7.8

It is necessary to deal with these matters by approval of details, as the detailed information was not available for consideration as part of the planning application submission.

1.30 GLAAS confirmed in a telecommunication of 1st April 2019 with Rob Masefield of RPS that, following the satisfactory fieldwork elements for both Phases 1 and 2, the associated assessment report (PCA 2018) is also approved and the analysis and publication aspects can now be completed in accordance with that assessment.

1.31 With regard to setting issues in relation to designated assets the representation hearing report GLA/2933a/03 of 28 September 2018 for planning application nos. 17/01307/OUT and P1242.17 included the following paragraph 235 (p.69):

'The site is visually and physically segregated from its surroundings, including any nearby heritage assets. It does, therefore, not harm any assets themselves or the setting of any assets. Furthermore, should the buildings appear in any longer-range views from any surrounding heritage assets, it is considered that there would be no harm due to distance as well as the general urban setting of those surrounding assets. The proposals would not harm any heritage assets and are considered to comply with London Plan Policy 7.8, draft London Plan Policy HC1, Barking & Dagenham Local Plan Policy CP2 and Policy BP2 and Havering Local Plan Policy CP18.'

1.32 In an initial email correspondence of 5th June 2019 Historic England (Inspector of Historic Buildings and Areas Planning, London & South East Region) provided the following response to the Phase 2 parameter plans:

'For me the impact on the setting of designated heritage assets will be our main consideration but unless the max height (which I understand to be 16 storeys) is not a massive increase on what was previously submitted, I think it's very unlikely that we will have anything to add at this stage. I am just checking the background with our Business Officer…and will get back to when I hear from them…'

1.33 This was followed by a second response as follows:

'Further to my below email, I confirm that Historic England does not consider it necessary to be drawn into pre-application discussions regarding [the] revised plans. My colleague [redacted]*, copied in, will issue with a formal letter setting this out. We are however likely to be a statutory consultee at application stage given the scale of the development and the proximity to designated heritage assets as identified in your pre-application documentation*.'

2 LEGAL & POLICY FRAMEWORK

National Policy

i. Ancient Monuments and Archaeological Areas Act 1979

2.1 Chapter 46 describes the purposes of the Act as to make provision for the investigation, preservation and recording of matters of archaeological or historical interest and (in connection therewith) for the regulation of operations or activities affecting such matters.

2.2 Monuments deemed to be of such significance that they require this level of statutory protection are placed on the Schedule; i.e. they become designated as Scheduled Monuments. All Scheduled Monuments are of national significance.

2.3 The Act identifies a number of activities that are not permitted, predominantly those that would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up the monument. If work is proposed that would have any such effect on a designated monument, written consent is required from the Secretary of State. Class consents enable owners to proceed with certain specified works without an application for consent.

2.4 For the purposes of the Act the site of a Scheduled Monument includes not only the land on which it is situated but also any land comprising or adjoining it which appears to the Secretary of State or a local authority … to be essential for the monument's support and preservation. (61.9)

ii. Planning (Listed Buildings and Conservation Areas) Act 1990

2.5 Listed buildings and their settings are protected under the provisions of the Town and Country Planning Act 1971, as amended by the Planning (Listed Buildings and Conservation Areas) Act 1990. These empower the Secretary of State to maintain a list of built structures of national historic or of architectural significance. Listed buildings and their settings need not be preserved unchanged, but development should in all but exceptional cases, aim to preserve the building's historic or architectural interest.

2.6 Conservation Areas (and their settings) are also protected under the provisions of the Town and Country Planning Act 1971 and the Planning (Listed Buildings and Conservation Areas) Act 1990. These impose on local authorities the duty to identify and protect areas worthy of preservation or enhancement. Again, development is not precluded, but it is the presumption that all development within the Conservation Area or its setting should aim to preserve or enhance the area's historic character or appearance. Local authorities are required to carry out appraisals of all of their Conservation Areas in order to define the areas' special characteristics/interest, to guide future development.

iii. The National Planning Policy Framework (Conserving and enhancing the historic environment)

2.7 The National Planning Policy Framework (NPPF) was published on the 27th of March 2012, and replaced the planning framework which consisted of Planning Policy Guidance and Statements (PPGs and PPS).

2.8 The Government has revised the NPPF in July 2018 and republished the NPPF in February 2019. The following polices are of relevance to the proposed development:

"Section 16. Conserving and enhancing the historic environment"

184. Heritage assets range from sites and buildings of local historic value to those of the highest significance, such as World Heritage Sites which are internationally recognised to be of Outstanding Universal Value. These assets are an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations.

185. Plans should set out a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. This strategy should take into account:

a) the desirability of sustaining and enhancing the significance of heritage assets, and putting them to viable uses consistent with their conservation;

b) the wider social, cultural, economic and environmental benefits that conservation of the historic environment can bring;

c) the desirability of new development making a positive contribution to local character and distinctiveness; and

d) opportunities to draw on the contribution made by the historic environment to the character of a place.

186. When considering the designation of conservation areas, local planning authorities should ensure that an area justifies such status because of its special architectural or historic interest, and that the concept of conservation is not devalued through the designation of areas that lack special interest…

2.9 Proposals affecting heritage assets

189. In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.

190. Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this into account when

considering the impact of a proposal on a heritage asset, to avoid or minimise any conflict between the heritage asset's conservation and any aspect of the proposal…

192. In determining applications, local planning authorities should take account of:

a) the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;

b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and

c) the desirability of new development making a positive contribution to local character and distinctiveness.

2.10 Considering potential impacts

193. When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance.

194. Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:

a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;

b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.

195. Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

a) the nature of the heritage asset prevents all reasonable uses of the site; and

b) no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and

c) conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible; and

d) the harm or loss is outweighed by the benefit of bringing the site back into use.

196. Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use.

197. The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

198. Local planning authorities should not permit the loss of the whole or part of a heritage asset without taking all reasonable steps to ensure the new development will proceed after the loss has occurred.

199. Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible64. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

200. Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably.

201. Not all elements of a Conservation Area or World Heritage Site will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 195 or less than substantial harm under paragraph 196, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.

202. Local planning authorities should assess whether the benefits of a proposal for enabling development, which would otherwise conflict with planning policies but which would secure the future conservation of a heritage asset, outweigh the disbenefits of departing from those policies.'

2.11 As such the NPPF states that planning should operate to encourage and not act as an impediment to sustainable growth.

iv. National Planning Practice Guidance (NPPG), (2014)

2.20 This guidance has recently been adopted in order to support the NPPF. It reiterates that conservation of heritage assets in a manner appropriate to their significance is a core planning principle.

2.21 It also states, conservation is an active process of maintenance and managing change, requiring a flexible and thoughtful approach. Furthermore, it highlights that neglect and decay of heritage assets is best addressed through ensuring they remain in active use that is consistent with their conservation.

2.22 Importantly, the guidance states that if complete, or partial loss of a heritage asset is justified, the aim should then be to capture and record the evidence of the asset's significance, and make the interpretation publically available.

2.23 Key elements of the guidance relate to assessing harm. It states, an important consideration should be whether the proposed works adversely affect a key element of the heritage asset's special architectural or historic interest.

2.24 Adding, it is the degree of harm, rather than the scale of development that is to be assessed. The level of 'substantial harm' is stated to be a high bar that may not arise in many cases. Essentially, whether a proposal causes substantial harm will be a judgment for the decision taker, having regard to the circumstances of the case and the NPPF.

2.25 Importantly, it is stated harm may arise from works to the asset or from development within its setting. Setting is defined as the surroundings in which an asset is experienced, and may be more extensive than the curtilage. A thorough assessment of the impact of proposals upon setting needs to take into account, and be proportionate to, the significance of the heritage asset and the degree to which proposed changes enhance or detract from that significance and the ability to appreciate it.

v. **English Heritage Good Practice Advice Notes 1, 2 and 3 (English Heritage, March 2015 and updated GPA3 Historic England, December 2017).**

2.26 As discussed above, the NPPG has been adopted in order to support the NPPF. However, the NPPG specifically did not supersede the PPS 5: Historic Environment Planning Practice Guide, issued by the Department of Communities and Local Government in collaboration with English Heritage and DCMS in 2010. As of 27th March 2015 the PPS 5: Historic Environment Planning Practice Guide has been cancelled and replaced with three Good Practice Advice documents, published by English Heritage (now Historic England). These cover 1) Local Plan Policy, 2) Managing Significance in Decision-Taking and 3) The Setting of Heritage Assets.

<u>Good Practice Advice Note 2 - Managing Significance in Decision-Taking</u>

2.27 The purpose of this Good Practice Advice Note 2 is to provide information on good practice to assist local authorities, planning and other consultants, owners, applicants and other interested parties in implementing historic environment policy in the National Planning Policy Framework (NPPF) and the related guidance given in the National Planning Practice Guide (PPG). It contains useful information on assessing the significance of heritage assets, using appropriate expertise, historic environment records, recording and furthering understanding, neglect and unauthorised works, marketing, design and distinctiveness.

2.28 In particular Note 2 identifies the issues which ought be considered to achieve successful good design with new development in sensitive areas, taking into account:

- The history of the place

- The relationship of the proposal to its specific site
- The significance of nearby assets and the contribution of their setting, recognising that this is a dynamic concept
- The general character and distinctiveness of the area in its widest sense, including the general character of local buildings, spaces, public realm and the landscape, the grain of the surroundings, which includes, for example the street pattern and plot size
- The size and density of the proposal related to that of the existing and neighbouring uses
- Landmarks and other built or landscape features which are key to a sense of place
- The diversity or uniformity in style, construction, materials, colour, detailing, decoration and period of existing buildings and spaces
- The topography
- Views into, through and from the site and its surroundings
- Landscape design
- The current and historic uses in the area and the urban grain
- The quality of the materials

GPA3: The Setting of Heritage Assets (Second Edition, December 2017)

2.29 This updated advice note focuses on the management of change within the setting of heritage assets. This document replaces GPA3: The Setting of Heritage Assets (March 2015) and the previously withdrawn Seeing History in the View (English Heritage, 2011) in order to aid practitioners with the implementation of national legislation, policies and guidance relating to the setting of heritage assets found in the 1990 Act, the NPPF and PPG. The guidance is largely a continuation of the philosophy and approach of the 2011 and 2015 documents and does not present a divergence in either the definition of setting or the way in which it should be assessed.

2.30 As with the NPPF the document defines setting as 'the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve'. Setting is also described as being a separate term to curtilage, character and context. The guidance emphasises that setting is not a heritage asset, nor a heritage designation, and that its importance lies in what it contributes to the significance of the heritage asset, or the ability to appreciate that significance. It also states that elements of setting may make a positive, negative or neutral contribution to the significance of the heritage asset.

2.31 While setting is largely a visual term, with views considered to be an important consideration in any assessment of the contribution that setting makes to the significance of an asset, and thus the way in which an asset is experienced, setting also encompasses other environmental factors including noise, vibration and odour. Historical and cultural associations may also form part of the asset's setting, which can inform or enhance the significance of a heritage asset. Further clarification on this matter has been provided by the High Court in relation to Steer v Secretary of State for Communities and Local Government and Others [2017] which stresses the potential importance and contribution of non-visual elements of setting.

2.32 This document provides guidance on practical and proportionate decision making with regards to the management of change within the setting of heritage assets. It is stated that the protection of the setting of a heritage asset need not prevent change and that decisions relating to such issues need to be based on the nature, extent and level of the significance of a heritage asset, further weighing up the potential public benefits associated with the proposals. It is further stated that changes within the setting of a heritage asset may have positive or neutral effects.

2.33 The document also states that the contribution made to the significance of heritage assets by their settings will vary depending on the nature of the heritage asset and its setting, and that different heritage assets may have different abilities to accommodate change without harming their significance. Setting should, therefore, be assessed on a case-by-case basis.

2.34 Historic England recommend using a series of detailed steps in order to assess the potential effects of a proposed development on significance of a heritage asset. The 5-step process is as follows:

1. Identify which heritage assets and their settings are affected;

2. Assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

3.Assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

4. Explore ways to maximise enhancement and avoid or minimise harm; and,

5. Make and document the decision and monitor outcomes."

vi. Conservation Principles, Policies and Guidance (English Heritage, 2008)

2.32 Conservation Principles outlines English Heritage's approach to the sustainable management of the historic environment. While primarily intended to ensure consistency in English Heritage's own advice and guidance through the planning process, the document is recommended to local authorities to ensure that all decisions about change affecting the historic environment are informed and sustainable.

2.33 This document was published in line with the philosophy of PPS5, yet remains relevant with that of the current policy regime in the emphasis placed upon the importance of understanding significance as a means to properly assess the effects of change to heritage assets. The guidance describes a range of heritage values which enable the significance of assets to be established systematically, with the four main 'heritage values' being:

2.34 Evidential value: which derives from the potential of a place to yield evidence about past human activity. It can be natural or man-made and applies particularly to archaeological deposits, but also to other situations where there is no relevant written record.

2.35 Historical value: which derives from the ways in which past people, events and aspects of life can be connected through a place to the present. It can be illustrative (illustrative of some aspect of

the past) or associative (where a place is associated with an important person, event, or movement).

2.36 Aesthetic value: which derives from the ways in which people draw sensory and intellectual stimulation from a place. Aesthetic values can be the result of the conscious design of a place, including artistic endeavour, or they can be the seemingly fortuitous outcome of the way in which a place has evolved and been used over time.

2.37 Communal value: which derives from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical (particularly associative) and aesthetic values, but tend to have additional and specific aspects. Commemorative and symbolic values reflect the meanings of a place for those who draw part of their identity from it, or have emotional links to it. Social value is associated with places that people perceive as a source of identity, distinctiveness, social interaction and coherence. Spiritual value attached to places can emanate from the beliefs and teachings of an organised religion, or reflect past or present-day perceptions of the spirit of a place.

2.38 The Principles emphasise that 'considered change offers the potential to enhance and add value to places…it is the means by which each generation aspires to enrich the historic environment' (Paragraph 25).

2.39 In addition to the above documentation, Historic England has published Heritage Advice Notes (HEANs) that provide detailed and practical advice on how national policy and guidance is implemented.

HEAN4: Tall Buildings (December 2015)

2.40 This document updates and supersedes 'Guidance on Tall Buildings' (2007) previously published by English Heritage and CABE. The 2007 guidance provided an explanation as to the approaches that the two organisations take when evaluating development proposals for tall buildings.

2.41 Due to their size and widespread visibility, tall buildings can significantly affect the character, appearance and identity of towns and cities. When positioned within the right locations and designed to a high standard they can provide excellent examples of architecture and make a positive contribution to the townscape and urban life of an area. Tall buildings situated within the wrong area and/or not well-designed, however, can harm the valuable qualities of a place.

2.42 Historic England notes that the definition of a 'tall building' is informed by the surrounding townscape. For example a ten-storey structure within neighbourhood of two-storey buildings is thought of as a tall building by comparison, whereas the same building proposed within the built-up city centre may not.

2.43 As previously discussed, NPPF Paragraph 193 makes clear that 'great weight' is attached to the conservation of designated heritage assets, including their settings and, furthermore, the design policies found in Paragraphs 124-132 reference the importance of good design which responds to local character and history, as well as the importance of integrating new buildings into the historic environment.

2.44 This document endorses the plan-led approach included within the NPPF, which encourages LPAs to identify locations where tall buildings could be acceptable and generally consider the scope for tall buildings when producing Local Plans.

2.45 In terms of planning applications it advocates discussing proposals with the LPA and historic England at an early stage, in correspondence with NPPF 39046. Furthermore, a clear and concise checklist of application documents is included.

2.46 The following design criterion is provided in order to assist applicants in design development.

- Architectural quality
- Sustainable design and construction
- Credibility of design
- Contribution to public space and facilities;
- Consideration of the impact on local environments (and particularly at ground level); and
- Provision of well-designed inclusive environment

2.47 It is also essential that development proposals of high quality will have a positive relationship including:

- Topography
- Character of place
- Heritage assets and their settings

Regional and Local Planning Policy

v. The London Plan

2.48 A New London Plan has been prepared in draft and was open to consultation until March 2018 (last updated 13th August 2018). Chapter 7 'Heritage and Culture' contains relevant draft policies HC1 to HC7. Of particular relevance to sites containing non-designated assets is HC1 as follows:

> **HC1 HERITAGE AND CONSERVATION GROWTH**
>
> **A. BOROUGHS SHOULD, IN CONSULTATION WITH HISTORIC ENGLAND AND OTHER RELEVANT STATUTORY ORGANISATIONS, DEVELOP EVIDENCE THAT DEMONSTRATES A CLEAR UNDERSTANDING OF LONDON'S HISTORIC ENVIRONMENT. THIS EVIDENCE SHOULD BE USED FOR IDENTIFYING, UNDERSTANDING, CONSERVING, AND ENHANCING THE HISTORIC ENVIRONMENT AND HERITAGE ASSETS, AND IMPROVING ACCESS TO THE HERITAGE ASSETS, LANDSCAPES AND ARCHAEOLOGY WITHIN THEIR AREA.**
>
> **B. DEVELOPMENT PLANS AND STRATEGIES SHOULD DEMONSTRATE A CLEAR UNDERSTANDING OF THE HISTORIC**

ENVIRONMENT AND THE HERITAGE VALUES OF SITES OR AREAS AND THEIR RELATIONSHIP WITH THEIR SURROUNDINGS. THIS KNOWLEDGE SHOULD BE USED TO INFORM THE EFFECTIVE INTEGRATION OF LONDON'S HERITAGE IN REGENERATIVE CHANGE BY:

1.SETTING OUT A CLEAR VISION THAT RECOGNISES AND EMBEDS THE ROLE OF HERITAGE IN PLACE-MAKING

2.UTILISING THE HERITAGE SIGNIFICANCE OF A SITE OR AREA IN THE PLANNING AND DESIGN PROCESS
3.INTEGRATING THE CONSERVATION AND ENHANCEMENT OF HERITAGE ASSETS AND THEIR SETTINGS WITH INNOVATIVE AND CREATIVE CONTEXTUAL ARCHITECTURAL RESPONSES THAT CONTRIBUTE TO THEIR SIGNIFICANCE AND SENSE OF PLACE

4.DELIVERING POSITIVE BENEFITS THAT SUSTAIN AND ENHANCE THE HISTORIC ENVIRONMENT, AS WELL AS CONTRIBUTING TO THE ECONOMIC VIABILITY, ACCESSIBILITY AND ENVIRONMENTAL QUALITY OF A PLACE, AND TO SOCIAL WELLBEING.

C. DEVELOPMENT PROPOSALS AFFECTING HERITAGE ASSETS, AND THEIR SETTINGS, SHOULD CONSERVE THEIR SIGNIFICANCE, BY BEING SYMPATHETIC TO THE ASSETS' SIGNIFICANCE AND APPRECIATION WITHIN THEIR SURROUNDINGS. THE CUMULATIVE IMPACTS OF INCREMENTAL CHANGE FROM DEVELOPMENT ON HERITAGE ASSETS AND THEIR SETTINGS, SHOULD ALSO BE ACTIVELY MANAGED. DEVELOPMENT PROPOSALS SHOULD SEEK TO AVOID HARM AND IDENTIFY ENHANCEMENT OPPORTUNITIES BY INTEGRATING HERITAGE CONSIDERATIONS EARLY ON IN THE DESIGN PROCESS.

D. DEVELOPMENT PROPOSALS SHOULD IDENTIFY ASSETS OF ARCHAEOLOGICAL SIGNIFICANCE AND USE THIS INFORMATION TO AVOID HARM OR MINIMISE IT THROUGH DESIGN AND APPROPRIATE MITIGATION. WHERE APPLICABLE, DEVELOPMENT SHOULD MAKE PROVISION FOR THE PROTECTION OF SIGNIFICANT ARCHAEOLOGICAL ASSETS AND LANDSCAPES. THE PROTECTION OF UNDESIGNATED HERITAGE ASSETS OF ARCHAEOLOGICAL INTEREST EQUIVALENT TO A SCHEDULED MONUMENT SHOULD BE GIVEN EQUIVALENT WEIGHT TO DESIGNATED HERITAGE ASSETS.

E. WHERE HERITAGE ASSETS HAVE BEEN IDENTIFIED AS BEING AT RISK, BOROUGHS SHOULD IDENTIFY SPECIFIC OPPORTUNITIES FOR THEM TO CONTRIBUTE TO REGENERATION AND PLACE-MAKING, AND THEY SHOULD SET OUT STRATEGIES FOR THEIR REPAIR AND RE-USE.

vi. The Local Development Plans for Havering and Barking & Dagenham

2.49 The Local Development Plans for Havering and Barking & Dagenham and include the relevant polices with regard to Listed Buildings, Locally Listed Buildings, Conservation Areas, Ancient Monuments and Archaeology.

2.50 The London Borough of Havering's Core Strategy and Development Control Policies

Development Plan Document (DPD) were adopted in 2008. The DPD contains policies which provide a framework for the consideration of development proposals affecting archaeology at the site. The relevant Core Strategy policy is as follows:

> **CP18 - HERITAGE**
>
> **ALL NEW DEVELOPMENT AFFECTING SITES, BUILDINGS, TOWNSCAPES AND LANDSCAPES OF SPECIAL ARCHITECTURAL, HISTORICAL OR ARCHAEOLOGICAL IMPORTANCE MUST PRESERVE OR ENHANCE THEIR CHARACTER OR APPEARANCE. CONTRIBUTIONS MAY BE SOUGHT TOWARDS THE PRESERVATION OR ENHANCEMENT OF HISTORIC ASSETS WHERE APPROPRIATE.**

2.51 The DPD policies within the adopted LDF comprise (2008) include; DC67: 'Buildings of Heritage Interest', DC68: 'Conservation Areas' (not relevant here as the policy relates to development *within* CA's), DC69: 'Other Areas of Special Townscape or Landscape Character' (not relevant here as relates to Emerson Park Policy Area, Hall Lane Policy Area and the Gidea Park Special Character Area)', DC70: 'Archaeology and Ancient Monuments' and DC71: 'Other Historic Landscapes' (not relevant here as refers to historic parks and Common Land protections). Havering's 'Heritage Supplementary Planning Document' (Adopted 2011) provides further information on the Borough's Heritage.

2.52 Policy D70 reads as follows:

> **"DC70 – ARCHAEOLOGY AND ANCIENT MONUMENTS:**
>
> **THE COUNCIL WILL ENSURE THAT THE ARCHAEOLOGICAL SIGNIFICANCE OF SITES IS TAKEN INTO ACCOUNT WHEN MAKING PLANNING DECISIONS AND WILL TAKE APPROPRIATE MEASURES TO SAFEGUARD THAT INTEREST. PLANNING PERMISSION WILL ONLY BE GRANTED WHERE SATISFACTORY PROVISION IS MADE IN APPROPRIATE CASES FOR PRESERVATION AND RECORDING OF ARCHAEOLOGICAL REMAINS IN SITU OR THROUGH EXCAVATION. WHERE NATIONALLY IMPORTANT ARCHAEOLOGICAL REMAINS EXIST THERE WILL BE A PRESUMPTION IN FAVOUR OF THEIR PHYSICAL PRESERVATION. PARTICULAR CARE WILL NEED TO BE TAKEN WHEN DEALING WITH APPLICATIONS IN ARCHAEOLOGICAL 'HOTSPOTS' WHERE THERE IS A GREATER LIKELIHOOD OF FINDING REMAINS.**
>
> **PLANNING PERMISSION WILL NOT BE GRANTED FOR DEVELOPMENT WHICH ADVERSELY AFFECTS THE THREE ANCIENT MONUMENTS IN THE BOROUGH OR THEIR SETTINGS."**

2.53 The informative states that in relation to non designated assets:

> **"DEVELOPMENT CONTROL POLICY DC70 APPLIES TO THE FOLLOWING ASSETS: NON-DESIGNATED ASSETS: ARCHAEOLOGICAL PRIORITY AREAS (APAS) AND THE ARCHAEOLOGICAL PRIORITY ZONES (APZS), AS IDENTIFIED BY THE GREATER LONDON ARCHAEOLOGICAL ADVISORY SERVICE (GLAAS) ON BEHALF OF ENGLISH HERITAGE IN COLLABORATION WITH THE COUNCIL."**

2.54 The associated 'Reasoned Justification' includes that 'There are three Scheduled Ancient

Monuments in Havering, the 14th Century Upminster Hall Barn or Tithe Barn in Hall Lane Upminster, the moated site at Dagenham Park and the Roman Road across Romford golf course.'

2.55 The Barking & Dagenham Local Plan Core Strategy, adopted July 2010. Relevant policy includes:

> **POLICY CP2: PROTECTING AND PROMOTING OUR HISTORIC ENVIRONMENT**
>
> **BARKING AND DAGENHAM HAS A RICH LOCAL HISTORY. SIGNS OF OUR FISHING, MARITIME AND INDUSTRIAL HERITAGE CAN STILL BE SEEN FOR EXAMPLE AT BARKING TOWN QUAY, THE FORD WORKS IN DAGENHAM, AND THE MALTHOUSE AND GRANARY BUILDINGS ON ABBEY ROAD. THE BECONTREE ESTATE, THE CURFEW TOWER AND REMAINS OF BARKING AND ABBEY, EASTBURY MANOR HOUSE, VALENCE HOUSE AND DAGENHAM VILLAGE ARE ALSO IMPORTANT SYMBOLS OF OUR PAST.**
>
> **HOWEVER, COMPARED TO MANY OTHER AREAS THE BOROUGH HAS RELATIVELY FEW PROTECTED HISTORIC ENVIRONMENT ASSETS SUCH AS LISTED BUILDINGS AND CONSERVATIONS AREAS. WITH THIS IN MIND THE COUNCIL WILL TAKE PARTICULAR CARE TO:**
>
> > **PROTECT AND WHEREVER POSSIBLE ENHANCE OUR HISTORIC ENVIRONMENT.**
> >
> > **PROMOTE UNDERSTANDING OF AND RESPECT FOR OUR LOCAL CONTEXT.**
> >
> > **REINFORCE LOCAL DISTINCTIVENESS.**
> >
> > **REQUIRE DEVELOPMENT PROPOSALS AND REGENERATION INITIATIVES TO BE OF A HIGH QUALITY THAT RESPECTS AND REFLECTS OUR HISTORIC CONTEXT AND ASSETS.**

2.56 The Barking and Dagenham LDF Development Plan (adopted March 2011) includes Policy BP2: Conservation Areas and Listed Buildings and Policy BP3: Archaeology as follows:

> **"POLICY BP3: ARCHAEOLOGY**
>
> **THE CONSERVATION OR ENHANCEMENT OF ARCHAEOLOGICAL REMAINS AND THEIR SETTINGS WILL BE SECURED BY:**
>
> **(A) REQUIRING AN APPROPRIATE ASSESSMENT AND EVALUATION TO BE SUBMITTED AS PART OF THE PLANNING APPLICATION FOR ANY DEVELOPMENTS IN AREAS OF KNOWN OR POTENTIAL ARCHAEOLOGICAL INTEREST.**
>
> **(B) OPERATING A PRESUMPTION IN FAVOUR OF THE CONSERVATION OF SCHEDULED ANCIENT MONUMENTS AND OTHER NATIONALLY IMPORTANT ARCHAEOLOGICAL SITES AND THEIR SETTINGS.**

(C) REQUIRING THE CONSERVATION IN SITU OF OTHER ARCHAEOLOGICAL REMAINS OR, WHERE THIS IS NOT JUSTIFIABLE OR FEASIBLE AND THE NEED FOR THE DEVELOPMENT AND OR OTHER MATERIAL CONSIDERATIONS OUTWEIGH THE IMPORTANCE OF THE REMAINS, MAKING PROVISION FOR THEIR EXCAVATION, RECORDING AND DISSEMINATION.

WHERE APPROPRIATE, ACCESS TO AND INTERPRETATION OF IN-SITU ARCHAEOLOGICAL REMAINS SHOULD BE PROVIDED, IF THIS IS POSSIBLE WITHOUT HAVING A DETRIMENTAL IMPACT ON THE SITE.

2.57 The London Borough of Havering's Core Strategy and Development Control Policies Development Plan Document were adopted in 2008. The Plan contains the following policies which provide a framework for the consideration of development proposals affecting archaeology at the site:

CP18 - HERITAGE
ALL NEW DEVELOPMENT AFFECTING SITES, BUILDINGS, TOWNSCAPES AND LANDSCAPES OF SPECIAL ARCHITECTURAL, HISTORICAL OR ARCHAEOLOGICAL IMPORTANCE MUST PRESERVE OR ENHANCE THEIR CHARACTER OR APPEARANCE. CONTRIBUTIONS MAY BE SOUGHT TOWARDS THE PRESERVATION OR ENHANCEMENT OF HISTORIC ASSETS WHERE APPROPRIATE.

2.58 The Heritage Supplementary Planning Document was adopted in 2011 and contains the following policy relevant to archaeology at the site:

DC70 – ARCHAEOLOGY AND ANCIENT MONUMENTS
THE COUNCIL WILL ENSURE THAT THE ARCHAEOLOGICAL SIGNIFICANCE OF SITES IS TAKEN INTO ACCOUNT WHEN MAKING PLANNING DECISIONS AND WILL TAKE APPROPRIATE MEASURES TO SAFEGUARD THAT INTEREST. PLANNING PERMISSION WILL ONLY BE GRANTED WHERE SATISFACTORY PROVISION IS MADE IN APPROPRIATE CASES FOR PRESERVATION AND RECORDING OF ARCHAEOLOGICAL REMAINS IN SITU OR THROUGH EXCAVATION. WHERE NATIONALLY IMPORTANT ARCHAEOLOGICAL REMAINS EXIST THERE WILL BE A PRESUMPTION IN FAVOUR OF THEIR PHYSICAL PRESERVATION. PARTICULAR CARE WILL NEED TO BE TAKEN WHEN DEALING WITH APPLICATIONS IN ARCHAEOLOGICAL 'HOTSPOTS' WHERE THERE IS A GREATER LIKELIHOOD OF FINDING REMAINS.

PLANNING PERMISSION WILL NOT BE GRANTED FOR DEVELOPMENT WHICH ADVERSELY AFFECTS THE THREE ANCIENT MONUMENTS IN THE BOROUGH OR THEIR SETTINGS.

2.59 The new draft Havering Local Plan 2016-2031 contains the following draft policy relevant to Heritage Assets:

POLICY 28

HERITAGE ASSETS

THE COUNCIL RECOGNISES THE SIGNIFICANCE AND VALUE OF HAVERING'S HERITAGE ASSETS AND WILL SUPPORT:
I. PROPOSALS THAT SEEK TO SUSTAIN OR ENHANCE THE SIGNIFICANCE OF HERITAGE ASSETS AT RISK IN THE BOROUGH;

II. THE MAINTENANCE OF UP TO DATE CONSERVATION AREA APPRAISALS AND MANAGEMENT PLANS;
III. THE IDENTIFICATION, AND MAINTENANCE, OF A LOCAL LIST OF NON-DESIGNATED HERITAGE ASSETS THAT MEET AGREED SELECTION CRITERIA;

IV. WELL DESIGNED AND HIGH QUALITY DEVELOPMENT IN A CONSERVATION AREA, OR ITS SETTING, WHICH PRESERVES, ENHANCES OR BETTER REVEALS THE CHARACTER AND APPEARANCE OF THE AREA AND ITS SIGNIFICANCE, AND WHICH CONTRIBUTES TO LOCAL CHARACTER AND DISTINCTIVENESS, TAKING INTO ACCOUNT THE CONSERVATION AREA APPRAISAL OR MANAGEMENT PLAN. WHERE A BUILDING (OR OTHER ELEMENT) DETRACTS FROM THE SIGNIFICANCE OF A CONSERVATION AREA, ITS REMOVAL WILL BE SUPPORTED WHEN ACCEPTABLE PLANS FOR REDEVELOPMENT HAVE BEEN AGREED;

V. VIABLE USES, ALTERATIONS OR EXTENSIONS TO A LISTED BUILDING, OR DEVELOPMENT WITHIN ITS SETTING, WHICH WOULD NOT BE HARMFUL TO THE SIGNIFICANCE OF THE HERITAGE ASSET, INCLUDING ITS HISTORIC AND ARCHITECTURAL INTEREST;

VI. WELL DESIGNED AND HIGH QUALITY DEVELOPMENT WITHIN A REGISTERED PARK OR GARDEN OF HISTORIC INTEREST, HISTORIC PARK OR GARDEN OF LOCAL INTEREST, AREA OF SPECIAL TOWNSCAPE OR LANDSCAPE CHARACTER, OR WITHIN THEIR SETTING, WHICH SUSTAINS OR ENHANCES THE SIGNIFICANCE OF THE HERITAGE ASSET, INCLUDING ITS SPECIAL CHARACTER AND IMPORTANT VIEWS; AND

VII. PROPOSALS AFFECTING THE SIGNIFICANCE OF A HERITAGE ASSET WITH ARCHAEOLOGICAL INTEREST, INCLUDING THE CONTRIBUTION TO SIGNIFICANCE MADE BY ITS SETTING, WHERE:

A. THE PROPOSALS ARE SUPPORTED BY AN APPROPRIATE ASSESSMENT OF THE ASSET'S SIGNIFICANCE;

B. ANY HARM IS MINIMISED, CLEARLY JUSTIFIED AND NECESSARY TO ACHIEVE PUBLIC BENEFITS THAT ARE SUBSTANTIAL ENOUGH TO OUTWEIGH LOSS OR HARM TO THE ASSET'S SIGNIFICANCE; AND

C. THE SIGNIFICANCE OF ANY ASSET OR PART OF AN ASSET TO BE LOST IS RECORDED AND MADE PUBLICLY ACCESSIBLE.

SUBSTANTIAL HARM TO, OR LOSS OF, A SCHEDULED MONUMENT OR NON-DESIGNATED HERITAGE ASSET WITH ARCHAEOLOGICAL INTEREST THAT IS DEMONSTRABLY OF NATIONAL IMPORTANCE, WILL ONLY BE CONSIDERED IN EXCEPTIONAL CIRCUMSTANCES.

2.60 In terms of relevant designated heritage assets, as defined above no designated World Heritage Sites, Registered Parks, Scheduled Monuments, Historic Battlefield sites or Historic Wreck sites lie within 1km of the Beam Park development site. The central and western areas of the Site lie within the Tier II 'Ripple Road' Archaeological Priority Area (HER Ref: DLO37897) as defined by the London Borough of Barking & Dagenham (Fig. 2). To the immediate south of the Ripple Road APA is the Tier III APA 'Barking Level and Dagenham Marsh' (DLO37927). The eastern area of the Site is largely covered by an equivalent Havering Borough Council 'Archaeological Priority Zone' (APZ) relating to Alluvium Deposits (Geology) (Tier III) (DLO33196). The north-eastern zone of the Site, where gravels are at a higher elevation, is the south-west extent of another APZ relating to 'Gravel Sand Deposits (Geology)' (Fig. 2).

3 PHASE 2 PROPOSALS

3.1 The Phase 2 (sub phases 2A and 2B) development is centred TQ 50230 83015.

3.2 Phase 2A within LBH includes Block I, Block T and housing zones 13 and 16 (Figs 21 & 22).

3.3 Phase 2B within LBBD includes Blocks N, S and Z and housing zone 8 (Figs 21 & 22).

4 BASELINE DATA

Site Description

4.1 The red line area of Phase 2 comprises an area of 10.3ha (3.68ha in LBH and 6.62ha in LBBD).

4.2 The split Site is located on either side of the Beam River (The Beam and PTA site areas) bound to the north by the A1306 New Road, and to the south by the HS1 Railway. The area excludes the areas that will not be built upon, including the Beam corridor itself.

4.3 The Phase 2 construction areas are (prior to the proposed surcharging) c.2m higher than the Beam River's banks due to emplacement of modern made ground in the mid-20th century. To the east and immediate west of the green corridor are areas of hard-standing associated with the former Ford factory car parks. The remainder of Phase 2 west of the river corridor is also comprised of hardstanding but here the surfaces overlay the foundations of the former Ford Assembly Plant, fringed to the north side by a former internal road known as Sierra Drive and several light structures. The associated structures and former structures are described within the Historic Building report conducted in 2017 by PCA (Appendix 2),

Heritage Planning Background

Scheduled Monuments

4.4 There are no Scheduled Monuments within the Site or within 1km of the Site. There are no Scheduled Monuments within the Site or the 1km Study Area. According to the 'Magic' Website (http://www.magic.gov.uk/) there are several Scheduled Monuments beyond the 1km Study Area, with Lesnes Abbey shown within the 5km area. The nearest comprise;

- Lesnes Abbey c.4.7km to the south-west to the south of the Thames (SM 1002025)
- Barking Abbey is located c.5km to the west (SM 1003581) (just west of the 5km buffer)
- Purfleet Magazine c.5.1km to the south-east (SM 1005561) (just south-east of the 5km buffer)
- Medieval moated house east of St Michael's Church, Aveley - c.5.3km to the south-east (SM 100562) (just south-east of the 5km buffer)

Registered Parks and Gardens

4.5 There are no Registered Parks and Gardens within the vicinity of the Site.

Conservation Area

4.6 According to the Havering's and Barking & Dagenham's respective Local Development Framework's Proposals Maps (Havering adopted 2008; Barking & Dagenham adopted 2012), the Site is not located within or adjacent to any of the Conservation Areas, within the Boroughs. The closest Conservation Areas are the *Dagenham Village Conservation Area* (RPS 215), and the *Rainham Conservation Area* (RPS 216) which are located at c.1.5km to the north and east south-

east of the Site respectively. There are no other Conservation Areas within 2km of the Site, as shown on the respective Proposal Maps.

4.7 Historic England advised (23rd November 2016) that the Rainham CA (RPS 216) is the main area of interest in terms of setting with regard to Conservation Areas and listed buildings. It was designated in 1968 (*London Borough of Havering Rainham Conservation Area Character Appraisal and Management proposals*).

Listed Buildings

4.8 A search of the Greater London Historic Environment Record (GLHER) and of British Listed Buildings Online and the Magic website (http://magic.defra.gov.uk/) maintained by Historic England, for 1km around a centre line through the Site, finds no Listed Buildings within the 1km Study Area. Listed Buildings within 5km of the Site are mapped as Figure 2B and listed in Appendix 1, with those within 2km discussed below.

4.9 There are relatively few Listed Buildings within Barking & Dagenham and adjacent areas of Havering Borough.

4.10 The most important cluster within a wider area (Figure 2B) are located within the Rainham Conservation Area (RPS 216 on Fig. 2B) about 1.5km to the south-east, including, the Grade I listed (medieval) Church of St Helen and St Giles at Rainham (RPS 151; HE 201549), the Grade II* Listed 'Lodge at Rainham Hall' (RPS 153; 201553), 'Stable block at Rainham Hall' (RPS RPS 154; 201554), and 'Forecourt railings, gates, piers and walls and vases at Rainham Hall' (RPS 152; 201552). Other Grade II Listed buildings within the Conservation Area include 'Redbury' (RPS 164; 201550), the Vicarage (RPS 159, 198240), Rainham War Memorial (RPS 157; 488534) and 2-8 Upminster Road south (RPS 163; 201664).

4.11 The Grade II* Listed Church of St Peter and St Paul (RPS 156; 198241) and associated Dagenham Village Conservation Area (RPS 215) are located c.1.5km to the north. Grade II Listed Buildings at Dagenham, between 1.3km and 1.7km to the north, include 'The Vicarage' (RPS 166; 201555), 'Cross Keys Inn Public House' (RPS 158; 198239), 'Sub Station of Essex Water Co.' (RPS 167; 201570) and 'Stoneford Cottage and railings to front wall' (RPS 161; 198253).

4.12 There are no Listed Buildings within 2km to the west of the Site (views to the west are currently screened by the Ford Stamping Factory).

4.13 The closest Listed Building to the south of the Site is Jetty No.4 and approach, formerly at Samuel Williams and Company, Dagenham Dock (RPS 168; HE Ref; 489391). The main cluster to the south side of the River Thames are clustered c.2.1km to the south-west at within Bexley and include the Grade I listed Crossness Pumping Station (RPS 169; 198633), the Grade II listed, 'Workshop SE of Main Engine House, Crossness Power Station' (RPS 180; 198670), and Grade II 'Workshop and Range to SW of Main Engine House, Crossness Power Station' (RPS 193; 432966). These are located within the Crossness, Belvedere, Bexley Conservation Area (RPS 217).

4.14 The above designated Built Heritage assets within 2km of the Site are listed below and considered for suitability for EIA assessment. British Listed Buildings Online provides the following descriptions for buildings within 2km (see Fig. 2b).

4.15 For Barking & Dagenham the most significant Listed Building is Grade II*:

Church of St Peter and St Paul, Barking and Dagenham (RPS 156; HE ID 198241) II*

'Mediaeval origin; part rebuilt 1800. Nave of church and western tower a good example of Strawberry Hill Gothic built in 1800 to the designs of William Mason. Signed and dated over door. Rubble, with brick dressings. Three stage tower of stock brick with angle piers, pointed belfry windows with stock brick rustications. Oval porch set in pointed recess with quadrupled pillars. Shaped battlements of Jacobean character. Chancel C13 with north aisle of late C15 with fine monument with life size statues to Sir Richard Alibon 1688 and his wife. No old fittings in nave save early C19 west gallery. Monument with brasses to Sir Thomas Urswycke of Marks Hall.'

4.16 The closest Listed Building within Barking & Dagenham to the Site is Grade II listed:

Jetty Number 4 and Approach, Formerly at Samuel Williams and Company, Dagenham Dock, Barking and Dagenham (RPS 168; HE ID 496391) II

Coaling jetty. 1899-1903, for Samuel Williams & Sons Ltd. Built to designs by L. G. Mouchel & Partners, British agents for Hennebique's patent reinforced-concrete constructional system. Extended one bay in 1906-7, to designs by Arthur E. Williams, engineer and son of Samuel Williams, incorporating his patent system for the horizontal casting of reinforced-concrete piles, developed in response to problems encountered with vertically cast Hennebique piles during the construction of this jetty. Jetty about 500ft (150m) long, parallel to north bank of Thames in front of Dagenham Dock. Approach from shore about half as long, angled at about 45 degrees to jetty, running from an easterly point on shore to meet jetty near its east end. Layout can be likened to an asymmetrical T shaped like a handgun. 13-bay jetty has 10 bays west of approach, one bay to east, two bays at junction, each bay being about 40ft (12m) square. Bays west of approach widened to north in mid 20th century, tapering towards west end. Original reinforced-concrete structure largely intact, though obscured by mid 20th-century additions. Trabeated or post-and-lintel construction, with robust cylindrical piers on pile foundations and with cushion capitals supporting platforms or floors framed by grids of girders. High-level and low-level horizontal cross braces link opposed pairs of piers, some broken. Early braces and girders have chamfered arrises. Original construction clearly visible on approach, 10 bays, similarly built, somewhat slighter piers with cushion capitals, platform ramps up slightly from shore to jetty. Piers and one bay of platform at jetty end of approach more robust, having cross braces as on jetty. Girder ends on approach project slightly over pier capitals. Railings renewed, but an original parapet panel with a coped cornice head stands on east side of approach on shore side. Both jetty and approach have disused tracks for cranes and railway wagons.

Source: L. T. C. Rolt, 'Samuel Williams & Sons Ltd; 1855-1955', in 'A Company's Story in its Setting: Samuel Williams & Sons Ltd, 1855-1955' (London, 1955).

Jetty No. 4 is important as being among Britain's earliest surviving reinforced-concrete structures, with additional interest arising

from the invention and early deployment here of Williams's patented piles, an important advance for civil engineering. The reinforcing steelwork and other additions of the mid 20th century and later are not of special interest.'

4.17 Other Grade II buildings within 2km include a cluster adjacent to the church within the CA;

Stoneford Cottage and Railings to Front Wall, Barking and Dagenham (RPS 161; HE ID: 198253);

'Early C19 villa. Stucco. Two storeys. Three windows. Glazing bars. Ground floor with panelled shatters and central panelled door beneath plain semi-circular fanlight. Upper floor windows with ornamental cast iron window boxguards. Overhanging eaves and flat pitched hipped slated roof. Cast iron railings to front boundary wall.'

The Vicarage, Barking and Dagenham (RPS 166; HE ID 201555)

C17 - dated 1665. Two storeys, rendered. Two gables and central 2-storey gabled porch. Bargeboards. Three modern windows, modern tile roof. Eastern side has miscellaneous windows of different dates irregularly placed. Two flat topped C18 brick sash bays. Gable to left C19 porch. RCHM.

Cross Keys Inn Public House, Barking and Dagenham (RPS 158; HE ID 198239)

'Cl5, timber framed hall house with gabled jettied cross wings. Two storeys, gable ends with exposed restored timber framing with leaded windows. Ground floor of whole of modern character with modern doors and windows. Old tile roof with central 3-light casement dormer with hipped roof. Panelled room inside, Cl7'

621, Rainham Road South, Barking and Dagenham (RPS 160; HE ID 198252)

'Mid-C19 former Police Station. Yellow stock brick. Three window bays wide. Round headed gauged brick arches to ground floor openings contained in semi-circular headed gauged brick recesses with brick keys and raised brick impost bands. Outer bays with recessed sash windows with radiating glazing bars. Central bay with later entrance door and covered fanlight. Raised brick band at first floor level. Square headed window openings at first floor level with recessed sash windows sub-divided by glazing bars. Unusual architraves comprising raised painted stone cills and lintels linked by raised brick piers. Hipped slated roof with yellow stock brick chimney stacks.'

4.18 For Havering there is a cluster of Listed Buildings within Rainham Conservation Area (RPS 216). The most significant (High importance) within the CA are:

Grade I Listed Church of St Helen and St Giles at Rainham (RPS 151; HE ID: 201549);

'Circa 1170, a remarkably complete and unaltered Norman church, consisting of nave with aisles, chancel and west tower. Later features include clerestory windows of the C18. The chancel has a C15 crown-post roof of 2 bays. An unusual feature of this church is a mediaeval scratch-drawing of a ship on the wall of the rood-loft staircase. (RCHM).

4.19 Grade II* structures comprise:

Rainham Hall (RPS 155: HE 201551) II*

> **'Built in 1729 for John Harle a merchant and owner of Rainham Wharf. Three storeys and basement. Brown-red brick with red rubbed brick dressings. Plinth with stone cornice, rusticated stone angle quoins, brick bands between each storey, elaborate carved wood cornice, panelled parapet. Five cambered headed sash windows, cased frames, glazing bars. Double keystone, and projecting panelled aprons to each window. The centre one window bay of the front projects slightly for the whole height. Central entrance with very handsome carved wood porch with fluted Corinthian pilasters supporting individual entablatures with an open segmental pediment, richly coffered on the soffit. Doorway has architrave surround with baroque scrolled feature to centre. Door with 12 glazed panels, thick glazing bars; 2 fielded panels to bottom. Flight of 4 stone steps, with moulded nosings, up. Rear elevation, similar, but with recessed aprons to each window, central closed porch with fluted pilasters, triglyph frieze and cornice. A symmetrical central 1st floor round headed staircase window with dropped cill. Churchyard elevation similar, no doorway or central projection, 3 windows. Similar front to south. Flat topped hipped old tile roof, rectangular stacks. The interior is unaltered with many fine contemporary fittings. All the principal rooms are fully panelled, there is a black and white marble floor in the entrance hall, a fine staircase with cut string and twisted balusters, and several good fireplace.'**

Forecourt Railings, Gates and Piers Walls and Vases at Rainham Hall, Havering (RPS 152: HE 201552) II*

> **'Early C18. Brick and stone plinth walls to front garden and very good wrought iron railings and gates with overthrow and monogram. Old garden brick walls, wrought iron gate with overthrow between brick piers on right hand. Stone garden vases of contemporary date.'**

The Lodge at Rainham Hall, Havering (RPS 153: HE 201553) II*

> **'Early C18. Front facing house. Two storeys, red brick, 4 sashes in cased frames. Wood modillioned eaves cornice. Hipped old tile roof with slight bell-cast. Two sashed hipped dormers. Similar elevation to road, 2 windows only; brick hand between storeys.'**

Stable Block at Rainham Hall, Havering (RPS 154: HE 201554) II*

> **C18. Stock brick, one lofty storey. Parapet, pantile roof. Two round headed coach arches of red rubbed brick.**

4.20 Grade II Listed structures (High importance) within Rainham Conservation Area include:

Rainham War Memorial, Havering (RPS 157; HE 488534) II

> **'War Memorial clock tower. 1920 by Mr Vinton, builder. Red Belgian brick, Portland and cast stone dressings. Hexagonal short tower with clock faces to three sides. Sloping base with names of**

war dead. Stone blocks inscribed 'LEST WE FORGET' at angles. Gauged arches to niche and doorway. Inscription panels on sides. Narrow pilasters at angles. Upper parapet with balustrade. The memorial is set within iron railings. HISTORY: unveiled by Col. Whitmore, Lord Lieutenant of Essex, on 7th November 1920. This practical form of war memorial, prominently sited in front of the parish church, cost ?60 to erect.'

The Vicarage, Havering (RPS 159: HE 20155) II

'1710 (article by H F Biden in the Upper Norwood Athenaeum 1913). Two storeys and attic. Three sashes, no glazing bars, and 3 blank panels. Door off-centre with wide hood on bold shaped brackets. Modern tiled roof. Three gabled sash dormers. Gable ends. Plain stacks. Later wing to the rear with roof-ridge rising above that of the main range. Two storey weatherboarded extension at south-east with lower roof line, pantiled.'

K6 Kiosk, outside the Bell Public House, Havering (RPS 162; HE ID 201694) II

'Telephone kiosk. Type K6. Designed 1935 by Sir Giles Gilbert Scott. Made by various contractors. Cast iron. Square kiosk with domed roof. Unperforated crowns to top panels and margin glazing to windows and door.'

2-8 Upminster Road South, Havering (RPS 163: HE 201664) II

'C17 or early C18 two storey range of timber-framed houses. Nos 2, 4 and 8 now with shop fronts. No 2 has a return elevation with 2 windows to each storey, a central stack and a hipped roof terminating in the rear wing. No 4 has one sash window to the upper storey, No 6 has a side entrance reached from an open passage between Nos 6 and 8, and 2 sash windows to the upper storey, the one at the east with glazing bars. No 8 has C19 shop window with small panes and one sash above. The front of the whole range is rendered. Tile roof. Irregular rear elevation with late extensions and outshots.'

Redbury, Havering (RPS 164; HE 201550) II

'Mid C18. Brick, 2 tall storeys and dormers. Three widely spaced sashes with cambered heads and cased frames. Central door approached by 3 stone steps, the door having 6 flush panels and circular cast-iron knocker. Reeded surround with lion's-head angle blocks, rectangular radiating leaded fanlight (unpainted). Deep broad hood with moulded edges and bold shaped brackets. Brick eaves, 3 hip-roofed sash dormers rising from wall face. Modern tile roof covering. On street front 2 Sun Insurance marks (Nos 241920 and 537610) 1 Phoenix and 1 Royal Exchange (No 238625). Rear elevation of 2 lower storeys, with canted upper storey bay windows.'

4.21 The closest Listed Building to the Site within Havering is:

Grade II Sub Station of Essex Water Company, Havering (HE ID 201570).

'After 1897. Italianate pumping station. 'T' plan stock brick with heavy bracketed cornice. Hipped slated roofs. Tall semi-circular

headed windows and doors with rounded section label mouldings. Band course at the springing of the tall window openings. Semi-circular headed arch to the main entrance on the south front; steps up to this entrance.'

4.22 Due to increased proposed building heights two further designated assets to the south side of the River Thames have been assessed. These comprise the Grade I Listed Building Crossness Pumping Station and the Scheduled Monument and Grade II listed (upstanding walls) Lesnes Abbey 4.7 km to the south-west. Descriptions are included in Section 6 below.

Locally Listed Buildings

4.23 In terms of Locally Listed Buildings the periodically updated 'London Borough of Barking and Dagenham Local List of Buildings of Special Architectural or Historic Interest' includes 123 structures. Of these two are located on New Road (85 – '1-15 Princess Parade' and 86 – 'Imperial House'). None of the structures within the Site are locally listed. The corresponding publication for Havering 'Heritage Asset Register Buildings of Local Heritage Interest' (London Borough of Havering 2014) lists 219 buildings. Nine are within Rainham but none are within the Site or adjacent areas (such as fronting New Road). Buildings associated with the Ford works do not appear on either Borough's local lists.

Archaeological Priority Zones/ Archaeological Priority Areas

4.24 Havering APZ (DLO33198) for 'Gravel Sand Deposits (Geology)' (RPS 2 on Fig. 2) relates a zone at the north-eastern zone of the Phase 2 Site, where gravels are at a higher elevation. The APZ reflects higher potential for prehistoric and later settlement on elevated gravels as demonstrated by a number of sites and finds of prehistoric and Roman date described below in the period descriptions.

4.25 The eastern area of the Site is also within a Havering Archaeological Priority Zone (APZ) (DLO33196) relating to the potential for archaeology beneath and within alluvium (RPS 3 on Fig. 2).

4.26 Havering APZ (DLO33196) for 'Alluvium Deposits (geology) (RPS 3) includes the following legal description:

'*Potential prehistoric deposits may be buried beneath alluvial deposits. Alluvium deposits can be conducive for the preservation of biological environmental features which can useful for dating purposes.*'

4.27 The western area of the Site, within LBBD, is within the Ripple Road APA (DLO37897) (RPS 70). The Tier II APA includes the following description:

'*This Archaeological Priority Area covers a corridor of archaeological potential along the Ripple Road, covering the geological change from peat deposits along the foreshore and the gravel to the north. This area has been designated as a Tier 2 APA as significant finds and features have been found close to the road, particularly dating to the prehistoric era. These include the late Neolithic to early Bronze Age Dagenham Idol, and a nearby Bronze Age trackway. Evidence of Roman activity in the form of burials and cremations has also been found in this APA. There is a potential for further archaeological remains dating from the prehistoric period onwards within this area, particularly dating to the prehistoric, Roman, medieval and post-medieval periods*.'

4.28 The western area of the Site is located immediately north of the Tier III Barking Level and Dagenham Marsh APA (DLO37927; RPS 73) related to the potential for Holocene archaeology beneath and within alluvium. The APA includes the following description:

'*The Barking Level and Dagenham Marsh Archaeological Priority Area covers the area from the Thames foreshore, to the London, Tilbury and Southend railway line to the north. The area was largely undeveloped prior to the late 19th and early 20th centuries. The APA is classified as a Tier 3 because it is an extensive area with evidence for surviving archaeological landscapes. It is also a landscape with a high potential for the preservation of organic remains associated with a wetland environment*.'

4.29 Further APA's within the wider Study Area include the Tier II Beam Valley Country Park APA (DLO37898; RPS 71); Tier II Dagenham Park APA (DLO37899; RPS 72) and Beam Wantz Confluence APA (DLO37899; RPS 74). The latter is designated due to the archaeological interest in the meeting point of watercourses in terms of human interaction, and is supported by prehistoric, Romano-British and Anglo-Saxon discoveries in addition to peat and alluvium deposits (see below).

4.30 GLAAS have established a basic archaeological risk model in relation to their APA Tier system (https://historicengland.org.uk/services-skills/our-planning-services/greater-london-archaeology-advisory-service/greater-london-archaeological-priority-areas/). They provide a matrix that attributes denotes varying levels of archaeological sensitivity to development dependant on the Tier level and the scale of development. The Tier II and III APA's commensurate with the Beam Park Site area would be categorised as High risk on this basis because of scale (over 2 hectares). This is defined as follows: 'High risk means development likely to cause harm to heritage assets of archaeological interest and fairly likely to cause significant harm.'

4.31 Nevertheless, the application of such generalised criteria is required to be established on a case by case basis and depends on the degree of construction impact and the actual presence/absence of significant archaeology that might be affected.

Topographic and Geological Background

4.32 The Site is located within the former floodplain of the River Thames, with the Thames located 1.25km to the south. The artificially straightened Beam River tributary and its valley flows north-south through the Site.

4.33 The Site is generally flat with ground elevations varying but approximately at 2.4m above ordnance datum within areas of hard-standings (AOD) either side of the Beam River (RSK 2016). There is a drop of c. 2m within the green corridor of the river bank (which reflects the deposition of Made Ground either side of the river). Ground levels rise above the Thames floodplain to the north of the Site.

4.34 The British Geological Survey (BGS Website, 2016) and British Geological Survey Solid & Drift Sheet 257 (BGS 1996) records the solid geology the majority of the Site as Lambeth Group (Clay, Silt and Sand). Superficial deposits of Pleistocene and Holocene date are recorded across the Site. Taplow Gravel Formation '*Sand And Gravel. Superficial Deposits formed up to 2 million years ago in the Quaternary Period*' are present sealing Sold Geology across the Site area but outcrop at the surface to the north-east of the Site, to the east of the Beam River.

4.35 The principal deposits (in stratigraphic order) associated with the Site are therefore:

- Made Ground (20th century)
- Upper Alluvium (Holocene)
- Peat (Holocene)
- Lower Alluvium (early Holocene)
- Terrace Gravels (Pleistocene deposits associated with the Anglian glaciation c.450,000 years ago and subsequent fluvial reworking)
- Lambeth Group (Clay, Silt and Sand)/ Thanet Sand
- London Clay (Tertiary geology)

4.36 The Greater Thames Estuary Historic Environment Research Framework provides the following summary of studies of the deposits:

'*...the nature of the Holocene deposits was based on extensive work by Devoy (1979; 1982), where borehole studies were integrated with biostratigraphic studies to infer phases of transgression and regression. Holocene stratigraphy in the estuary is complex and affected by a range of factors, for example the underlying (pre-Holocene) surface topography. This complexity means that the broadly sub-horizontal sequences predicted do not always apply (Williams and Brown 1999, 28). The Greater Thames region has a large amount of palaeoenvironmental data although the distribution of this data is patchy, with London being particularly well represented. Some large projects have taken place such as those along the A13, the Channel Tunnel Rail Link and the Jubilee Line Extension. These large projects represent just a fraction of the numbers that have taken place for individual sites, where reporting has taken place on a site-wide basis, but has rarely been published or synthesised more broadly...Recent fieldwork on the Olympics site at Stratford, East London, has had a significant palaeoenvironmental component. Archaeological remains, including artefacts and cut features at Carpenters Road (Olympics site 26) confirmed the landscape modelling that predicted it lay on the margins of Neolithic/Bronze Age wetland suitable for human occupation. Evaluation identified widespread evidence for prehistoric occupation including Mesolithic flints, Bronze Age field systems and a hut... Interpretation of the resulting geoarchaeological database allowed the creation of palaeogeographic maps.*' (Greater Thames Estuary Historic Environment Research Framework 2010, 14-15).

4.37 The APA text for the adjacent Barking Level and Dagenham Marsh (DLO37927) also emphasises the effect relative sea level rise at the start of the Holocene, such that the Thames River levels rose rapidly through the Mesolithic and the valley sides became inundated. The process slowed towards the end of the Mesolithic leaving wide areas of wetlands in the Dagenham and Barking area, initially as wooded wetlands leading to '*alder carr and then salt marsh into the Bronze and earlier Iron Ages' before the rate of relative sea-level rise again increased, and the wetlands were overtopped by estuarine waters depositing muds over the earlier marshland*. *These wetlands would have been extremely rich in natural resources at times within their history, and there is strong evidence supporting human exploitation of the wider wetlands*.'

4.38 In the earlier periods eyots (elongated islands) islands formed between the braided channels within the floodplain and later, within the Neolithic and Bronze Age peat developed in the marshy

conditions across the floodplain zone. With regard to eyot formation a recent study of borehole data for the Barking Level located an example south of Barking that was c. 500m wide and over a kilometre in length.

4.39 In recent years the formation of Holocene deposits has received increasing attention from archaeologists and geo-archaeologists. Most notably the Olympic Park and the Lower Lea Valley to the west have involved the creation of detailed sub-surface topographical modelling and physical investigation based on large number of geo-technical and geo-archaeological (palaeo-environmental) boreholes and bulk and column sampling from trenches and excavation areas (Powell 2012; Corcoran et al 2011).

4.40 These projects culminated in the production of sub-surface topographical models allowing an assessment of the development of the landscape over the past 12,000 years. In particular they drew attention to the complex development of the formerly braided River Lea and its former multiple tributaries that created a series of islands within the flood plain, some of which were associated with prehistoric and later occupation/activity. The Beam River, though on a smaller scale than the Lea, is also likely to have had a complex history of former channels (palaeo-channels), whilst other former palaeo-channels may formerly have crossed the Site (see below).

4.41 At the Olympic Park the recorded thickness of the Holocene alluvium and peat was found to have been '*affected by modern truncation and compaction by the varying depths of made ground*' (Powell 2012). At Beam Park similar processes have occurred including surcharging to slightly compact ground levels across the Site in 2006.

Existing borehole data and QUEST sub-surface topographical modelling

4.42 Prior to the associated Beam Park, London Riverside project there were no geo-archaeological boreholes for the Site recorded on the GLHER at the Site. However, the entire Beam Park Riverside proposal site has been subject to recent geotechnical Site Investigation boreholes (RSK June 2016: RSK July 2016; RSK December 2017). These studies illustrate Made Ground across the Site, usually c.2m thick but with deeper depths between Beam River and Marsh Way. The surface of the Terrace Gravels are between 6m and 10m below ground level either side of the Beam River reflecting its eroded floodplain. A *c.*5m depth bgl was demonstrated at Archaeological mitigation Area 2, which intercepts the Phase 1 and 2 boundary to the east of the Beam River and c.100m east of the present Site (PCA forthcoming).

4.43 Deposit modelling has been conducted by RSK and has been supplemented by geo-archaeological deposit modelling by Quaternary Science (QUEST). In January 2018 QUEST supplemented their site-wide geo-archaeological sub-surface topographical modelling with a Phase 2 specific fieldwork exercise. This included new SI boreholes and five additional specifically geo-archaeological boreholes extracted for archaeological purposes during the latest SI work by RSK (QUEST 2017, QUEST February 2018). The summary is as follows:

'*Following the recommendations of a desk-based deposit modelling exercise for the wider area of the Beam Park site (Young & Batchelor, 2017), a programme of geoarchaeological field investigations and deposit modelling was instigated in order to: (1) clarify the nature of the sub-surface stratigraphy in more detail, in particular the presence and thickness of alluvium, peat and 'brickearth' across the site, (2) to evaluate the potential of the sedimentary sequences for reconstructing the environmental history of the site and its environs, and (3) to investigate the archaeological potential of the site, in tandem with the archaeological investigations currently*

being carried out at the site by Pre-Construct Archaeology (PCA). In order to address these aims, the stratigraphic data from the existing geotechnical records, and new geoarchaeological, archaeological and geotechnical stratigraphic data, were used to produce a deposit model of the major depositional units across the site.

The results of the geoarchaeological field investigations and deposit modelling indicate that the sediments recorded at the site are similar to those recorded elsewhere in the Lower Thames Valley. The majority of the site lies just to the south of the floodplain edge, with only the far north-eastern and possibly north-western corners of the Phase 2 area underlain by the Taplow Gravel Terrace. Across the remainder of the site the Late Devensian Shepperton Gravel is recorded, overlain by a sequence of Holocene alluvial sediments, including peat, and buried beneath modern Made Ground. The Langley Silt ('brickearth'), relatively more common with the Phase 1 area of the site, appears to be largely absent, except for in the far-northeastern corner of the site overlying the Taplow Gravel. At the site and across the modelled area, the principal relief features of the Shepperton Gravel surface are thus formed by the Lower Thames Valley floodplain, at its confluence with that of the River Beam.

The sediments recorded in the new geoarchaeological boreholes retained from the Phase 2 site have the potential to contain a wealth of further information on the past landscape, through the assessment/analysis of palaeoecological remains (e.g. pollen, plant macrofossils and insects) and radiocarbon dating. Given this potential, and the known presence of nearby prehistoric archaeology that may be contemporaneous with the peat recorded at the site, an environmental archaeological assessment is recommended on two boreholes (BP-QBH6 and BP-QBH8). In addition, an environmental archaeological assessment is recommended of column and bulk samples retained from the excavations associated with the Neolithic structure [worked tree] *identified towards the north of the site, in order to investigate the nature of this feature in more detail*.'

4.44 Following Phase 2 evaluation and mitigation works (see below) QUEST have subsequently completed a Phase 2 Environmental Archaeological Assessment Report (QUEST Dec 2018). This included the following summary:

A programme of environmental archaeological assessment was undertaken on a number of sequences from the Beam Park Phase 2 site, including those obtained during the archaeological mitigation being undertaken in association with a worked yew timber of Late Neolithic/Chalcolithic date (mitigation Area 3). The aim of these investigations was (1) to establish the age of the peat horizons recorded at the site; (2) to assess the palaeoenvironmental and palaeohydrological potential of the sequences; (3) to highlight any indications of nearby human activity, (4) to compare the results with those of the Beam Park Phase 1 environmental archaeological assessment, and (5) to provide recommendations for further analysis.

At the site and across the modelled area, the principal relief features of the Shepperton Gravel surface are formed by the edge of the Lower Thames Valley floodplain, and its confluence with the valley of the River Beam. The surface of the Gravel falls from the northern area of the site, where it is generally recorded at between ca. -2 and -4m OD, to between ca. -6 and -7m OD towards the south. The valley of the River Beam can be made out within the site, the Gravel falling to below -4m OD where it cuts through the Taplow Gravel terrace towards the north. Overlying areas of higher Gravel topography towards the north, the alluvial sequence is thinner, but generally still contains the tripartite sequence of Lower Alluvium, Peat and Upper Alluvium;

only in the far north-eastern and north-western corner of the Phase 2 site is this sequence absent, where the Taplow Gravel is overlain by either Made Ground or (in two records) Langley Silt. Within the alluvial sequence, a peat horizon is recorded across much of the site at elevations between ca. -1 and -4.5m OD, including in mitigation Area 3, and it is within this unit that a partially worked yew Timber [215] was identified. The surface of the peat is relatively even, generally lying at between ca. -1 and -2m OD, and it is generally present in thicknesses of between ca. 2 and 3m across the centre and south of the site, although it thins to as little as 0.05m towards the north. The results of the radiocarbon dating have demonstrated that peat formation began as early as the Late Mesolithic towards the south of the site, with peat accumulation generally continuing until the Middle to Late Bronze Age.

The results of the environmental archaeological assessment are indicative of a floodplain surface dominated by alder carr woodland, with an understorey of grasses, sedges, ferns and various herbs, with sporadic aquatic taxa indicating the occasional presence of pools of standing or slowly moving freshwater. The pollen record indicates that hazel, elm, ash and birch may have occupied the peat surface with alder, but are perhaps more likely to have been growing on the dryland, forming mixed deciduous woodland with oak and lime. Although concentrations are low, yew is a relatively consistent presence in the pollen record, and may have been growing on both the wetland and dryland, perhaps as sporadic occurrences in both environments (see Discussion). Some important spatial and temporal variations can be identified, including (1) a decline in tree taxa towards the top of sequence, and (2) a stronger dryland signal within the sequences closest to the dryland. Although no definitive evidence of human activity is recorded in any of the sequences, it is possible that the decline in woodland cover may be representative of anthropogenic activity. In addition, raised microcharcoal values recorded towards the base of BP-QBH8 indicate burning, though whether this is of anthropogenic or natural origin is uncertain. A marked increase in macrofossils of Brassica/Sinapis sp. (e.g. field mustard) at the top of the sequence in Area 3 Section 60 and BP-QBH6 may be associated with the general reduction in woodland cover and opening up of the landscape in this area, and perhaps human activity…"

b) <u>Heritage Asset Background</u>

4.45 The background is provided by recognised archaeological periods, as follows;

Prehistoric

▪ Palaeolithic	500,000 to 10,000 BC
▪ Late Glacial/Mesolithic	10,000 to 4,000 BC
▪ Neolithic/Early Bronze Age	4,000 to 1,600 BC
▪ Middle to Late Bronze Age	1,600 to 800 BC
▪ Iron Age/Roman Transition	800 to AD 43

Historic

▪ Roman	AD 43 to 410
▪ Saxon	AD 410 to 1066
▪ Medieval	AD 1066 to mid-C16th

- Post-Medieval circa AD 1550 to present

4.46 A Search of the Greater London Historic Environment Record (GLHER) was undertaken for a 1km radius of the Site ('Study Area' - Fig 2). These entries are allocated an 'RPS no' for ease of reference within the period summaries below and within the gazetteer provided as Appendix 1.

4.47 In terms of designated heritage assets, no World Heritage Sites, Registered Parks, Scheduled Monuments, Historic Battlefield sites or Historic Wreck sites lie within the Study Area.

4.48 The LBH APZ that includes the Site (RPS 3 on Fig. 2) is intended to cover Pleistocene gravels sealed by peat and alluvium. Another LBH APZ relating to archaeological potential of the higher gravel terrace, is located just to the north-east of the Site (RPS 2).

4.49 The map regression demonstrates that the Site remained marshland with some use as agricultural land in the mid 20th century. The area to the west of the Beam and the Site was occupied by the Ford Assembly Plant by *c*.1963, with the Site itself mainly used for associated car storage and an access route.

Palaeolithic

4.50 As noted in the Greater Thames Estuary Research Framework (https://historicengland.org.uk/images-books/publications/greater-thames-estuary-res-framework-2010/) '*following the collapse of the ice-dammed lake at the front of the Anglian ice sheet, the River Thames was forced south to start shaping the current Thames Valley...Over the next approximately 420,000 years, the familiar Thames Terrace sequence was created through successive phases of downcutting and gravel deposition*.'

4.51 To the east of the Study Area, in the Purfleet area of Essex, rescue excavations at Greenlands re-evaluated an important Middle Pleistocene site argued to contain mixed Clactonian Acheulian and Levalloisian flint-work assemblages (Greater Thames Estuary Historic Environment Research Framework 2010, 12). Palaeolithic flint-working floors are also found at higher elevations to the west of the Lower Lea Valley.

4.52 The present Thames floodplain, within which the Site is situated, represents the latest phase in gravel terrace deposition sequence. This braided Pleistocene River Thames was a shallower and more dynamic, faster flowing river. Most former land-surfaces within the floodplain have therefore been significantly re-worked since deposition, such that the potential for encountering in-situ 'sites' (e.g. kill sites or camp sites) within the gravels is low (Francis Wenban-Smith pers comm.).

4.53 It is the higher, older, terraces where the potential is highest, including the well known sites at Ebbesfleet and Swanscombe where occasionally in-situ or semi in-situ remains of hominin activities are encountered. The Barnfield Pit sequence (including the famous Swanscombe hominin skull) dates to c. 400,000–380,000 BP (Greater Thames Estuary Research Framework 2010).

4.54 The present Thames Valley floodplain gravels have potential to contain re-deposited flint artefacts such as handaxes and flintworking debitage and, in very rare instances, faunal remains, but the significance of re-deposited finds is generally low in the absence of context.

4.55 There are no Palaeolithic finds recorded on the GLHER within the Study Area. Undated animal bones (antler) were recovered from 18th century dam construction works associated with the Beam River within the Site (i.e. in the lower area of the river itself which is unaffected by the present Site proposals) (RPS 5 on Fig. 2). These undated finds are referred to as dating to anywhere between the Palaeolithic and the 19th century but their association with peat actually suggests a late Mesolithic (see below) or later derivation.

4.56 No Palaeolithic finds have been recovered to date by the Phase 1 and Phase 2 evaluations or by the Phases 1 and 2 mitigation areas. The potential for such remains at the Phase 2 Site is low.

Mesolithic

4.57 During the Mesolithic '*evidence for...activity appears most frequently in the Lea Valley, Essex/London, for example in the Olympic Park where Mesolithic flints have been recovered (MOLAS 2005). There are few new sites and this would also appear to be the case in the south-east region, which includes Kent, and the East of England, including Essex. This has been an issue which has been discussed at seminars for the development of regional research frameworks for the East of England (including Essex) and the South-East (including Kent)*.' (Greater Thames Estuary Research Framework 2010, 13)

4.58 Finds of Mesolithic date have been recovered from adjacent to the River Thames to the south-east. For example the A2016 road construction at Erith on the south side of the Thames proved the potential for Mesolithic and Early Neolithic activities within sand mantling Pleistocene gravels and sealed beneath peat and alluvium. Flint scatters here and elsewhere adjacent to the formerly wider, shallower and braided river, were possibly associated with fishing (probably especially at times of salmon and eel migrations), with other activities such as flint working taking place at the associated temporary camp sites.

4.59 As noted above the construction of dams during the early 18th century commensurate with the Beam green corridor at the Site revealed 'moorlogs' consisting of preserved yew timber, brushwood, hazel nut and stag antlers (RPS 5; HER Ref: MLO47522, TQ5020 8304). Moorlogs is defined as 'a woody layer or mass of peat or other decomposed vegetable matter found below the surface of a marsh, fen, etc.' These antlers were considered to possibly be prehistoric (including possibly Mesolithic) although due to the length of time since the find, it is acknowledged that they could be of any date ranging from prehistory to the Post Medieval period.

4.60 A Mesolithic flint blade has been recovered from Walden Avenue *c*.250m north-east of the Site (RPS 6: MLO3374). The closest findspot to the Site itself, c.100m to the north-east of the Site, is a pit at 15-17 New Road loosely dated as Mesolithic to Iron Age (RPS 7; MLO3374). A flint blade of late Mesolithic or Neolithic date was found nearby (RPS 39; MLO76888). The association of such activities within the area may be associated with the connection of two watercourses above the Thames Floodplain, as reflected by the associated 'Tier I' APA for the 'Beam Wantz Confluence' (RPS 74). Two closely dated early Mesolithic flintwork scatters (blades, flakes and cores) were recorded in 2005-6 by Oxford Archaeology investigations for the 'Beam Washlands' flood-defence works at 15-17 New Road, within that APA (just north of the Study Area; MLO99492).

4.61 Fieldwork at the Hornchurch Marshes south-east of the Site beyond the Study Area was carried out following the discovery of fine-grained mineral sediments, peat deposits and substantial parts of well-preserved ancient woodland (Batchelor 2009; 184-210; GLHER refs. ELO1363 & 1365).

The earliest sediments recorded were fine-grained mineral rich deposits, apparently deposited in a freshwater fluvial environment. Peat accumulation occurred between *c*.6890-6560 years BP through to *c*.4160-3710 years BP, a period which was characterised by mixed fen woodland and followed by a return to fine-grained mineral rich sedimentation.

4.62 No Mesolithic sites have been identified by the archaeological work for Beam Park Phases 1 and 2, and the potential within the ground impact areas of the Site appears to be low.

Neolithic

4.63 As noted above Thames-side peat deposits that began to accumulate in the late Mesolithic period, continued to be deposited throughout the Neolithic and throughout the Bronze Age.

4.64 Despite the advent of Neolithic farming, the Site area was almost certainly still characterised by natural low-lying wetlands of the Thames Valley floor and by the north-south flowing Beam River valley corridor. As in the Mesolithic the Site probably continued to be characterised by exploitation of natural resources (fishing and fowling).

4.65 Some evidence for early Neolithic (and Bronze Age) exploitation of the local wetlands is provided by a leaf arrowhead, and later flintwork just to the north of the Study Area within the Beam Wantz Confluence APA (MLO99493).

4.66 Also beyond the Study Area at Erith an Early Neolithic Carinated Bowl, probably associated with a campfire, was found at the base of peat deposits during the A2016 Bronze Age Way construction (Bennell 1998), whilst an early Neolithic inhumation grave was similarly found below peat at Yabsley Street, Blackwell (Powell 2012, 22). However, locating such dispersed Neolithic archaeology beneath and within Holocene peat and alluvium deposits is not straightforward. This is illustrated by the Olympic Park project, where Neolithic archaeology requiring mitigation was found within only Trench 18 of the 121 evaluation trenches. Investigation of this location, shown to be at the confluence of former river channels (via deposit modelling), identified worked Neolithic timbers associated with flint-working and tools, including a fine flint axe (Powell 2012).

4.67 A small number of worked flints from the Phase 1 and 2 archaeological investigations are of Neolithic date but no concentrations of artefacts have been identified. With this in mind it is theoretically possible that further artefacts might be present at within the Phase 2 red line (especially adjacent to the Beam River). However, is residual potential for significant remains of the Neolithic period within those areas of the Site subject to piling can be regarded as low.

Bronze Age

4.68 The Early Bronze Age is equated with the construction of funerary monuments, usually round barrows monuments, whilst settlements remain ephemeral. This situation may reflect a still fluid and potentially seasonal settlement pattern predicated on pastoralism. The Middle Bronze Age witnessed the development of large-scale field-systems associated with dispersed roundhouses of settlements practising mixed farming. The period thus characterises the emergence of more settled farming systems, which typically exploited the lighter gravels and Brickearth geologies of the Thames Valley above the floodplain.

4.69 As noted above peat is likely to have continued to form within the Site until the late Bronze Age. The marshlands continued to be used for salt marsh grazing and resource exploitation and were accessed in places by timber trackways.

4.70 Large-scale projects and summaries within the Greater London Thames wetlands, such as the Lower Lea Valley Olympic Park project, the Mapping Past Landscapes in the Lower Lea Valley project, generally produce good palaeo-environmental results with occasional archaeological discoveries (Powell 2012; Corcoran et al 2011). The Olympic Park project revealed typically sporadic examples of Bronze Age fields/settlement on higher gravel locations, including an example of a prehistoric site at the junction of the Waterworks River and the Channelsea River.

4.71 Where large-scale projects that have entirely removed substantial quantities of peat and alluvial for engineering purposes, archaeological remains actually within the peat/alluvium itself proved sporadic. For example a 300m length stretch of the A2016 Erith Spine Road construction (for 'Bronze Age Way', on the analogous south side of the River Thames, provided only sporadic indication of Bronze Age activity, in the form of part of an insubstantial wattle hurdle re-used as a trackway, whilst the alluvium was archaeologically sterile (Bennell 1998)). Similar Middle Bronze Age trackways are known from the foreshore in Newham and Havering, whilst 'working platforms' and a possible revetment are recorded from Barking (RPS 70 - Ripple Road APA text).

4.72 Within the Study Area peat of Bronze Age has also been identified at Kent Avenue, c.400m to the south-west of the Site (RPS 10; MLO61514). Just north of the Study Area a borehole sample of peat from the embankment of the current Wantz Stream channel (part of the Beam Wantz Confluence APA), has been radiocarbon dated to the Late Neolithic or Early Bronze Age period (MLO99493, TQ50113 83559).

4.73 An excavation at 105-109 New Road, Rainham in 2009, *c*.600m east of the Site (just beyond the Study Area), identified four Early Bronze Age pits/ post-holes containing pottery (ELO11194). The gravel geology was 3.2m to 3.5m OD confirming the location was sufficiently above the floodplain for such activity to take place. This location is within the Havering APZ for 'Gravel and Sand Deposits' (Geology) (RPS 2).

4.74 Current evidence indicates that there was activity within the Study Area during the earlier prehistoric periods, and that activity of various levels took place across the wider area, both within marsh areas (as found beneath the Site) and the dry land locations (to the north and north-east).

4.75 The famous 'Dagenham Idol', an anthropomorphic wooden figurine radiocarbon dated to the Late Neolithic to early Bronze Age period (2459-2110 BC), was discovered in 1922 during installation of sewer pipes on the edge of the marshes near to Gores Brook, *c*.1.5km west of the Site (MLO5743, TQ4877 8331). This figure was allegedly carved from pine which, given a paucity of pine forest in the period in southern England, may suggest a Scandinavian origin. However, Damian Goodburn has suggested that the figure was more likely to have been made from Yew given the similar reddish colour of the wood (see Goodburn in Appendix 3 of PCA Dec. 2018). The skeleton of a deer was discovered nearby, possibly within the same peat layer. Such figurine finds are not unique in Britain (a total of seven being known to Britain and Ireland) but are more common in mainland Europe, where the pattern of deposition in liminal zones, such as the edge of bogs or estuaries occurs (APA DLO37897).

4.76 A single trench was excavated west of the Beam River during the initial evaluation for the current Beam Park Riverside project (PCA May 2017) (Fig. 18). Trench 14, *c*.100m to the west of the Site, uncovered a large piece of north-south aligned horizontal Oak timber, sealed below made ground and alluvium, and about 0.4m into the peat level at -0.90m OD. Subsequently during the remainder of the Phase 2 trenching in late 2017, Trench 21 was positioned 7m to the south of the

oak log identified in Trench 14 to assess whether it might have been part of a trackway (PCA January 2018). Trench 21 also identified a clay 'bank' feature and several stake or post-holes.

4.77 The PCA Phase 2 specific evaluation report abstract was as follows:

'Ten trenches were excavated across the site. Natural deposits were noted in nine of the ten trenches excavated. The presence of terrace gravels was noted in two of the ten trenches, which were principally located down the eastern portion of the site. The gravel dropped to the south-west and was not reached in the southernmost trenches, deeper into the Thames floodplain. This was partly due to heavy truncation by modern concrete and partly due to the sudden fall in the terrace gravel towards the Thames, making the gravel too deep to investigate.

A complex sequence of alluvial and peat deposits was encountered in nine of the trenches excavated. Geo-archaeological trial holes were excavated in the trenches by Quest to investigate these floodplain deposits and to sample and understand the formation of the peat at the edge of the floodplain.

Prehistoric worked timbers were found in Trench 21, which probably dated to the later Neolithic or Chalcolithic period, based on the radiocarbon dates. It is possible that these elements could have formed a simple wooden trackway. Peat deposits sealed and underlay these timbers.

Further alluvial deposits formed upper layers in all levels of the trenches excavated and were formed from the Roman period onwards. The alluvial deposits were sealed by modern made ground.

Modern truncation to some degree or another was encountered in all the trenches and this was seen to be most severe down the western side of the site; where reinforced concrete, underground tanks and ground beams from the warehouses of the 20th century Ford Assembly Plant were uncovered.'

4.78 The remaining Phase 2 trenches encountered the expected sequences of natural deposits beneath made ground (based on sub-surface topographical modelling) although the modelling to date has been enhanced by test pits dug for the trenches. A number of the central and southern trenches west of the Beam were heavily disturbed by the foundations and services of the former Assembly Plant.

4.79 Proposals and procedures for a potentially staged mitigation excavation of the 'possible trackway' are provided in the mitigation section of the updated Archaeological Strategy and SARMS (RPS January 2018) and the associated WSI (PCA January 2018).

4.80 Mitigation Area 3 (as required by GLAAS) uncovered a series of fallen prehistoric trees within the peat but no evidence of a trackway (the possible trackway being a fallen tree). One fallen yew tree had been worked using a metal chisel to produce a series of notches along the trunk. The PCA mitigation assessment report (PCA Dec 2018) included the following text highlighting its archaeological interest:

"*The partially worked fallen Yew [215] is…a very rare example of the early stages in the making of a large hollow wooden vessel in the Chalcolithic/ Early Bronze Age (EBA), possibly a small dugout boat, or a large trough, coffin, or even a drum… The dating to the early part of the Early Bronze Age, when metal woodworking tools were still rather new at around 2,300 BC or a little earlier is also of regional significance*."

4.81 The yew tree has been removed from the Site and a section of it is to be conserved at York University prior to being put on display at the local Valance House museum.

4.82 Other Chalcolithic and Bronze Age finds from the Beam Park investigations have been sparse, comprising worked flint in low quantities from mitigation Area 1 and a single flint-tempered pottery sherd from mitigation Area 2 (plus a single human fibula and a deer tibia from the peat). The absence of Bronze Age cut features within the Phase 1 and 2 areas close to New Road may be attributable to high degrees of modern truncation to the higher gravel terrace here during the emplacement of Made Ground in the 20th century. The residual potential for archaeology of Bronze Age date within the Site (i.e. following mitigation) is therefore considered to be low.

Iron Age

4.83 Peat accumulation in the Bronze Age preceded changes in climate and hydrology resulting in a period overbank flooding in the Iron Age to Roman period, which capped the peat with a thick deposit of alluvial clay (as illustrated by the work in the nearby at Hornchurch marshes; See Thames Estuary Research Agenda 2010, 14-15).

4.84 Iron Age settlements are relatively frequent in the area, representing rising population and perhaps an intensification of farming, along with the emergence of large tribal entities. Within the Study Area a Late Iron Age/Early Roman settlement site was identified during excavations at the Beam Washlands site (RPS 14; MLO78368; ELO11250). This comprised an agricultural area to the south, an industrial area to the north and a cremation cemetery.

4.85 In view of the above there was agricultural (arable) and possibly industrial salt production within the wider Study Area during the Late Bronze Age, Iron Age and Roman period. However, settlement related activity and arable land would have been concentrated to the north, beyond the marsh land limit. The marsh itself may have been used for grazing. It is also possible that former marshy areas, former palaeo-channels and in particular the brook corridor itself (excluded from the construction at the Site), may contain isolated water management features such as revetments or bridge supports, or other water related finds (such as small boats).

4.86 As no Iron Age sites, features or finds were identified during the Phases 1 & 2 evaluation trenching or from Mitigation Areas 1 to 3. It is therefore considered that the archaeological potential for this period within the development areas of the Phase 2 Site is low.

Romano-British

4.87 A Romano-British farmstead site was located *c*.250m to the north-east of the Site at Walden Avenue (RPS 16; MLO24006). Romano-British activity also includes the aforementioned Beam Washlands site where a settlement site, along with cremations and an industrial area has been excavated (RPS 14; MLO78368; ELO11250).

4.88 The PCA excavation in 2008 at Lower Road/Walden Avenue (Mardyke Estate), c.500m north-east of the Site, found evidence for ditches and pits of 1st-2nd century AD date, with two complete vessels in a pit suggestive of an element of ritual activity (RPS 44 & 45; ELO10306 11028 & 100511). Investigations in 2014 of the Mardyke Estate Site E/F have since identified intensive evidence of early and late Roman settlement including enclosure ditches, plot ditches, pits, post-holes and three ‘keyhole kilns’ for the production of pottery (H. Hawkins pers.com.).

4.89 Mitigation Area 1 within Phase 1 of the current Beam Park Riverside project, c.400m to the east of the Phase 2 Site, was designed to incorporate features containing prehistoric flintwork in the preceding evaluation Trench 1. These finds were found to be residual within Roman features. The excavation was also designed to inform the context of such 'dry land' ditches cut into the Brickearth capped terrace, and the nature of use of the marsh to the south side. The findings suggest an 'upper alluvium' clay was deposited in the Roman period. This was based on Roman pottery finds (as well as residual prehistoric flintwork) from the alluvium itself, and from similar alluvium deposited within a series of pits in the northern area of the site. The pits were probably quarries for extraction of brickearth clay, used for the manufacture of pottery and/ or tile, an interpretation strengthened by the Mardyke excavations to the north which included Roman pottery kilns. The pits had silted slightly ahead of finally being filled by flood deposits and it is possible that they were cut in drier periods and then left open to fill naturally – finally being infilled by flood deposits in wetter period of the year. Other finds from the pits included animal bone from domestic farmed species, again likely to be associated with the Mardyke (farmstead and kiln) site.

4.90 Also of interest was the finding of a deeper probable pit within the central area of the site which was both filled and sealed by flood deposits. The lower fills also included a peaty fill and a large collection of domestic animal bone, although pottery was absent. A proposed radiocarbon date from the animal bone and an extracted QUEST monolith sample, will further inform the date and purpose of the feature. However, it is most likely to represent a waterhole used livestock on the marsh in the drier summer months, when water table was relatively low. The animal bone from the waterhole mirrors those from the Roman extraction pits and together provide a useful supplement to the economic data of the Mardyke settlement, where animal bone had not generally survived.

4.91 However, these findings were located on the preserved terrace, which does not extend into the present Phase 2 Site. No Roman sites or finds were recovered during the Phase 2 evaluation or within Mitigation Areas 2 and 3 within/adjacent to the Phase 2 Site. Therefore, it is considered that there is low potential for Roman archaeological remains within the Phase 2 Site itself. It is probable that this area was used as salt marsh grazing in the period.

Anglo-Saxon and Medieval

4.92 Historically part of the county of Essex, Rainham (now within Havering) was a village by AD 811 when referred to, in a charter granting it to Wulfrid of Canterbury, as 'Roegingaham'. The 1086 Domesday Book records the settlement as Raineham, which can be translated as 'homestead or village of a man called Regna' (the Old English 'hām' meaning settlement). However, there is no former Saxon or medieval village cores within the close proximity of the Site.

4.93 The Grade I Listed Church of St Helen and St Giles at Rainham (HE Ref: 201549) dates from *c*.1170.

4.94 Dagenham Breach, located south-west of the Site was previously known as the 'Gulph' and had been formed in the 14th century by breaching the River Beam's bank to form a lake.

4.95 The settlement of Dagenham, to the east of Barking and Ilford, was one of the earliest recorded Anglo-Saxon settlements in Essex, first mentioned in a Charter of AD 687 (Powell 1966) whilst at the time of the 1086 Domesday Survey, the manor of Dagenham fell within the larger holding of Barking. Dagenham was recorded as Deccanhaam in *c*.690 which in Old English means 'Homestead or village of a man called Daecca' (Mills 2011).

4.96 The nearby Manor of Cockermouth is first attested in AD1250 and was located by the HER *c*.1.25km north-west of the Site (HER Ref: MLO26064, TQ4892 8353). It consisted of a rectangular piece of land *c*.600 acres in extent of which nearly two thirds was marsh (Shawcross 1908). The manor was just 200 acres at the Dissolution and was demolished in 1700.

4.97 Documentary sources suggest edge of marsh houses and that flooding in the 14th and 15th centuries breached the flood defences and inundated the area south of the Site, which and was allowed to become permanent (HER Ref: MLO20717, TQ4837 8231) (Powell 1966). The records for Barking Abbey include reference to late medieval flooding causing significant lost revenue and resulting in attempts to drain and reclaim the marshland (Barking Level and Dagenham Marsh APA text).

4.98 Archaeological evidence for early Saxon occupation is slight but a gully and pit were excavated at the Beam Washlands excavation site at Oval Road North, just to the north of the Study Area suggesting some local settlement (MLO99519). There are no medieval sites or finds recorded within the Study Area for this DBA.

4.99 Although there is a lack of archaeological evidence for the Saxon and Medieval periods from the evaluation of Phase 2, it seems likely that the Site would have lain in marsh land used for pasture. Archaeological potential for the Site for these periods is reasonably considered to be negligible.

Post-Medieval and Modern

4.100 Historic maps then trace development of the area from agriculture and marshes to industrial uses associated with a Thames side deep water port that culminated in the construction of the Ford Motor plant opened in 1931. Until the late 1990s the Site was used for industry associated with the motor trade and the Ford Dagenham Stamping and Tooling Plant still occupies the area to the immediate west. Map evidence, combined with historical sources and archaeological findings, provides the following information regarding the Site.

4.101 Chapman and Andre's Map of 1777 (Fig. 4) shows the Site crossed by the stream within an area of marshland called 'Dagenham Marsh'. Settlements are shown at 'Mear Ditch' and 'Marshfoot Farm' on drier ground adjacent to the marsh within the northern edge and to east of the eastern end of the Site respectively. A hamlet of 'Cockermouth' is similarly depicted adjacent to a marsh-side lane to the north-west of the Site. The village of Dagenham is located c.1.25km north of the Site. The stream is depicted running through the Site with Horn Church labelled in the marsh to the south and Dagenham Bridge labelled on its road crossing to the north. There is a body of water south of the Site called 'the Gulph', which appears to be the early name for the Dagenham Breach (CgMs 2016).

4.102 The 1799 Ordnance Survey Drawing (Fig. 5) illustrates the Beam River, labels Mardyke (north of the later position of Little Mardyke) and the 'Gulph' which appears as a substantial inlet. The line of the later 'New Road' is partially in place, flanking the northern edge of the west end of the Site. A north-south road is shown through the Site connecting with 'New Road' at its northern end. The landscape is entirely rural comprising fields.

4.103 The 1841 Dagenham Tithe Map is combined with 1848 Hornchurch & Romford Tithe Map on Figure 6. New Road to Rainham now runs along the entire northern extent of the Site. The maps show plot numbers associated with field/plot names provided in the associated apportionment.

The Dagenham Tithe Map indicates the drained marshland derivation of some fields – those within or close to the Site comprise:1693 - Lower 7 Acre Meadow (grass); 1694 – Little Mall Field (arable); 1702 – Home and Mun Field (arable); 1704 – Marsh Green Farm; 1706 – Cornhouse field and stoney down (arable); 1707 – Chase Lane; 1708 – Great Wall Field (arable); 1724 – Garden; 1725 – Mill Marsh (arable) (indicative of a mill nearby – probably the windmill depicted north of New Road in 1864); 1730 – cottage and garden; 1731 – anglers retreat beer house, yard and garden; 1733 - cottage and garden; 1734 - cottage and garden; 1735 - cottage and garden; 1736 – house and garden; 1737 – part of rail marsh (arable); 1738 – in Kingsland Common (arable); 1740 - in Kingsland Common (arable); 1764 – turnpike six acres (arable); 1768 - marsh green and pond (grass); 1769 - Horse Marsh (grass); 1770 - Long Three Acres (arable); 1771 - Part of Five Acre Marsh (grass) and 1772 - Part of Five Acre Marsh (grass).

4.104 The residential plots referred to relate to a series of houses and gardens fronting New Road to the west of Beam River and east of the connecting north-south road. A north-south stream in the western area of the Site flows to the Gulph (later Dagenham Reach) to the south.

4.105 The area to the east of the Beam River is accounted for by the 1848 Hornchurch and Romford tithe map, which shows New Road continuing as a straight route 'from London' with a series of fields commensurate with the Site and its surrounds listed in the apportionment as 126 – Marsh; 127 - seven acre marsh; 129 – marsh; 130 - gulf marsh; 131, nine acres (meadow); 132 -two acres (meadow); 133 - thirteen acres (meadow); 134 - Brick Yard and 135 – Bridge Marsh. The only residence east of the river appears to be a single plot at New Road between fields 135 and 134.

4.106 The Ordnance Survey Map of 1864 (Fig. 7) shows the residences referred to above as a triangular plot 932 containing several properties and gardens, fronting New Road, east of the now named north-south route 'Sickle Corner Manor Way'. To the north-east and on the north side of New Road (beyond the Ste) is an extension of the settlement, comprising at least 7 houses and the 'Beam River Wind Mill'. The remainder of the west area of the Site is open farmland. Significantly, the Tilbury & Southend Railway, constructed in 1854 (Brown 2009), now flanks the south edge of the Site. To the east of the Beam River are a series of fields and two separate homesteads fronting New Road (the western of which is now labelled 'Little Mardyke' (Mardyke being located to the north on earlier maps). A small stream connecting the Beam is shown running east west between the fields. Two further drainage ditches carrying flowing water run south from this stream either side of field plot 1006.

4.107 The problems associated with flooding had been occasionally acute since medieval times, as reflected by the continued use of marshlands as undeveloped seasonal rough grazing for livestock until the late 19th century (Barking Level and Dagenham Marsh APA text).

4.108 The 1897 (Fig. 8) shows few changes to the Site with Barking Level and Dagenham Marsh remaining largely undeveloped until the mid 19th century. A residence or farm known as 'Marshgreen' is shown on the north side of New Road to the north-west of the Site. 'Sickle Corner', bisected by the railway is an area of farmland labelled to the west side of 'Sickle Corner Manor Way'. The terrace of houses to the east side of Sickle Corner Manor Way fronting New Road had been extended to c.33 properties. Beam Bridge, across the river on New Road, is depicted, as is the property known as Little Mardyke. A further building is shown a field to the east. The remainder of the Site is fields, with a now straightened tributary stream of the Beam River flowing east-west through the eastern area of Site.

4.109 Industrialisation around this time, facilitated by the Barking and Rainham Railway, began with chemical and powder works along Barking Reach and at Creekmouth. Dagenham Dock Industrial Estate, which became one of the largest coal wharves for export on the Thames, was established to the south of the Site on the edge of Dagenham Breach in the late 19th century.

4.110 The Third Edition Ordnance Survey Map of 1919-20 (Fig. 9) shows few changes to the Site. The railway has been expanded with the construction of Dagenham Dock station in 1908 (Brown 2009) and various goods and coal sidings. These were connected to the works to the south west of the station. Sickle Corner and Sickle Corner Manor Way are labelled. A linear area of 'allotments' are labelled along the south-side of New Road within the northern fringe of the north-western area of the Site.

4.111 The area was extensively built on following reclamation of the marshes during the late 1920s and 1930s and industrial development continued along the Thames east and south of Dagenham. The Ford factory opened in December 1928 following large scale reclamation of the marshes (that accounts for much of the modern Made Ground under the Site). Ford became the largest local employer.

4.112 The Revised Edition Ordnance Survey Map of 1939 (Fig. 10) shows significant changes at the Site, including the conversion of the 'Sickle Corner' area in the south-west to a 'Sports Ground', with buildings to the west side including a 'Pavilion'. 'Allotment Gardens' are marked in the north-western Site area but may now relate to a much wider zone of allotment use than previously. Sickle Corner Manor Road runs north-south through the Site to the east of the Sports Ground. Terraced houses still flank New Road along the northern edge of the Site west of the junction with Sickle Corner Road.

4.113 'Beam Bridge' is labelled and the areas either side of the river are cleared of the former fields to form large open undivided areas. 'Little Mardyke' is still shown, whilst a line of pylons and their power lines cross these open areas east to west. Beyond the Site further residential expansion has occurred north of New Road. The Ford works have been constructed south of the railway and various railway connections have been constructed to connect these works to the railway. The Briggs Motor Bodies and Kelsey-Hayes Wheel Company manufactories factory to the south were constructed to the immediate west of the Site in 1932, after the land was bought for the Ford Motor Company.

4.114 A high explosive bomb is shown to have fallen in the vicinity of Kent Avenue during the Blitz of 1940-41 (Bombsight Website 2016) although there doesn't appear to have been serious damage caused to the Ford factory to the west of Kent Avenue (NB the website covers the former extent of Greater London and does not include evidence for the Site east of the Beam River, then within Essex).

4.115 The 1945 Google Earth Image shows a new complex of buildings including an E-shaped form to the north of the sports complex and pavilion. Cricket pitches were laid out within the sports field.

4.116 The combined Ordnance Survey Map of 1950 (Barking & Dagenham) and 1961 (Havering) (Fig 11) show a Manufactory (Car Bodies) factory and Manufactory (Car Wheels) factory to the west of the Site. The Beam River is shown with Beam Bridge at New Road, and a band of marsh depicted to the west of the river. To the east of the river Little Mardyke is now shown with additional outbuildings, whilst a new 'Works' building is shown to its east side at the extreme east end of the Site. The remainder remains open apart from the pylons. To the south of the Site and

the railway the 'Havering and Dagenham Level and Hornchurch Marshes remained open land around the Dagenham Breach, with the largest Ford 'Manufactory (Motor Cars)' factory fronting the Thames to the south.

4.117 Major changes are shown to the buildings west of the Site on the 1963 Ordnance Survey Map (not provided), which have now been amalgamated into one building. This presumably took place after Briggs and Kelsey-Hayes were purchased and absorbed by Ford in the early 1950s (Burgess-Wise 2001). The sports pavilion and facilities had been cleared from the western area of the Site and may at this time have been replaced by concrete hard-standing.

4.118 The Ordnance Survey Map of 1975-1976 (Fig. 12) shows the central and western areas now dominated by a large new Ford 'Motor Works' structure built over the former sports ground and allotments c.1963. Thames Avenue is now built as a north-south route along the west side of the river. An access route ('Sierra Drive') is also constructed between New Road (then the A13, now the A1306) and the factory. The Ford Works had continued to expand to the west of the Site. The eastern area (either side of the Beam River) comprised several (probably) fenced areas of hard-standing with a smaller 'Works' building fronting New Road at the eastern end of the Site. Little Mardyke was still extant at the west edge west of the Works. To the south of the western area of the Site were multiple railway sidings, with a large Works with attendant Cooling Ponds south of the eastern area.

4.119 A Site Plan of c.1971 for the Ford Motor Company Dagenham Estate (Fig. 16) provides an inventory of the function of the various structures, with the main structure labelled as 'Assembly Plant'. To the east of the factory the hardstanding to the west of the river is labelled as 'Car Despatch', whilst the area east of the Beam is labelled 'Traffic Compound'. The plan shows the 'Body Plant' to the west of the Site and Thames Foundry and New Forge to the south of the eastern area of the Site. Ford's 1960's publication 'Welcome to Dagenham' confirms that the former 'Paint, trim & Assembly Building' was built in 1959, and provides details of the associated processes to 'ensure supremacy in the automobile industry' such that 'bodies move through the paint, trim and assembly lines on a continuous transportation system that requires few manually operated transfers, thus greatly reducing the danger of damage during handling...'

4.120 The 1999 Google Earth Image shows no change to the majority of Site, although the north-south road (Marsh Way) crossing the east end of the Site, west of the now demolished location of the former Works building and over the demolished location of Little Mardyke, is now in place. There are further factory extension structures around the western and north sides of the large Ford Motor Factory west of the Beam, whilst two small factory-related structures are now shown east of the green corridor of the river. The hardstanding area (on raised Made Ground east of the river) is shown in use as parking area for constructed cars ahead of export.

4.121 The Ford Motor Works ceased car production in 2002 (having produced over 11 million cars), although part of the building to the west was retained as the Dagenham Diesel Centre (Weinreb et al 2008). The demolition of the large factory west of the Beam is illustrated by the 2006 Google Earth image (Fig. 14). The small structures east of the Beam remained extant but the remainder of the Site is comprises hard-standing.

4.122 The 2015 Google Earth Image (Fig. 15) reflects this general picture, although salt grit bunds are shown in the eastern site area.

4.123 The surviving factory works to the west of the Site have undergone extensive changes since original construction in 1932, with major expansion particularly in the 1950s. The power station building was extended to the east by 1953 to accommodate the power demands from the enlarged works and improvements in technology and machinery. The power station building has been considered to have a low heritage potential (CgMs 2016).

4.124 In terms of the GLHER the majority of post-medieval sites and finds (RPS 19-39 on Fig. 2 and listed in Appendix 1) are of 16th to 19th/20th century date and are located beyond the Site. These include an infectious disease hospital (RPS 19), human burials (RPS 20), Dagenham Old Road Manor House (RPS 21), lakes (RPS 22 & 32), a dam (RPS 23), a farmhouse (RPS 24), landfill sites (RPS 26-29), boat remains and sluice and flood related features (RPS 26, 31 & 33), poughsoils (RPS 30 & 38) and stray finds. Old Dagenham Park (RPS 35) includes modern structures within the earlier Manor of East Hall. RPS 36, also to the north, relates to Dagenham Park itself created in 1928 within Leys Farm.

4.125 Of these the dam (RPS 23) was located within the north-eastern area of the Site, just east of Thames Avenue (Fig. 2). Small scale archaeological recording there (RPS 58) also identified peat of probable earlier date (e.g. prehistoric) and undated animal bone (RPS 5).

4.126 The Site was located in a mixture of marsh land used for pasture and agricultural land until the construction of the Ford Factory Works. These works and the associated land raise obliterated former structures and buried former landscape. The theoretical archaeological potential for the Site for surviving the post medieval period archaeology below made ground, such as former drainage features, is considered to be low-moderate. Such remains could include the foundations of terraced housing of 19th century date fronting New Road. Such pre-20th century remains would be of negligible or low significance. The archaeological potential for the Modern period structural remains and services associated with the factory is high with evidence relating to the Works likely to be represented. The archaeological traces of the factory do not hold archaeological significance. The historical significance of former Ford Works at the Site is instead vested in the archival records and memories of those that worked there.

4.127 The Historic Landscape Classification for the area provided by the GLHER and reproduced as Figure 3, identifies the Site area and its surrounds as 'Industry' reflecting the remaining hard-standings associated with the former Ford Motor Works. As noted above these concrete hardstandings were used for car storage prior to rail enabled export. The archaeological potential for the Modern period structural remains and services associated with the factory is high, with below ground services, foundations and facilities relating to the Works identified by the Phase 2 evaluation (PCA 2017a). The archaeological traces of the factory do not hold archaeological significance. The historical significance of former Ford Works at the Site is instead vested in the archival records and memories of those that worked there.

4.128 The following extract from the PCA assessment report (PCA December 2018) details the history of the Ford plant including the Assembly Plant at Phase 2:

"The Development of the Ford Works at Dagenham, 1923-1931

The history of the Ford Motor Company's business in Britain can be traced back to 1904, when Aubrey Blakiston imported a dozen Model A Fords, which he intended to sell to the public via the newly established Central Motor Car Company. Blakiston resigned from the company in 1906, when he was succeeded by Percival Perry as managing director. Perry (1878-1956) liquidated

the firm the following year, when he set up Perry, Thornton & Schreiber Ltd to sell the newly introduced Ford Model N, which the company supplied to customers with British-made coachwork. The firm was the first to introduce the famous Model T to the global market at the 1909 London Olympia motor exhibition. Perry parted company with Thornton and Schreiber the same year, when he was invited by Henry Ford to head the Ford Motor Company's first branch in England.

In 1911 the Ford Motor Company (England) Ltd was established to manufacture Ford cars specifically for the British market, the first Ford company to be set up outside North America. Perry found a disused tramcar factory at the Trafford Park trading estate near Manchester which the company converted into an assembly works for its cars. A local coachbuilder was acquired by the company in 1912 to build vehicle bodies for the British market. By 1914 the Trafford Park factory had been fitted with one of Ford's innovative moving assembly conveyors and was producing chassis at a rate of 21 per hour. During the First World War the factory was used to manufacture modified Model T cars for use by the armed forces, in addition to the production of shell casings. A subsidiary factory was established by the firm at Cork in southern Ireland, intended originally for the manufacture of Fordson agricultural tractors.

Following the end of the First World War, the company began to search for an alternative production site to Trafford Park, which was too small to permit future expansion. Although Perry found and purchased a site at Southampton, which offered the deep-water access demanded by Henry Ford, the scheme did not receive the wholehearted backing of the American company and it was subsequently sold off in the 1920s. Perry resigned from the company's service in 1919, entering into a partnership with Noel Mobbs of the Pytchley Autocar Company to acquire a disused military transport depot at Slough, which they developed as the phenomenally profitable Slough Trading Estate. Knighted for his services during the First World War, Perry retired to the Channel Islands three years later.

During the early 1920s Ford's share of the English market began to decline, as the company suffered from the effects of protectionist legislation such as the 1920 Motor Car Act and the import duties imposed upon components manufactured at the company's Cork factory following the creation of the Irish Free State in 1922. The company's search for a new manufacturing site in mainland Britain intensified, culminating in the discovery in 1923 by Edward Grace (manager of the Cork works) of an area of undeveloped land close to Dagenham Dock station. Although the site was notoriously marshy, comprising areas of rough grazing interspersed with rubbish tips piled high with London's waste, the company purchased 295 acres of land from Samuel Williams & Sons for £150,000 in May 1924. Owing to financial uncertainties brought about by continuing falls in Ford sales in Britain, development of the site was delayed until later that decade.

In 1927 Ford finally ceased production of the Model T after 19 years of continuous production. The launch of the new Model A was accompanied by an in-depth review of the company's European operations conducted by Henry Ford himself. Ford conceived an ambitious plan whereby the British operation would become "a Detroit in miniature, a virtually self-sufficient manufacturing colossus supplying and controlling a chain of 11 European assembly plants". In order to implement what became known as Ford's '1928 plan', Sir Percival Perry was coaxed out of retirement. Perry recruited A.R. (Rowland) Smith from Standard Cars to take charge of Ford Britain's new manufacturing operation. The new Ford Motor Company Ltd was successfully floated in December 1928.

Work on the new Dagenham factory began the following May, when a groundbreaking ceremony was held on the site, attended by Henry Ford's son Edsel and Sir Percival Perry. Sir Charles Heathcote & Sons (architects of Samuel Williams' Dagenham Dock factories) were appointed architects to the scheme, whilst Sir Cyril Kirkpatrick was taken on as consulting engineer. An area of 66 acres was earmarked for the Ford factory itself, construction of which was preceded by a programme of site levelling and stabilisation, which necessitated sinking 22,000 concrete piles in the marshy ground to a depth of up to 80ft. The factory itself was built over a period of two years on concrete rafts laid on top of the piles. Amongst the buildings erected by Ford at Dagenham were a riverside power station, which from 1936 was illuminated at night by a Ford sign visible from 20 miles away, a foundry, coke ovens, gas plants and a blast furnace, together with the largest private wharf on the Thames. By the time that production commenced at Dagenham in the autumn of 1931, the company had spent some £5 million on the works and faced an uncertain future in an economy mired in the depths of the Depression.

The Briggs Motor Bodies and Kelsey-Hayes Wheel Factories at Chequers Lane, 1930-1954

Having previously made a fortune from the development of the Slough Trading Estate, Sir Percival Perry appreciated the potential profits that might be made from establishing a similar enterprise at Dagenham. The company therefore set about purchasing additional parcels of land adjoining the works, acquiring a total holding of approximately 600 acres by 1932. The first part of the estate to be developed lay on the east side of Chequers Lane, in an extensive plot bordered by the New Road to the north and the London to Tilbury railway line to the south. New roads named Kent Avenue and Norwich Road were laid out across the site in anticipation of the arrival of business tenants. In the event, the only companies to set up factories on the Chequers Lane estate were closely connected with Ford itself, most notably the British subsidiaries of existing North American Ford suppliers the Briggs Manufacturing Company and the Kelsey Hayes Wheel Corporation, both of Detroit. By the late 1930s these companies had been joined by W.J. Reynolds (Motors) Ltd, a main dealer of Ford cars and Fordson commercial vehicles (TNA HO 192/1486).

Briggs Motor Bodies Co. Ltd

The Briggs Manufacturing Company was formed out of an existing coach building company by Walter Owen Briggs of Detroit in 1909. From the outset the company manufactured interiors for the Model T, following which it concentrated the manufacture of closed coach bodies for Ford. The company was successfully floated in 1924, whilst the following year it manufactured half a million automobile bodies and turned a profit of $11 million, giving shareholders an astonishing 200% dividend. The United Kingdom subsidiary appears to have been established as two separate concerns, a private company called Briggs Motor Bodies and the Briggs Trust Limited, the latter of which held the company's assets (TNA BT 31/37769/303263). In a lease dated 6th June 1932 between the Ford Motor Company and Briggs Motor Bodies for 99 years from 24th June 1931 the former demised the Chequers Lane site (containing an area of approximately 80,433 square yards) to the latter for a rent of £2849 per annum.

On 24th July 1935 the nominal capital of Briggs Motor Bodies was increased from £1,000 to £1 million through the issue of 999,000 ordinary shares of £1 each, and the business was reconstituted as a public company. The company was established with the object of carrying on "the business of designers, builders and manufacturers of motor bodies for use in connection with motor vehicles of any description". The company purchased the undertaking, business and

assets of Briggs Trust Ltd in consideration of 599,993 ordinary shares. Whilst the Earl of Granard was appointed Chairman of the new company, the Board was dominated by directors of the American parent company, including Walter Owen Briggs himself, Robert Pierce and William Dean Robinson.

The Briggs Motor Bodies plant manufactured all of the coachwork for Ford's Dagenham works, together with that for the company's eleven European satellites in the early 1930s. The earliest bodies built by the plant comprised ash frames to which steel panels were attached. The pressings were comparatively small, welded together in jig tools that located the body panels by pneumatic pressure. Whilst the method of construction was said to have resulted in stronger bodies than those assembled from larger panels, it meant that the plant was unable to stamp out metal roof panels during the 1930s. Aside from windows and seat trim, which were fitted in the Ford plant, Briggs supplied ready trimmed and painted bodies to the neighbouring works.

Post-Second World War

Within weeks of the end of fighting in Europe, the Ford plant at Dagenham was gearing up to build cars to meet the anticipated demands of peacetime. Post-war austerity, punitive tax rates on the motor industry, petrol rationing and fuel shortages combined to suppress demand for private cars in the United Kingdom, forcing Ford and other companies to concentrate on export sales. Notwithstanding the gloomy economic outlook, Ford Britain took over the Kelsey Hayes Wheel Company in 1947.

Following the expansion of its manufacturing activities during the Second World War, Briggs Motor Bodies reduced the extent of its operations during the post-war period. By 1948 the workforce had fallen to less than 6,000. In order to maintain the company's finances, Briggs continued to build bodies and components for rival motor manufacturers, including Austin, Rootes, Standard, Leyland and Chrysler. The death of Walter Owen Briggs in 1953 and the threat that Ford's American rival Chrysler would purchase his company provided an opportunity for Ford-Britain's Managing Director, Sir Patrick Hennessy to gain possession of the firm's British holdings. The Detroit parent company approved Sir Patrick's plan, and the British company was sold to Ford-Britain for the very reasonable sum of £3.2 million the same year.

The Briggs Motor Bodies Works under Ford ownership 1954-2002

The acquisition of Briggs Motor Bodies Ltd by Ford-Britain led to a number of significant changes at the Chequers Lane plant. In 1954 Sir Patrick Hennessy launched an ambitious expansion and modernisation programme at Ford, which was intended to enable Dagenham to build as many as 2,000 vehicles per day. A critical element of the scheme was the remodelling and re-equipping of the Briggs plant (known as the stamping plant). In 1954, the layout, design and construction of a new Paint, Trim and final Assembly (PTA) building on the former 48 acre Ford sports ground on the opposite (east) side of Kent Avenue. The latter is shown on the Ordnance Survey map of 1950.

The new building was a two- storey construction that included a facilities block, receiving bay and final assembly section, including body upholstery and fitting known as body trim. The first floor contained the phosphating plant and rinse, new paint shop, the wet sand decks and the drying ovens. The first floor was also linked by means of a large conveyor to the 'Body in white' plant to the west of Kent Avenue. The new PTA occupied an area of 250,000 square feet and was to be totally automated. When finished, the PTA building contained nine miles of conveyor track

controlled by 1,200 miles of electric cabling. The north side of the plant comprised the facilities block: for admin staff, canteens, kitchens and medical centre. Ancillary buildings, which housed plant or services, were situated along the north and south sides of the main building, including amongst others the Fire Station, Oil store and pump house, storm water pump house and sewage pump house. The latter was required due to the low level of the site and the need to elevate surface water and sewage by pumping to avoid flooding. To lessen the risk of surface water, the ground levels over the site were raised by c. four feet. The site of the PTA and a number of ancillary buildings are shown on a mid 1950s plan of the site while a later Estate Site Map published around 1970-1 shows the PTA and the Traffic Compound; the latter on land to the east of Thames Avenue.

In November 1960, Ford America announced that it intended to buy up the 45.4% shareholding in Ford-Britain that remained in private hands in order to further integrate its operations and increase marketing effectiveness in both countries. The parent company paid nearly £120 million for the outstanding 17,726,804 shares the following January. The move resulted in a diminution of Dagenham's role at the centre of the company's British operations, accompanied by a process of decentralisation that increased as the decade progressed. The styling, engineering and prototype divisions all migrated from Dagenham to Aveley (Essex) in 1960, while a new manufacturing plant capable of building 1,000 vehicles per day opened at Halewood on Merseyside in October 1963. The headquarters of Ford's operation in Britain, and subsequently Europe, relocated to a purpose-built office complex at Warley in Essex.

As other factories and divisions of Ford elsewhere in Britain and Western Europe took up an increasing share of production during the 1970s, so the importance of Dagenham to the company declined. While engine production continued to be a mainstay of the plant's output, the number of car lines built at the plant fell to one (the Fiesta) in the 1990s. Owing to falling sales and over-capacity in Europe, the company announced in early 2000 that it would axe 1,500 jobs at Dagenham. The same year the company announced that the PTA plant would close in 2002, with the loss of a further 1,900 jobs. As vehicle assembly ceased to be an element of the company's operations at Dagenham, the company invested instead in the construction of a new diesel engine plant, which continues to operate to the present. The PTA plant was demolished in 2004."

c) <u>Site Walkover</u>

4.129 A site walkover survey was conducted on 22nd November 2016 with subsequent visits during the Phase 2 evaluation in October/November 2017 (prior to Phase 1 surcharging) (see 'Plates'). The Site is adjacent to Thames Avenue (Plate 45). A small flat-roofed gas plant shed of mid to late 20th century date is located to the east side of Thames Avenue at New Road along with a foundation for a former building (Plate 46).

4.130 There are two bridged crossing points for the river within the Site, along with the Beam Bridge for New Road at the northern edge (Plate 47). They are both of 20th century date. The northern bridge within the Site is a green painted iron-framed footbridge with wooden platform of 20th century date, whilst the concrete vehicle bridge to the south is of later 20th century date (Plates 48 & 49).

4.131 The river banks within the Site are set some 2m below the surrounding Site areas, which are artificially raised with the imposition of Made Ground. The Site is accessed by vehicles via a further modern concrete bridge located to the south (Plate 8 – B4 on Fig. 18). Plate 51 shows the

green willow lined corridor for the river looking south with Thames Avenue to the west and Plate 52 shows a corresponding view to the east side of the river.

4.132 Plate 53 shows the bridge for Thames Avenue at the southern end of Phase 2 looking west. Plate 54 shows the raised Thames Avenue looking north from and Plate 55 shows the gas pipework compound foundations also to the east side of the Beam River. Plate 56 shows the eastern area of Phase 2 prior to Phase 1 surcharging (level raise).

4.133 Plates 57 to 66 are representative of the Phase 2 Site with LBBD to the west of the Beam River. These show the predominantly open former car storage areas along with a bridge structure, the internal 'Sierra Drive' and small workshop structures (in the northern area – see Appendix for further details of their interpretation and recording).

d) <u>Truncation and compaction</u>

4.134 Map regression indicates that the eastern area of the Site has been capped with hard-standings for cars with few structures, whilst the western area, beyond the green Beam River corridor, has been largely built over by the former Ford Assembly Plant factory and a small number of ancillary structures. These structures were constructed on raised ground and therefore the majority of foundations (other than piles) will not have truncated any archaeological features/deposits cut into the alluvium beneath, or sealed within deposits within the peat and alluvium. However, localised deeper impacts may have occurred via deep drainage and services, whilst compaction from the made ground, surfacing, buildings and from surcharging of deposits in c.2006 may have slightly compressed any archaeology present. A high degree of truncation both from foundations and underground concrete tanks and facilities was indicated by several of the western Phase 2 trenches.

4.135 Compaction from the made ground, surfacing, may have already slightly compressed any archaeology present beyond the identified area.

5 ASSESSMENT OF SIGNIFICANCE

5.1 The following approaches to assessing significance, impact and effect in relation to archaeology have been utilised.

a) <u>Significance</u>

5.2 Significance is described in NPPF as:

> **"The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting."**

5.3 There are no national government guidelines for evaluating the significance of all types of heritage asset. For archaeological remains, DCMS has adopted a series of recommended (i.e. non-statutory) criteria for use in the determination of national importance when scheduling ancient monuments. These are expressed in DCMS (2013).

5.4 The criteria include period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity and potential, and can be used as a basis for the assessment of the importance of historic remains and archaeological sites. However, the document also states that these criteria 'should not be regarded as definitive; but as indicators which contribute to a wider judgment based on the individual circumstances of a case.'

5.5 These criteria can be used as a basis for the assessment of the importance of archaeological remains/heritage assets of national importance. However, the categories of regional and district / local importance are less clearly established than that of national importance, and implicitly relate to local, district and regional priorities which themselves will be varied within and between regions.

5.6 Clearly a degree of professional judgement is necessary, guided by acknowledged standards, designations and priorities. It is also important to understand that buried archaeological remains may not be well-understood at the time of assessment and can therefore be of uncertain importance.

5.7 The following table assists in assessing the significance of archaeological assets.

Table 1: Significance

Significance	Type of Asset
Very High	World Heritage Sites Assets of acknowledged international importance Assets that can contribute significantly to acknowledged international research objectives
High	Scheduled Monuments, Grade I and II* Listed Buildings and most Grade II Listed Buildings Undesignated assets of schedulable quality and importance Assets that can contribute significantly to acknowledged national research objectives

Medium	Designated (including some Grade II Listed Buildings) or undesignated assets that contribute to regional research objectives
Low	Undesignated assets of local importance Assets compromised by poor preservation and/or poor survival of contextual associations Assets of limited importance, but with potential to contribute to local research objectives
Negligible	Assets with very little or no surviving archaeological interest
Unknown	The importance of the asset cannot be ascertained

5.8 The guidance (HE 2015, 3) includes that: "the contribution of a setting to the significance of a heritage asset is often expressed by reference to views, a purely visual impression of an asset or place..." and "Views which contribute more to understanding the significance of the heritage asset include:

- those where relationships between the asset and other historical assets or places or natural features are particularly relevant;
- those with historical associations, including viewing points...
- those where the composition of the view was a fundamental aspect of the design or function of the heritage asset
- those between heritage assets and natural or topographical features..."

5.9 There is a clear emphasis on the contribution to significance of those settings which most closely resemble that when the asset was constructed or in operation.

5.10 Although setting is itself not a heritage asset 'its importance lies in what it contributes to the significance of the heritage asset'. As set out in Section 2 the guidance set out in the Historic Environment Good Practice Advice Planning Advice Note 3 (Historic England 2015 updated 2017) provides a series of recommended steps for the assessment effects from development upon the setting of historic assets. In this case (in addition to the possible archaeological assets) the above baseline has identified a series of undesignated Ford Works related buildings of low and medium significance within the Study Area in addition to more distant Listed Buildings of medium to high importance (i.e. Grade II* and Grade II Listed Buildings) that are not affected. The recommended steps relevant to the baseline are:

Step 1: identify which heritage assets and their settings are affected:

Step 2: assess whether, how and to what degree these settings make a contribution to the significance of the heritage asset(s).

5.11 The remaining steps are considered where relevant.

b) <u>Assessment of Significance – Designated Assets</u>

5.12 There are no Listed Buildings or Conservation Areas within 1km of the Site (Fig. 2) and the construction of the Phase 2 Site would have no physical effect on designated built heritage assets. An assessment of likely visual effects (i.e. in terms of setting) on designated assets (of high/national importance) further afield within the wider 'designated assets study area' (Fig 2B) is

provided in Section 6 below based on the ES and the Phase 1 and Phase 2B ES Addendum's provided for the now consented Hybrid application (PBA 2017, 2018 and 2019).

5.13 The Scheduled Monuments of Lesnes Abbey, c. 4.7km to the south-west (SM 1002025); Barking Abbey, c.5km to the west (SM 1003581); Purfleet Magazine c. 5.1km to the south-east (SM 1005561), and the medieval moated house at Aveley c.5.3km to the south-east (SM100562); are of High (national) importance due to their survival/condition, historical significance, communal value (Purfleet Magazine) and archaeological (evidential) potential.

5.14 The Listed Buildings set out within the following table have been considered with regard to significance and any potential effect on their setting. The contribution of the site to its setting has been reviewed to take into account the heights of the buildings proposed on Site and a Zone of Theoretical Visibility (ZTV) provided in the Addendum to the ES for the Hybrid Application.

Table 2: Key Identified Designated Listed Buildings and Conservation Area Historic Assets within the 2 km Study Area

RPS No.	Historic Asset	Importance/Significance	Contribution of the Site to its setting Reviewed and Amended where necessary from ES June 2017
151	Church of St Helen and St Giles Rainham (Grade I)	**High** due to remarkably complete Norman architecture and medieval scratch drawing of a ship on roof-loft staircase. The building's significance is principally historical, aesthetic and communal. Its aesthetic importance is enhanced by its attractive and largely inward-looking churchyard setting. The early church and its important position as a landmark also provide a focus for the Conservation Area with its churchyard a well-used semi-public open space, very important as a setting for the buildings.	NA. The key relationships are between the church and its churchyard with their Bridge Road/Broadway roadside setting. The church tower, though relatively squat, was designed to be impressive when viewed from all directions within the surrounding landscape, including distantly from the west. However, the view towards the Site is now obscured by its trees to the immediate west flanking the road, by buildings to the west side of Broadway/Bridge Road, vegetation to the NW side of the CA and by 20th century urban landscape.
156	Church of St Peter and St Paul, Barking and Dagenham (HE ID 198241)	**High**, due to partial medieval survival with tower a good 1800 example of Strawberry Hill Gothic architecture by William Mason – also has aesthetic and communal	NA – Not associated with the site. Not currently inter-visible due to intervening built environment but ZTV suggests possibly some very slight inter-visibility from

RPS No.	Historic Asset	Importance/Significance	Contribution of the Site to its setting Reviewed and Amended where necessary from ES June 2017
	(Grade II*)	importance	churchyard of tallest new buildings
152-155	Rainham Hall, Havering (RPS 155); Forecourt railings, gates and piers, walls and vases (RPS 152); The Lodge (RPS 153); and Stable Block at Rainham Hall (RPS 154) (all Grade II*)	**High.** The 1729 built 3-storey Rainham Hall has historical/commercial associated with the merchant John Harle, with its significance, and those of the associated structures enhanced by their architectural quality and by their group value. The complex is at the centre of the village and helps define its character	Not inter-visible with the site from ground level due to trees to the immediate west flanking the road, by buildings to the west side of Broadway/Bridge Road, vegetation to the NW side of the CA and by 20th century urban landscape. The Site makes no contribution its setting which is defined by its gardens courtyards, and the inter-relationship between the Listed Buildings that make up the complex. The wider setting is Rainham village, commensurate with the Conservation Area.
157, 159, 160-63	Remainder of Grade II Buildings in Rainham CA – K6 Kiosk (RPS 162) Redbury (RPS 164), The Vicarage (RPS 159), War Memorial (RPS 157), 2-8 Upminster Road (RPS 163) and locally listed buildings	**High** – These buildings are of medium to high importance in their own right and make a contribution to the character of the CA (architecturally and as part of the economic history of the village through its association with trading from successive Rainham wharves – medieval, Georgian and early 20th century).	NA. The site is not visible from ground level and does not contribute to the significance of the buildings or their settings, which comprise the adjacent streetscape, green-spaces (e.g. around the memorial) and the gardens associated with the residences. Their setting includes their inter-visibility with the other Listed Buildings including locally listed buildings (Nos. 9-27 Upminster Road South, 12 Broadway, The Bell PH, The Angel PH, and Broadway Cars) within the Conservation Area.
RPS 173 & 177	Bretons (Grade II*) and associated wrought iron screen with gates	**High –** historic manorial complex with 18th century residence evidential, aesthetic and communal (social club use) value	NA. The site makes no contribution to the setting of the CA and is not inter-visible at ground level. The immediate setting is defined by its walled

RPS No.	Historic Asset	Importance/Significance	Contribution of the Site to its setting Reviewed and Amended where necessary from ES June 2017
	(Grade II)		gardens although the playing fields around contribute to its extended setting as were former areas of farmland around the manorial farm.
216	Rainham Conservation Area	**High** - Core of medieval settlement zone retaining a distinctive identity through its clear physical separation from surrounding built development. It is topographically identified by a spit of high land separating Rainham Creek, the Ingrebourne river and Rainham Marshes - which were the reason for the original settlement. The early church is a landmark and a focus for the CA, with its churchyard having communal value a semi-public open space. The high quality (grade I, II* and II) Listed Buildings at the CA's core are both architecturally important, and contribute to the economic history of the village through, especially its focus to the river and with trading from successive Rainham wharves (from medieval period onwards).	NA. The site makes no contribution to the setting of the CA. Although it is partially surrounded by modern development and industry (including suburban Hornchurch to the north-west), severing it from its formerly surrounding farmland, the CA itself retains an enclosed village appearance around the Norman church, Rainham Hall and the local shops. The setting of the CA is largely defined/contrasted by detracting elements of surrounding modern developments.
215	Dagenham Village Conservation Area, Barking & Dagenham	**High**	NA. The site, which is not inter-visible, makes no contribution to its setting.
217	Crossness CA	**High**	NA. The site, is not inter-visible at ground level due to the 3m high

RPS No.	Historic Asset	Importance/Significance	Contribution of the Site to its setting Reviewed and Amended where necessary from ES June 2017
			flood barrier and intermediate buildings such as Dagenham Engine Plant, the site makes no contribution to its setting.
167	Sub-Station of Essex Water Company (Grade II)	**High** – Good example of a late 19th century Italianate Pumping Station	Minor. The pumping station is functionally associated with the Beam River Corridor but views south to the Site are obscured by Dagenham Beam Bridge of the A1112 and by South Hornchurch and Dagenham's residential spread.
161	Stoneford Cottage and railings to front wall, Barking & Dagenham (Grade II)	**High** – example of an early 19th century stucco 2-storey villa.	NA. The site, which is not inter-visible, makes no contribution to its urban roadside setting.
162	The Vicarage, Barking & Dagenham (Grade II)	**High** – 1665, 2-stoey rendered house with late additions. Architectural and historical interest	NA. The site, which is not inter-visible, makes no contribution to its now urban roadside setting.
158	Cross Keys Inn Public House Barking & Dagenham (Grade II)	**High** - Example of a 15th century timber –framed hall house of architectural, historic and archaeological (evidential) value	NA. The site, which is not inter-visible, makes no contribution to its now urban roadside setting.
160	621 Rainham Road South, Barking & Dagenham (Grade II)	**High** - mid 19th century police station. Of architectural, historical and communal value.	NA. The site, which is not inter-visible, makes no contribution to its now urban roadside setting.
168	Jetty Number 4 and Approach, Formerly at	**High** – 150m long jetty parallel the Thames in front of Dagenham Dock. Good example of a coaling	NA - The site makes no contribution to the setting of the jetty whose setting was and is the

RPS No.	Historic Asset	Importance/Significance	Contribution of the Site to its setting Reviewed and Amended where necessary from ES June 2017
	Samuel Williams and Company, Dagenham Dock, Barking and Dagenham. (Grade II)	jetty (1899-1903) with historical association with Samuel Williams & Sons Ltd. Built to designs by L. G. Mouchel & Partners, British agents for Hennebique's patent reinforced-concrete constructional system. Extended 1906-7 incorporating his patent system for the horizontal casting of reinforced-concrete piles (an early example of a reinforced concrete structure), developed in response to problems encountered with vertically cast Hennebique piles during its construction.	adjacent Dagenham Dock riverside. The jetty was not contemporary with the use of the site as an Assembly Plant in the mid/late 20th century. Has no inter-visibility with the site with views between obscured by the dock depot, industrial landscape (including The Ford 'Chassis, Transmission and Engine Plant and later Works buildings), and the A13 and CTRL railway route corridors.
150	Lesnes Abbey SM	**High** – "Despite later us and alterations, Lesnes Abbey survives well with much surviving medieval masonry and stonework. It is a remarkably complete ground plan of an Augustinian Abbey. The site will contain further archaeological and environmental remains and deposits relating to the history of the abbey. As a site accessible to the public it provides a valuable recreational and educational resource." (Listing description)	The immediate setting of the SM is constrained to the associated parkland of the abbey and Lesnes Abbey Woods, whilst its extended setting was the adjacent ground formerly owned by the abbey which are now largely built over (a detracting factor from the ability of the extended setting to contribute to the monuments' significance). Long distance views are dominated by modern buildings. The Site, a s a distant brownfield zone on the opposite side of the Thames is not readable as part of the wider medieval landscape that was once distantly visible from the abbey. There does not appear be a direct historical association with the Site which makes no contribution to the abbey's significance. The abbey is not currently visible from the Site.

c) <u>Assessment of Significance – Undesignated Archaeology</u>

5.15 Existing national policy guidance for archaeology (the NPPF as referenced in section 2) enshrines the concept of the 'significance' of heritage assets. Significance as defined in the NPPF centres on the value of an archaeological or historic asset for its 'heritage interest' to this or future generations.

5.16 No archaeological designated heritage assets as defined in the NPPF are recorded on or in close proximity to the Phase 2 Site.

Non-designated Built Heritage

5.17 Several former Ford related structures, including bridges are located within or adjacent to the Site (Fig. 17; Appendix 2). These structures are of negligible heritage significance but the bridges and structures west of the Beam would be retained in any case. The foundations of former structures to the east and west of the Beam corridor are of negligible interest and have also already been recorded by PCA on the request of GLAAS (PCA report as Appendix 2). These can be removed during the enabling works.

Non-designated Archaeology and Geo-archaeology including a summary of mitigation assessment reports for Phase 2.

5.18 The eastern area of the Site lies within a Havering APZ with potential associated with alluvium (DLO33196) whilst the area to the immediate north-east of the Site equates to the higher (edge of terrace) Sand and Gravel Geology, associated with a separate APZ (DLO33198). An equivalent LBBD Barking & Ripple Road APA (DLO37897) (RPS 70) is considered analogous to the Havering APZ (DLO33196) incorporates the western area of the Site. Its statement of significance states:

'*Ripple Road APA is an area with considerable archaeological potential. Any further remains which could be uncovered through archaeological investigations of the Ripple Road and the area immediately adjacent would add to our knowledge of the use and development of the road. Remains which could be uncovered could include prehistoric features such as trackways, ditches and remains of settlement. There is also a potential for Roman remains, particularly burials, which are often located along or near to roadways on the outside of settlements. Remains of medieval houses and farmsteads could also be present. The wider area also has archaeological potential and significance, particularly for the prehistoric period. The Dagenham Idol is one of the earliest examples of an anthropomorphic wooden figure in the British Isles and the only example in the Greater London area. Consequently, as a late Neolithic or early Bronze Age wooden effigy with potential votive or ritual implications it is of significant archaeological value. Any future archaeological works in the area have the potential to further our understanding of the landscape in which the Idol would have been situated and its relationship with it.*

Remains such as further trackways or ditches, providing evidence of human use of the landscape during the prehistoric could also be encountered. This would enable us to fulfil part of the research framework criteria for the prehistoric period, as it would increase our understanding of the relationship between trackways in the floodplain and the settlements to which they were linked. There is also the potential for the recovery of palaeoenvironmental archaeological remains in and around palaeochannels and in peat deposits. This could increase our understanding of the nature of this part of the Thames Valley, and its influence on human interaction with and settlement within the landscape, particularly in the prehistoric period.'

5.19 The Barking Level and Dagenham Marsh APA (DLO37927; RPS 73; Tier III) to the immediate south of the west area of the Site (and also analogous to the Havering alluvium APZ), includes the following statement of significance:

'The APA covers an area which was once an extensive estuarine/marshland landscape, the remains of which can be expected to be found beneath modern made ground (itself of no archaeological interest), with many instances of peat being recorded. The Barking Eyot area has both archaeological and palaeoenvironmental potential, as due to its topographical nature the area may have been used during the Neolithic and Bronze Age. Both the eyot and the surrounding channels may have archaeological remains pertaining to these periods, which would increase our understanding of the development of the area. Evidence of deeply buried remains such as eyots and peat can be collected through borehole data which can indicate archaeological potential. Important prehistoric features have been found within the Tier 2 APA that borders this area. Any well preserved prehistoric features found within this area would be of archaeological interest and significance. Potential discoveries could include boats, fish-traps and trackways, as well as artefacts and environmental evidence. There may also be evidence of land reclamation and inundation dating from the medieval period onwards which could be of interest and use in managing the future changes to the Thames Estuary.'

5.20 The 2017 DBA conducted prior to any evaluation at Beam Park Riverside was based on previously known evidence associated with the APAs/APZs. This suggested a theoretical moderate archaeological potential for the early Prehistoric periods (particularly Mesolithic to Bronze Age) and a theoretical low potential for the later Prehistoric (Iron Age) period through to the medieval period. A theoretical moderate potential was identified for evidence of agricultural activity dating to the post-medieval period (sealed by Made Ground). It was suggested that '*whilst it is likely that archaeological remains of currently unknown potential may be present within the Site, the balance of probability is that these will be mainly of low (local) or perhaps medium (regional) significance*.'

5.21 Prior to the Beam Park investigations there the only 'finds' of note within the Phase 2 Site comprised 'moorlogs' and stag antler recovered by dam works in the 18th century adjacent at the river. These may be purely natural in derivation and were found within the river zone which is unaffected by development impacts.

5.22 The Phase 2 evaluations and Mitigation Areas 2 and 3 provide data for archaeological remains in Phase 2. Although isolated artefacts and a small area of former land surface were found in Area 2, significant archaeology, in the form of a chisel-based notching of a fallen yew tree, was only found in only one location at Trench14/21 and subsequent Mitigation Area 3 (PCA December 2018).

5.23 The following section of the PCA assessment discusses the findings from Mitigation Areas 1 (within Phase 1) Area 2 (which lay partially within Phases 1 and 2) and Area 3 within Phase 2 west of the Beam, with regard to importance and the now ongoing analysis;

"Importance of the Results

Overall the results of the excavation are important at a regional level as they demonstrate some use of the area during the prehistoric period, with the presence of peat preserving evidence of Chalcolithic/Early Bronze Age wood working and a potential Late Bronze Age or Roman feature associated with accessing water. There is also potential to establish if a prehistoric land surface is

present in the Early to Mid-Holocene Lower Alluvium below the peat in Excavation Area 2 where one abraded sherd of potentially Neolithic/early Bronze Age pottery was retrieved.

The majority of the stratigraphy recorded at Beam Park relates to a sequence of Lower Alluvium, peat and Upper Alluvium largely formed in a sequence from the Mesolithic through to late prehistoric period ?Roman/Medieval in Excavation Areas 2 and 3, although Roman alluviation was also noted in Area 1. On the northern parameters of the site and in Excavation Area 1 some peripheral early Roman quarrying and water provision activity is taking place on the edge of the marsh and on the higher ground, possibly contemporaneously and associated of similar age to Roman activity found to the north of the site at the Former Mardyke Estate (MYE05; Hawkins 2108b and at the Beam Washlands reservoir site (BMV05; Biddulph et al. 2007. Biddulph et al. 2010).

The artefactual evidence for prehistoric settlement activity is very minimal at this site; residual flintwork in Area 1, an abraded sherd of potentially Neolithic/Bronze Age pottery, one disarticulated human bone in Excavation Area 2 and a few flint tools of potential Neolithic-Bronze Age date in the basal alluvial sands and Mesolithic/early Neolithic struck flint blade in the prehistoric peats of Excavation Area 3. A possible stake –hole [206] in the later prehistoric (upper alluvial) surface in Excavation Area 3 may represent the Later Bronze Age/Roman period. More significant finds representing prehistoric activity in this vicinity were the carved/worked Chalcolithic/early Bronze Age Yew Tree [215] <33> in Excavation Area 3 and maybe the presence of a mid to Late Bronze Age/?Roman waterhole [84] in Excavation Area 1.

With the exception of the naturally felled trees in Excavation Area 3 and the waterhole in the north-eastern part of the site (Excavation Area 1) these finds are very slight indicators of potential Neolithic to Late Bronze Age activity, associated with Lower Alluvial and peat deposits in Excavation Areas 2 and 3. However, one sherd of pottery and three pieces of flint are not indicative of intensive occupation and a more likely conclusion is that occupational settlement was further to the north and not on this floodplain. These artefacts are more likely to have been washed into the Lower Alluvium and peat than to represent in-situ activity.

The partially worked fallen Yew [215] is rather more significant as a very rare example of the early stages in the making of a large hollow wooden vessel in the Chalcolithic/ Early Bronze Age (EBA), possibly a small dugout boat, or a large trough, coffin, or even a drum. If it was worked as some form of 'trial or training project' for a junior Early Bronze Age woodworker then its significance is enhanced and can be said to be of regional importance. The dating to the early part of the Early Bronze Age, when metal woodworking tools were still rather new at around 2,300 BC or a little earlier is also of regional significance...

Damian Goodburn [Appendix 3 of the PCA Dec 2018] *discusses the woodland environment on the peat deposits found in the Greater Thames Estuary, particularly in the area surrounding Dagenham, such as at Wennington (to the east of Beam Park) which include many species commonly associated with current only moderately damp or even dry woodlands in England today i.e. not really wet alder carr evidence. Typically the species range includes much oak and yew reflecting a type of flood plain woodland now extinct in England where naturally growing yew is associated with steep downland 'hanger woods' growing with species such as hornbeam, hazel, beech, ash and oak. This extinct and very distinctive valley bottom woodland type has also been found in some other areas of later prehistoric coastal and estuarine woodlands in Belgium, Germany and the Netherlands (Deforce and Bastiaens 2004).*

The naturally accumulated drowned woodland deposit in Excavation Area 3 is therefore locally important as another example of the form of flood plain woodland that occupied the site around 2,300 BC, but as there are many other sites yielding similar information in the area its significance must be seen as local… The full scale excavation work carried out in Area 3 provided a slightly different picture to the summary pollen analysis as it showed that large oak and yew were more dominant and growing on the peat during a dryer phase….

The cultural significance of the hollowed/worked Yew Tree [215] dated as 2470 BC – 2297 calBC (SUERC-79156 (GU47859)…) is regional... The size of the log was just big enough for use as a small dugout boat which would also have required the closure of the rot void at the root end with a cross wise plank 'transom', as are known in many British dugout boat finds from the Bronze Age to medieval period. However, the choice of Yew for making a very large hollow wooden vessel is unique as other examples in Britain are commonly of Oak. Yew is sometimes clearly used for high status or ritual items but was clearly also common in the flood plain woodland at the time.

The environmental assessment comments that Yew is of great cultural significance and has been utilised from the Palaeolithic through to the modern day. The prehistoric importance of yew is demonstrated by its use in: (i) creating weapons and tools such as spears, swords, bows, knives and musical pipes (e.g. Clark, 1963; Coles et al. 1978; Gowen, 2004, Sheridan, 2005), and (ii) constructing trackways, platforms and boats (Coles and Hibbert, 1968; Coles et al., 1978; Wright et al., 1965, 2001). Previously, only at Golfers Driving Range, Beckton has the direct use of Yew been recorded on the Lower Thames Valley floodplain; there it was incorporated into the sub-structure of an early platform structure (dated 1630-2000 calBC/3580-3950 calBP). The worked Yew tree [215] from the current Beam Park site is therefore particularly important, providing evidence for its use in a different way during the Chalocolithic/ Early Bronze Age late Neolithic (2300-2470 calBC/4250-4420 calBP) (Appendix 12; Young et al. 2018d, 71).

Of particular interest is the similar date of the worked Yew in Area 3 to the Dagenham Idol (an anthropomorphic wooden figurine as discovered in 1922 during the installation of sewer pipes on the edge of the marshes near to Gores Brook, c.750m west of the western end of the overall site). There is little doubt concerning the ritual context of the Dagenham Idol's use and deposition. However, it may also be possible that the choice of Yew for chisel notching of uncertain function in Area 3 combined with its location in the marsh, also has symbolic or ritual connotations (Yew trees having a particular symbolism in many cultures, including its reference as 'the death tree' as well as the apparent appropriation of its pagan associations in the context of Christian churchyards).

The results of the excavation also demonstrate that the site had some peripheral Roman activity taking place on the edge of the marsh in comparison with concentrations of Late Iron Age and Roman activity taking place at the Former Mardyke Estate (Hawkins 2018b) and Beam Washlands (Biddulph et al. 2010) to the north of Beam Park. In this way, the results can again be seen as important at a local level, as much of this part of the landscape is believed to have witnessed only marginal Roman activity, being too close to the marsh for any concentrations of settlement activity.

The date of the Late Bronze Age /Roman well/waterhole [84] [in Phase 1] *needs further investigation and is pertinent to establishing the type of settlement associated with the higher ground to the north of the site at Beam Park. Wells/waterholes of this type are typical of a Late*

Bronze Age or Roman date but the only dating evidence associated with this feature comes from the animal bone assemblage which has been characterised as typically Roman… The feature is cut into the natural gravel terrace and through peat which had accumulated from the Late Mesolithic period onwards, however the fill contains an animal bone assemblage more typical of a Roman assemblage (Appendix 7), suggesting that this feature could be of a later date than first thought. Examples of well/waterholes have also been identified in the nearby site at the Beam Washlands Reservoir site (Fig. 1; BMV05) where they were dated as Roman (Biddulph et al. 2010, Biddulph et al. 2007) though there is also a mid to Late Bronze Age 'burnt mound' identified at Manser Road to the east of Beam Park (MNM03; Compass 2004, 4).

Further Work

A number of recommendations for further work have been suggested as a result of this assessment

Further C14 dates may clarify the date of the human bone in peat layer [161] Excavation Area 2, Section 100. Similarly, a C14 date from the single large red deer tibia may provide a date for the colluvium/peat layer [166] in Excavation Area 2 (although its residuality cannot be discounted), Section 102. A third C14 date is recommended to clarify the date of the animal bone assemblage found in the backfill of waterhole [84] in Excavation Area 1.

The lithic assemblage is of local significance in that it demonstrates flintworking occurring at the site during the Mesolithic or Early Neolithic and possibly during the later prehistoric period. However, its size and the lack of secure contextual associations means that its interpretational value is limited beyond that indicated in this report, and no further analytical work is recommended. Nevertheless, both the struck flint and unworked burnt flint can contribute to a wider understanding of prehistoric occupation in east London and short descriptions, based on this catalogue and report, should be included in any published account of the excavations.

The following work is recommended for the worked wood depending on the format of the final report. Research evidence for Early Bronze Age edge tools that could have been used to carry out the work on yew timber [215] should be carried out. Socketed or palstave-type chisels are well known for later periods but what was available in the early Early Bronze Age is far less certain. It is also recommended to compile an updated version of this text with more complete referencing of comparative evidence. Five simple draft explanatory figures and further consideration of the distinctive Yew oak woodland and comparative evidence are also proposed.

Further research regarding the possible function of the notches on the worked wood is proposed.

A discussion and comparative research of the environmental landscape will be required as part of further analysis. The Yew tree and various timbers in Excavation Area 3 should be discussed within a broader framework of Yew-Alder dominated woodland within the Lower Thames Valley. This work is recommended as part of QUEST's ongoing involvement with the Beam Park Riverside project (Appendix 12; Young et al. 2018d, 76), but the results should be included in any publication of the archaeological investigations.

Additional micromorphological analysis of column sample <3> within Section 100 of Excavation Area 2 is recommended in order to identify any evidence for soil formation (Young 2018c, 22 and 69). This is proposed within the framework of QUEST's further work but pertinent to the interpretation of the archaeological investigations This would determine if there were any land

surfaces present in Excavation Area 2 and if the one pottery sherd from context [167] in this sequence does in fact represent Neolithic/Bronze age activity.

Also within QUEST's environmental assessment is a recommendation for one further C14 date from the base of the peat in Section 60 (Excavation Area 3) as there was some uncertainty as to the age of the peat at the base of the column sample. An additional sample might clarify the chronological relationship between the peat and the worked Yew tree [215] (Appendix 12; Young et al. 2018d, 26 and 69). The base of the peat was not reached in Area 3 Section 60, but the peat here was radiocarbon dated to between 3595 and 3825 cal BP (Early Bronze Age) despite its close proximity (c. 5m apart) to the worked Yew [215], radiocarbon dated to 2300-2470 cal BC/4250-4420 cal BP.

The small size and the lack of diagnostic sherds in the Roman pottery assemblage limits the discussion beyond dating, however, the presence of possible Mardyke kiln products can provide a link between the two sites and future investigations have the potential to contribute to our knowledge of the distribution of Mardyke and Beam Valley products in the area and to develop the regional context for this site.

It is recommended that the small animal bone collection is worthy of further work, essentially clarifying the information already described and hopefully comparing this data with bone collections from other sites in this general region. There is some uncertainty related to the dating of the major part of this collection (from pit [84]) and efforts should be made to rectify this situation. Whether it is prehistoric and Roman or just Roman, the absence of evidence related to animal husbandry in this local area will certainly justify any further work. Animal bone collections were discovered at the previously mentioned Roman settlement sites at Beam Washlands and Mardyke, however the bone assemblages from these sites were small, in poor condition and highly fragmented (Strid 2010, 140-1 and Deighton 2018). A final point concerns the red deer tibia from Excavation Area 2 which is also placed in the earlier period (Phase 3). This may well represent the sole prehistoric component of the bone assemblage and it may be worthwhile attaining a carbon date for this example as well as from bone(s) from well/waterhole fill (83).

There is limited evidence for the Roman period from this site but further work on the column sample taken through the backfill of waterhole [84] might build up a more precise / accurate picture of the environment of the site during the Roman period?

5.24 Geo-archaeological work for Phase 2 has provided important information on the formation of the both the Thames flood plain and the tributary valley of the Beam River valley, which spans by the Site. The investigations have provided data derived from sequences of alluvium and peat (QUEST February 2018b & December 2018)

5.25 Palaeo-environmental evidence preserved within the river alluvium and marshland peat is therefore present beneath the modern made ground at the Site and may be considered to be of local geo-archaeological significance. Works undertaken in Phase 2 generally have proven sufficient to characterise these deposits and to add to an existing body of local palaeo-environmental evidence (ibid). The analysis of the samples extracted by QUEST is ongoing but is also considered to be a contribution of local to regional value.

5.26 The Phase 2 assessment by QUEST (Dec. 2018) includes the following discussion and conclusions:

Following the recommendations of the updated geoarchaeological deposit model report (Young & Batchelor, 2018), a programme of environmental archaeological assessment was undertaken on two boreholes retained during the geoarchaeological field investigations (BP-QBH6 and BP-QBH8). In addition, an environmental archaeological assessment was undertaken on selected samples obtained during the archaeological mitigation being undertaken at the site by Pre-Construct Archaeology (PCA), managed by RPS (CgMs Heritage part of RPS), as well as those from Beam Park Phase 2 (West), excavated as part of the archaeological evaluation of this area of the site. The aim of these investigations was (1) to establish the age of the peat horizons recorded at the site; (2) to assess the palaeoenvironmental and palaeohydrological potential of the sequences; (3) to highlight any indications of nearby human activity, (4) to compare the results with those of the Beam Park Phase 1 environmental archaeological assessment, and (5) to provide recommendations for further analysis.

Sedimentary history and landscape evolution

The results of the previous geoarchaeological deposit modelling exercise (Young & Batchelor, 2018) demonstrated that the sediments recorded within the Phase 2 site were similar to those recorded elsewhere in the Lower Thames Valley. Across the majority of the site, the Late Devensian Shepperton Gravel is recorded, overlain by a sequence of Holocene alluvial sediments, including peat, and buried beneath modern Made Ground. The recent geoarchaeological investigations in the northern area of the site have improved our understanding of the deposits here; the Langley Silt ('brickearth') appears to be recorded only in the far north-eastern and far-northwestern corners of the site, generally only where the Gravel surface rises above ca. -2m OD (or higher).

At the site and across the modelled area, the principal relief features of the Shepperton Gravel surface are thus formed by the edge of the Lower Thames Valley floodplain, and its confluence with the valley of the River Beam. The confluence between the Rivers Beam and Thames lies within the area of the Phase 2 site, the topography of which can clearly be made out in the model of the wider Gravel surface (see Figure 20). The surface of the Gravel falls from the northern area of the site, where it is generally recorded at between ca. -2 and -4m OD, to between ca. -6 and -7m OD towards the south. Where it cuts through the Taplow Gravel terrace, the valley of the River Beam can be made out where the Gravel surface falls below -4m OD. The arrangement of the overlying Holocene alluvial sequence is largely dictated by the topography of the underlying Gravel. Thus, over areas of low Shepperton Gravel topography, a thick sequence of deposits is recorded, including in places the Sand, Lower Alluvium, Peat and Upper Alluvium. Overlying areas of higher Gravel topography towards the north the alluvial sequence is thinner, but generally still contains the tripartite sequence of Lower Alluvium, Peat and Upper Alluvium; only in the far north-eastern and north-western corners of the Phase 2 site is this sequence absent, where the Taplow Gravel is overlain by either Made Ground or (in two records) Langley Silt. As described above, recent archaeological investigations within the Phase 1 area of the site just to the east (PCA, 2017, managed by RPS (CgMs Heritage, part of RPS) have revealed prehistoric pottery and worked flint, recovered from the fills of two linear cut into the Langley Silt in Trench 1, as well as probable clay extraction pits of Roman date and a presently undated but potentially contemporary waterhole (see PCA, 2017; feature [84]).

Within the alluvial sequence, a peat horizon is recorded across much of the site at elevations between ca. -1 and -4.5m OD, including in mitigation Area 3, and it is within this unit that the partially worked yew Timber [215] was identified (radiocarbon dated to 4250-4420 cal BP (Late

Neolithic/Chalcolithic). The surface of the peat is relatively even across the site, generally lying at between ca. -1 and -2m OD, although it rises just above this level (to ca. -0.88m OD) in mitigation Area 3 and to -0.64m OD in Trench 28 (Phase 2 (West)). The peat is generally present in thicknesses of between ca. 2 and 3m across the centre and south of the site, although it thins to as little as 0.05m towards the north (e.g. in BP-QBH9). The results of the radiocarbon dating have demonstrated that peat formation began as early as the Late Mesolithic towards the south of the site, where the base of the peat lies at lower levels, (for example in -4.55m OD in BP-QBH8; see Figure 9). As described in 4.5, there is a good relationship between the date for the onset of peat accumulation and elevation of the base of the peat; in BP-QBH6, peat accumulation began at 5945 to 6180 cal BP (-3.15m OD; Early Neolithic), whilst in Trench 28 (at -1.53m OD) accumulation began later, at 4880-5280 cal BP (Middle Neolithic). The base of the peat was not reached in Area 3 Section 60, but the peat here was radiocarbon dated to between 3595 and 3825 cal BP (Early Bronze Age); however, there is some uncertainty as to the age of the base of the column sample from Section 60 (see 4.5), and an additional radiocarbon date should be sought in order to clarify the chronological relationship between this sequence and the worked yew [215], radiocarbon dated to 2300-2470 cal BC/4250-4420 cal BP. Elsewhere, peat accumulation generally continued until the Middle to Late Bronze Age, again with a good relationship between elevation and age for the surface of the peat (Figure 9).

During environmental archaeological assessment of the peat within the Phase 1 area of the Beam Park site (Young et al., 2018), radiocarbon dating indicated that peat accumulation began broadly across this area of the site at between ca. 6500 and 5700 cal BP (Late Mesolithic/Early Neolithic), similar to those dates for the southern part of the Phase 2 site. Again, the earliest dates were recorded where the peat lay at a lower elevation towards the south, but the dates for peat cessation and the transition to the Upper Alluvium were more variable, dated to the Middle Neolithic to Early Bronze Age. The difference in these dates was considered likely to be associated with erosion of the peat surface, following later fluvial activity on the floodplain (Young et al., 2018). In the wider area, investigations at Goresbrook Park (Young et al., 2017; see Figure 1) revealed that peat accumulation began during the Early to Late Neolithic, whilst at Ford Stamping Plant (Batchelor et al., 2018) peat accumulation began during the Late Mesolithic to Middle Neolithic. Elsewhere, nearby sites (see Figure 1) such as Hornchurch Marshes (Batchelor, 2009; Branch et al., 2012), Barking Riverside (Green et al., 2014), Bridge Road (Meddens & Beasley, 1990; Beasley, 1991) and Merrielands Crescent (Batchelor et al., 2017) have all recorded peat accumulation from the late Mesolithic to Bronze Age.

Vegetation history

The combined results of the environmental archaeological assessment, incorporating the results of the pollen and plant macrofossil assessments, are indicative of a floodplain surface dominated by alder carr woodland, with an understorey of grasses, sedges, ferns and various herbs, with sporadic aquatic taxa indicating the occasional presence of pools of standing or slowly moving freshwater. The pollen record indicates that hazel, elm, ash and birch may have occupied the peat surface with alder, but are perhaps more likely to have been growing on the dryland, forming mixed deciduous woodland with oak and lime. It is also possible that yew was growing on the peat surface throughout much of the period of peat formation, with Taxus pollen recorded in all but the sequence from Trench 21 Section 42. The pollen-stratigraphic records indicate that yew was a component of the alder dominated wetland woodland in the nearby vicinity of (at minimum) boreholes BP-QBH6 and BP-QBH8 between ca. 5000 and 4000 cal BP. Several other sites have also demonstrated the growth of yew-alder dominated woodland at this time in the Lower Thames

Valley (e.g. Seel, 2001, Branch et al., 2012, Batchelor et al., in prep), as well as elsewhere in the British Isles (Godwin, 1940; Godwin, et al., 1935; Waller, 1994), Ireland (Mitchell, 1990) and continental Europe (Deforce and Bastiaens, 2007). The quantity of yew pollen at Beam Park is however relatively low when compared to sites such as Hornchurch Marshes (Branch et al., 2012) and Golfers Driving Range (Batchelor et al., in prep) suggesting it formed a limited extent of the local woodland. However, unfortunately it is often difficult to establish the size of the yew population across any given site, because there are a number of species-specific factors that may have caused variations in pollen content. Firstly, there is some debate as to the relationship between yew pollen values and the quantity of trees they represent (e.g. Andersen, 1970, 1973, 1975; Bradshaw, 1981; Mitchell, 1988). Secondly the tree does not reach sexual maturity until it is 70 years of age; therefore the quantity of pollen may under-represent the number of trees present if it dies before this time, as at some sites (e.g. Seel, 2001). Thirdly, the tree is dioecious (grows as either a male or female plant, rather than containing both parts), and therefore may not produce pollen if only female trees are present (Thomas & Polwart, 2003). Finally, the pollen grain is relatively fragile, and can be difficult to identify.

During comprehensive mapping and the identification of over 1200 trees/shrubs from the submerged forest at Erith (Seel, 2001), Alnus (ca. 50%), Taxus (up to 25%) and Fraxinus (ca. 15%) were the three most dominant taxa recorded during two phases of woodland growth dated 4530-4100 cal BP. The same research indicated that the woodland had two distinguishable sub-zones in which: (a) Alnus is well established with Taxus, and (b) Alnus is mixed with Fraxinus where Taxus failed to establish. Within the sub-zones each species forms occasional pure stands, which is typical of the ecology and habitat of all three taxa (Watt, 1926; McVean, 1955; Wardle, 1961). Measurements on the diameters of the trees demonstrated that Alnus consistently exceeded those of Taxus across the site, which is indicative of larger (although not necessarily older) trees within the woodland. Consequently the results indicate that Taxus formed a well-defined under-storey as opposed to canopy species within the fen woodland; the majority of the Taxus diameters were between 11 and 20cm, suggesting a height of 3-5m, under the upper Alnus canopy of 15m (Seel, 2001). However, several Taxus attained a greater diameter and height, with lengths of up to 10m preserved. On the basis of the published diameter-age estimations of Taxus (e.g. Hulme, 1996), Seel (2001) estimated that the larger Taxus trees were up to 180-220 years old, whilst the under-storey shrubs were between 40-50 and 90-110 years old.

The growth of yew on peat at this time is important for two reasons:

(1) Palaeoecology. The modern day ecology of yew is for dry and basic conditions such as chalk downland and limestone geology (Thomas & Polwart, 2003). Its occurrence on peat during the Middle Holocene is therefore very different to today.

(2) Culture. Yew is of great cultural significance and has been utilised from the Palaeolithic through to the modern day. The prehistoric importance of yew is demonstrated by its use in: (i) creating weapons and tools such as spears, swords, bows, knives and musical pipes (e.g. Clark, 1963; Coles et al., 1978; Gowen, 2004, Sheridan, 2005), and (ii) constructing trackways, platforms and boats (Coles and Hibbert, 1968; Coles et al., 1978; Wright et al., 1965, 2001). Previously, only at Golfers Driving Range, Beckton has the direct use of yew been recorded on the Lower Thames Valley floodplain; there it was incorporated into the sub-structure of an early platform structure (dated 1630-2000 cal BC/3580-3950 cal BP). The new find from the current

Beam Park site is therefore particularly important, providing evidence for its use in a different way during the late Neolithic (2300-2470 cal BC/4250-4420 cal BP).

Recent investigations aimed at increasing our knowledge and understanding of the palaeoecology of yew indicated that a dry peat surface was almost certainly required to enable the growth of yew on the Lower Thames Valley peat surface, however, more favourable climatic conditions, and likely areas of human disturbance may have influenced the colonisation of yew on the peat surface. The decline of yew was often related to wetter peat surface conditions, most likely caused by continually rising Relative Sea Level (RSL). It was also considered likely that human activity had a far greater influence on the decline of yew, than on its expansion, and it is notable that the decline occurs at the transition from the Neolithic to Bronze Age. A return towards a more continental climate may also have contributed to the yew decline from the wetland (Batchelor, 2009; Batchelor et al., 2012).

Although the assemblages are broadly similar in all five sequences, some other important spatial and temporal variations can be identified, including (1) a decline in tree taxa towards the top of sequence (particularly noticeable in Trench 28 and Trench 21 Section 42, with an increase in the number and variety of herbaceous taxa, from approximately 3500 cal BP onwards, and (2) a stronger dryland signal within the sequences closest to the dryland. Although no definitive evidence of human activity is recorded in any of the sequences, it is possible that the decline in woodland cover and increase in herbaceous taxa recorded in Trench 28 and Trench 21 Section 42 may (at least in part) be representative of anthropogenic activity. In addition, raised microcharcoal values recorded towards the base of BP-QBH8, indicate burning, though whether this is of anthropogenic or natural origin is uncertain.

These spatial and temporal variations become of added interest when compared with the findings from Beam Park Phase 1 (Young et al., 2018), and nearby sites such as the Former Ford Stamping Factory (Batchelor et al., 2018) and Goresbrook Park (Young et al., 2017). At the Phase 1 site (Young et al., 2018) a similar floodplain landscape of alder (and occasionally willow) carr woodland was indicated, again with an understorey of shrubs, grasses, sedges and aquatics for much of the period of peat formation across the site, with a similar mixed deciduous woodland with oak and lime on the dryland. Here, Taxus pollen increased towards the top of the BP-QBH3 sequence, representing the growth of yew on the peat and/or dryland surface during this period. Taxus was not recorded during the assessment in either BP-QBH1 or the Section 100 sequence, suggesting its absence in these parts of the site. Alder-yew woodland is a well-recognised vegetation community growing on the peat surface of the Lower Thames Valley and other peatland environments across north-western Europe (e.g. Branch et al., 2012), and where recorded, it is generally present between ca. 5000 and 4000 cal BP. Its occurrence at both the Phase 1 and Phase 2 sites is thus within this range.

At the Phase 1 site, a marked increase in seeds of Brassica/Sinapis sp. (e.g. field mustard) occurred at the top of the sequence in BP-QBH3 (-0.92 to -0.97m OD); perhaps significantly, a similar increase occurred in the sequences in Area 3 Section 60 and BP-QBH6 (although it was most evident in Area 3 Section 60). The Brassicaceae family includes several species of economic value, and many are weed species associated with cultivation, although wild forms do occur. Although not unequivocal evidence for human activity, the occurrence of Brassica/Sinapis sp. may be associated with the general reduction in woodland cover and opening up of the landscape in this area, and perhaps cultivation or as an associated weed.

A similar vegetation assemblage to that at the Beam Park Phase 1 and 2 sites has been identified at several of these sites for both the floodplain and dryland, and definitive indicators of human activity have rarely been recorded during the palaeobotanical assessments. However, at Goresbrook Park (Young et al., 2017) both lime and oak declined in the upper half of the peat sequences, matched by an expansion in the diversity of herbs (including an individual occurrence of cereal pollen) and increase of microcharcoal, here interpreted as possible evidence for late prehistoric woodland clearance for settlement and/or agricultural purposes. In addition and perhaps significantly, high values of microcharcoal were also recorded towards the base of the peat sequence at Goresbrook Park, Ford Stamping Plant (Batchelor et al., 2018) and Merrielands Crescent (Batchelor et al., 2017), suggestive of nearby or in situ burning, though whether this was of natural or anthropogenic origin cannot be confirmed at this stage.

Geoarchaeological investigations carried out at the Barking Riverside site ca. 1.5km to the southwest on the floodplain of the Thames (Green et al., 2014) revealed an uneven Shepperton Gravel surface, generally lying at between ca. -5 and -2.5m OD. Here, alder and willow woodland dominated the floodplain with a range of brambles, grasses, sedges, ferns and aquatics during the Neolithic and pre-Neolithic cultural periods, whilst mixed deciduous woodland and hazel shrubland dominated on the nearby dryland (Green et al., 2014). An increase in wetland woodland was recorded during the Later Neolithic, characterised by an increase in diversity to include yew and possibly ash on at least some parts of the floodplain; however, from ca. 3300 cal BP alder dominated woodland declined on the floodplain, and was replaced by vegetation indicative of wetter conditions and eventual estuarine inundation (Green et al., 2014). Although no unequivocal evidence for human activity was found within the sequence here, the occurrence of an array of herbaceous pollen taxa including possible cereal pollen and disturbed ground taxa at this time was considered to be a possible indicator of Bronze Age land clearance, whilst the influence of relative sea level rise was also highlighted (Green et al., 2014).

Archaeological investigations carried out at the Passivore Housing Development site ca. 600m to the east (see Figure 1) indicated that the gravel surface rests largely at between 1 and 2m OD (Dyson, 2013; Krawiec, 2014); similar to that recorded on the northern part of the Dovers Corner site immediately to the east (Batchelor & Young, 2016). Here, a similar terrace-edge setting was encountered, with much of much of the site at the confluence between the Rivers Ingrebourne and Thames. The resultant topography here was a high gravel surface on the northern and northeastern parts of the site (resting between 1 and -0.5m OD), with lower Gravel surfaces recorded on the River Thames and Ingrebourne floodplains to the south and northeast respectively (both at -3 and -4m OD; Batchelor & Young, 2016). To the east of Dovers Corner (see Figure 1) the archaeological trenches at the Bridge Road site (Meddens & Beasley, 1990; Beasley, 1991) indicated the presence of Lower Alluvium, peat and Upper Alluvium totalling more than 3m in thickness. The peat (ca. 1.5m thick) was radiocarbon dated to between 5270-4620 (-1.09m OD) and 3370-3000 cal BP (0.44m OD), equating to accumulation between the Late Neolithic and Late Bronze Age. Several archaeological remains were uncovered on the site. Beneath the peat (and thus pre-dating the Late Neolithic), postholes, pits and other remains were recorded cutting into the Gravel. Towards the top of the overlying peat, a brushwood trackway was recorded, orientated southeast to northwest. This was radiocarbon dated from 3640-3210 cal BP (Bronze Age). Late Iron Age and Roman remains were also recorded in features in the overlying Upper Alluvium (Meddens & Beasley, 1990; Beasley, 1991). Around 1km to the west at Hays Storage Services Ltd. (Divers, 1996), a 4m wide Bronze Age causeway, orientated NNE/SSW and constructed of gravel and burnt flint was identified within peat at a depth of -1.70m

OD (Divers, 1996). At the Passivore Housing Development site, much of the site was overlain by thin peat and Upper Alluvium, but in the southeastern corner, organic-rich horizons and pockets of peat were recorded. A 20cm thick peat horizon was radiocarbon dated from 3860-3700 to 3700-3560 cal BP, equating to a short period of accumulation during the Bronze Age. No archaeological remains were recorded during the course of the archaeological excavations.

Investigations were carried out close to the floodplain edge 'East of Ferry Lane' as part of the High Speed 1 (Bates and Stafford, 2013). One trench (24.455km; No. 14 on Figure 1) indicated a high gravel surface lying close to -1.0m OD. Here, the surface of the sands and gravels included an in situ assemblage of 65 worked and burnt flint. These were overlain by organic mud and peat deposits of Neolithic date (5470-5060 cal BP). The Brookway Allotments site at which extensive evidence of an Early Neolithic Settlement was recorded, is located approximately 300m southeast of the 24.455km trench (Newham Museum Service, 1992; No 13 on Figure 1). Just south of this location, another HS1 excavation was carried out (24.755km; No 15 on Figure 1) targeted on the projected orientation of a trackway from the Brookway Allotment site. Whilst no archaeological remains were recorded, a significantly thicker sequence of Holocene alluvium was recorded, overlying Shepperton Gravel at - 4m OD. Radiocarbon dating indicates that accumulation commenced 6290-6000 and continued until 2690-2180 cal BP (late Mesolithic to Iron Age).

5.27 The following recommendations are underway as part of the analysis and publication stage:

The sequence from the Beam Park Phase 2 site provides an opportunity to consider the vegetation history of this part of the Lower Thames Valley in more detail, in a landscape setting where prehistoric human activity is known to have taken place close to or at the margins of the River Thames floodplain. The results of any further analysis can be integrated with other sites being investigated along an east-west transect close to the floodplain edge, including at Beam Park Phase 1 (Batchelor et al., 2018), Goresbrook Park (Young et al., 2017), Hornchurch Marshes (Batchelor, 2009; Branch et al., 2012, Ford Stamping Plant (Batchelor et al., 2018) and Merrielands, Dagenham (Batchelor et al., 2017)….

For the present site, analysis is recommended on the pollen assemblage in the sequences from BP-QBH6, BP-QBH8 and Area 3 Section 60, along with two additional radiocarbon dates for each borehole sequence, and an additional date for Section 60, in order to provide a better chronological framework that can be used to compare the data with other sites in this area as well as the archaeology identified within Area 3. With regards to the diatoms, preservation within many of the samples is very poor, with only the uppermost samples of BP-QBH8 containing assemblages suitable for further analysis. Full analysis of the diatoms in this part of the sequence would enable the reconstruction of approximate depositional positions within the tidal frame at the time of sedimentation, with the associated information regarding Relative Sea Level (RSL), which would be achieved using the classification scheme of Vos and de Wolf (1993).

The recommended analysis work should contribute to a future publication of the results of geoarchaeological and palaeoenvironmental investigations in this area.

5.28 These are in addition to the recommendations from Area 2 which were included in the Phase 1 report (QUEST Jan 2018):

.. in mitigation Area 2, an apparent hiatus in deposition was evident on the surface of the Lower Alluvium in Section 100 column <3>, along with … other possible evidence for prehistoric human activity (PCA, forthcoming). Although evidence for a possible land surface here was limited in the

lithostratigraphic description, micromorphological analysis of this column sample is recommended in order to identify any evidence for soil formation. It should also be noted that other samples have been collected by PCA during the Mitigation Area 1 and 2 excavations; should any of these benefit from environmental archaeological assessment, these should be considered in subsequent stages of the work.

6 REVIEW OF POTENTIAL EFFECTS

6.1 As identified above, there are no designated or non-designated heritage assets, as defined in the NPPF, recorded on the Site. Therefore, development will not physically impact on any designated assets or any currently known non-designated assets.

Scheduled Monuments

6.2 The settings of the Scheduled Monuments (SMs) within and beyond the wider study area (Fig. 2B) are relatively confined.

6.3 Aveley moated site is screened from views north-west by Aveley itself. The moated site's setting is its adjacent agricultural landscape to the east side, which provide a vestige of its original wider agricultural setting (to the west built over by the modern residential development of Aveley village).

6.4 Purfleet Magazine's setting is predominantly its aspect out over the river to the immediate south, which it has guarded, rather than inland. It is similarly immediately screened from views north-west by buildings adjacent to Centurion Way (with the Industrial Estate at Rainham also interrupting views from Purfleet towards the Site).

6.5 The development of the Site would not detract from the views to/from these SM's or their settings and they would be adversely affected in terms of setting no further GPA3 setting assessment is required.

6.6 However, due to the increase in heights to certain Phase 2B structures in LBBD (especially Block N from 12 to 15 storeys with a 16th storey set back), some further assessment of possible visual effects to Lesnes Abbey has taken place in support of the Phase 2B RMA (see below).

<u>Archaeology</u>

6.7 As the archaeological evaluation and mitigation works have been completed in advance of the RM application (in accordance with the draft conditions for the Hybrid application and ahead of surcharging). The archaeological process of identifying and mitigating archaeological effects has also been completed in the field. The assessment stages of reporting have been completed (PCA Dec 2018; QUEST Dec 2018) leaving the final analysis and publication stage reports to complete.

6.8 A summary of the completed works indicates that following removal of the worked tree in Mitigation Area 3 there no known undesignated archaeological assets, as defined in the NPPF, that have not been mitigated within the Phase 2 Site. The Phase 2 trenching and Mitigation Areas have confirmed that c.2m of Made Ground seals the later prehistoric to Roman period 'upper alluvium', which in turn seals peat of earlier prehistoric date (mainly Bronze Age and Neolithic in date). This Made Ground, with the additional surcharge material, is sufficiently thick to buffer the natural flood and marsh deposits below from all development impacts other than slight compression and the effects of deeper piling.

6.9 Mitigation Area 2, at the eastern edge of Phase 2, found no significant evidence of human activity associated with the alluvium and peat. The only archaeological finds comprised stray finds including a deer tibia, a human fibula, a sherd of prehistoric pottery and a few pieces of burnt flint. These finds are similar in nature to deer antler found by workers in peat deposits in the 18th

century just to the west of the Beam, immediately south of the Beam Bridge (RPS 5 on Fig. 2), an area of the Site that would be unaffected by proposed groundworks.

6.10 Ahead of mitigation of Area 3 GLAAS had carefully weighed up whether excavation to 'preserve by record' or 'mitigate by design' possible structural remains of a wooden trackway remains' would be required. However, the zonation of piling suggested that avoidance would be highly probable and in a letter of 11th January 2018 GLAAS concluded as follows:

"*The GLAAS view is that the chalcolithic activity is significant and that there is potential for the evidence from it to be to be regionally or nationally important. Current knowledge does not allow for a full assessment of importance and this aspect is likely to only be understood through wide area fieldwork.*

The specific impacts that RSK have enumerated are several and should the site prove to be of high significance and extensive, they may require some future control and management in order to minimise their impacts.

We recommend that the proposed initial stage of excavation be put into action, with provision for appropriate on-site specialist sampling and assessment during fieldwork.

Following that work, we would expect to take stock of the results and then use them to determine any further management measures, which may include wider excavation and/or preservation in situ of significant remains that can be reasonably expected to be present outside the excavation area.

I recommend that the first stage excavation take place promptly in order to allow for any extra measures to be implemented in good time before the surcharging and works programmes commence.

…Adam Single, Archaeology Adviser, Greater London Archaeology Advisory Service (GLAAS)"

6.11 As discussed above the following excavation of Area 3 found that the remains were in fact not those of a trackway. Therefore, its extension beyond the mitigation area was found not to be an issue. Instead a single fallen yew tree was found to have been notched with early metal tools of Chalcolithic/ early Bronze Age date. The tree was isolated within the former peat marsh and in the absence of any other associated activities it can be concluded that it represents a one-off event that took place in this local area of marsh. In addition, the worked yew was removed from the excavation as an artefact for further lab-based cleaning and assessment so there are no longer *in-situ* remains present. A section of the worked tree is currently being conserved at the specialist facilities of York University ahead of display at Valance House museum in the LBBD.

6.12 As a result of the investigation, removal and conservation of the archaeology (allowing a positive contribution to the history of the Borough) GLAAS have not required any further mitigation or any foundation design modifications.

6.13 The most westerly trench of the additional Phase 2 evaluation trenching, designed to investigate the proposed access for Phase 2, found an area of preserved brickearth immediately south of New Road. Whilst no archaeological features were noted some GLAAS noted that should it be possible, archaeological watching brief could be applied to this small area. However, due to the prior raising of ground levels to meet New Road as part of the surcharging it is unlikely that the

brickearth levels will be exposed/impacted by the new access road, and a watching brief appears not be practical.

6.14 The archaeological potential of the Phase 2 site has therefore been realised by the investigations undertaken ahead of surcharging. No significant effects on unknown archaeological sites, structures or artefact scatters, from the installation of piling and services during the Phase 2 construction phase, are anticipated on the basis of the sample investigations.

6.15 The ongoing analysis of the results will provide an important contribution to the understanding of the human utilisation and natural formation of the Thames marsh at the edge of the gravel terrace in east London.

6.16 The few remaining Ford related structures at the Site (Fig. 17) have been recorded as part of the wider project. Recording of structures within Phase 2 to the agreed standard enables their demolition, as agreed with GLAAS in relation to the wider Hybrid Application. The PCA report is provided as Appendix 2.

Built Heritage

6.17 The following text is derived and amended from the Phase 2B ES addendum (RPS in PBA 2019) that was provided as an addendum in support of the RMA for Phase 2B for the consented Hybrid application. As with a previous ES addendum for Phase 1 it was provided to address the increases in block height in Phase 2. Phase 2A build height is within the same parameters as at Outline for the Hybrid application.

6.18 It is not considered that there would be significant effects in EIA terms on most of the Listed Buildings or Conservation Areas between 2km to 5km buffer zone (wider study area – Fig. 2B) from the taller Phase 2 tall buildings. This is due to their distance from the Site (over 1km), screening from the Site provided by intervening urban landscape, topography and vegetation, and additionally a lack of direct historical associations with the Site.

6.19 Further assessment builds on the Heritage setting assessment provided in the 2017 Environmental Statement for the Hybrid Application and in particular includes GPA3 assessments with regard to Rainham CA (RPS 216) and associated listed buildings including the Grade I Church of St Helen & St Giles and Rainham Hall (RPS 151-5), is also provided for Dagenham Village CA and its two associated Listed Buildings, for two other listed buildings with some possible inter-visibility located to the north of the site (RPS 167 & 173/177) and for the Crossness Conservation Area (RPS 217) including Grade I Listed Pumping Station (RPS 169; National List 1064241) to the south side of the Thames. Lesnes Abbey SM and Grade II listed building (RPS 150) has also been scoped into the following assessment

Potential effect 1 - Church of St Helen and St Giles Rainham (Grade I) (RPS 151; National List 1358505)

Introduction:

6.20 The location of the Church of St Helen and St Giles Rainham (Grade I) is shown on Fig. 9.1 ('RPS 151'). The Listing description includes the following text:

"Circa 1170, a remarkably complete and unaltered Norman church, consisting of nave with aisles, chancel and west tower. Later features include clerestory windows of the C18. The

chancel has a C15 crown-post roof of 2 bays. An unusual feature of this church is a mediaeval scratch-drawing of a ship on the wall of the rood-loft staircase."

6.21 The rare completeness of survival the Norman architecture and the 15th century drawing are the principal factors in its Grade I status as a highly significant asset. The church has evidential, historical, aesthetic and communal value as a publicly accessible place of worship.

6.22 Steps 2-4 area assessed as follows:

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.23 The immediate setting of the church comprises its small churchyard which is lined by trees to the west side and alongside Bridge Road/Broadway. Its extended setting includes the core area of the previously associated dispersed medieval village, as broadly encompassed by the CA. Associated archaeological remains of the contemporary village probably survive below ground within the extended setting. These elements make a moderate contribution to the significance of the church.

6.24 The wider area of the former farmland of Rainham parish, between the church and the site has been built over by roads and by numerous industrial businesses, including buildings up to three storeys high. The modern industrial character of the area between Rainham CA and the site (such as Rainham Steel including former Ford works at the site) has fundamentally altered the previously agricultural landscape and this zone makes a negligible contribution to the significance of the church.

6.25 Although the church tower is relatively squat it was formerly within a relatively flat open landscape including the salt marsh and dry land arable zones to the north of the marsh, and was designed to be viewed from all directions within that surrounding landscape. However, the view towards the site is no longer possible to appreciate from the church due to the presence of a screen of trees in the churchyard, by buildings to the west side of Broadway/Bridge Road, high vegetation and trees of a park forming a screen to the north-west edge of the Conservation Area, and by the aforementioned intermediate 20th century industrial landscape.

6.26 The church can only be appreciated fully from within the Conservation Area itself.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.27 No construction traffic will access the site via Rainham CA.

6.28 Theoretically there would be distant sight line to the site from the top of the church tower (although the church is of relatively squat form and the tower never dominated the surrounding landscape). However, this is not a view that is generally witnessed and there would not be views out to Phase 2B from ground level.

6.29 The proposed development will not detract from the ability of people to appreciate it during construction of the upper storeys and during operation because the church has an enclosed setting within the associated CA and can only be satisfactorily viewed from ground level in adjacent areas of the CA. It is possible that the people living in the upper storeys of the proposed tall buildings of Phase 2B within the site will be able to appreciate the church via a distant view of

its tower although this view will be further restricted by the consented tall buildings within Phase 1 of Beam Park. A Neutral/Negligible visual impact is anticipated. The resulting effect on the importance is considered remain to be Neutral/Negligible to Slight Adverse and not therefore significant in EIA terms.

6.30 The changes therefore do not result in different significant effects to those previously identified.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.31 The finishing and colour palate of the tall buildings has been carefully considered to minimise visual harm. No further mitigation is proposed.

6.32 Step 5: make and document the decision and monitor outcomes.

6.33 NA at present.

Potential effect 2 - Rainham Hall and associated lodge, stable block and railings (all Grade II*) (RPS 152-5; National List 1079922, 1079923, 1183554, 1358506)

Introduction:

6.34 The listing description includes the following:

"Built in 1729 for John Harle a merchant and owner of Rainham Wharf. Three storeys and basement. Brown-red brick with red rubbed brick dressings. Plinth with stone cornice, rusticated stone angle quoins, brick bands between each storey, elaborate carved wood cornice, panelled parapet. Five cambered headed sash windows, cased frames, glazing bars. Double keystone, and projecting panelled aprons to each window. The centre one window bay of the front projects slightly for the whole height. Central entrance with very handsome carved wood porch with fluted Corinthian pilasters supporting individual entablatures with an open segmental pediment, richly coffered on the soffit. Doorway has architrave surround with baroque scrolled feature to centre. Door with 12 glazed panels, thick glazing bars; 2 fielded panels to bottom. Flight of 4 stone steps, with moulded nosings, up. Rear elevation, similar, but with recessed aprons to each window, central closed porch with fluted pilasters, triglyph frieze and cornice. A symmetrical central 1st floor round headed staircase window with dropped cill. Churchyard elevation similar, no doorway or central projection, 3 windows. Similar front to south. Flat topped hipped old tile roof, rectangular stacks. The interior is unaltered with many fine contemporary fittings. All the principal rooms are fully panelled, there is a black and white marble floor in the entrance hall, a fine staircase with cut string and twisted balusters, and several good fireplaces. (Reference: Country Life 5 June 1920)."

6.35 The relatively unaltered form of both the exterior and interior and association with John Harle are key elements in its highly important grade II* designation. There building has historical and aesthetic heritage value and has communal value as it is open to the public.

6.36 Steps 2-4 area assessed as follows:

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.37 The immediate setting of Rainham Hall is defined by the associated garden property, lodge, stable block and railings, and by its location to the south side of the church and fronting Broadway within the core area of the Conservation Area.

6.38 The building is inter-visible with the site from ground level due to trees to the immediate west flanking the road, by buildings to the west side of Broadway/Bridge Road, vegetation to the north-west side of the CA and by 20th century urban landscape. The Site makes no contribution its setting which is defined by its gardens, courtyards, and the inter-relationship between the Listed Buildings that make up the complex. The wider setting is Rainham village, commensurate with the Conservation Area. There is also a historical link via its 18th century owner John Harle and Rainham Wharf which he also owned and conducted a merchant business from. There are no such historical links with the site however.

***Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it*;**

6.39 The proposed development will not detract from the ability of people to appreciate it during construction of the upper storeys and during operation because, as with the church and the other buildings of the associated CA, Rainham Hall has an enclosed setting and can only be satisfactorily viewed from ground level from within the adjacent areas of the CA. It is possible that the people living in the upper storeys of the proposed tall buildings within the site will be able to appreciate Rainham Hall a distant view of its upper level/roof in winter through vegetation. A Neutral/Negligible visual impact on the High importance Rainham Hall buildings is anticipated. The resulting effect on the importance of these assets is considered to be Neutral/Negligible to Slight Adverse and not therefore significant in EIA terms.

6.40 The changes therefore do not result in different significant effects to those previously identified by the ES June 2017 and subsequent addenda heritage setting assessment.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.41 No further mitigation is proposed.

Step 5: make and document the decision and monitor outcomes.

6.42 NA.

Potential effect 3 - Rainham Conservation Area and associated listed buildings (RPS 216)

Introduction and significance

6.43 The location of the Rainham Conservation Area is shown on Fig. 2B ('RPS 156, 215') with plates provided as Appendix 3. Rainham CA is described in the Rainham Conservation Area Character Appraisal and Management Proposals (LBH undated), as follows:

'Rainham Conservation Area was designated in April 1968 and was one of the first conservation areas in the Borough, with Romford and Cranham, to be designated. There have been no extensions to the boundary since then. The designation report focuses on the "old buildings which give the village its character", but recognises the need to include other sites and buildings "having a definite bearing on the character of the village". In this case, the focal group consists of the Church of St Helen and St Giles, the Vicarage, Redberry, the War Memorial, Rainham Hall and

The Lodge, the stable block adjoining The Lodge, and 2-8 Upminster Road South. Other than this, the report does not specify the special interest.

The listed buildings in the Conservation Area are: at grade I, the Church of St Helen & St Giles; at grade II, Rainham Hall, the forecourt railings, gates and piers to Rainham Hall; The Lodge, and the stable block at Rainham Hall. Listed at grade II are the garden wall of Rainham Hall between Nos.15-37 Wennington Road; No. 29 Broadway (Redbury or Redberry), The Vicarage, and the War Memorial and K6 telephone kiosk. Locally listed buildings are Nos. 9-27 Upminster Road South, 12 Broadway, The Bell PH, The Angel PH, and Broadway Cars.*

The garden of Rainham Hall and the churchyard, which both have public access (although very limited in the case of Rainham Hall's garden), are included in the London Parks & Gardens Trust's London Inventory of Historic Green Spaces for Havering.

Additional qualities identified

The Conservation Area is part of an ancient settlement which developed in medieval times and retains a distinctive identity through its clear physical separation from surrounding built development.

It is also still defined and identified with natural features - a spit of high land separating Rainham Creek, the Ingrebourne river and Rainham Marshes - which were the reason for the original settlement.

The early origin (pre-1086) and relatively unaltered appearance of the church and its significant position as a landmark provide a focus for the Conservation Area; and the churchyard provides a well-used semi-public open space, which is also very important as a setting for the buildings.

The area has, at its centre, a very high quality group of listed buildings (grade I, II and II), which are architecturally significant, but also indicative of the economic history of the village through its association with trading from successive Rainham wharves - medieval, Georgian and early 20th century.*

The unlisted buildings in Broadway and Upminster Road South provide an appropriate backdrop for the listed buildings, and in their own right help to retain the character of a traditional settlement despite the proximity of modern built development. Many 19th century shop-fronts survive in whole or in part.

Many small traders and a range of local services survive, giving the area a lively and independent local character, which is not dominated by the standard frontages of national retailers.

The three public houses retain much of their character and detailing, and also act as landmarks at the entrances to the village.

Alleys and paths from the main streets, which indicate the historical pattern of development, give glimpses of rear gardens and the creek, and wider views out to the setting of the Conservation Area.

Gardens and open spaces have many fine mature trees which complement the listed buildings, and also diminish the effect of less attractive elements in the Conservation Area.

The path to and from Tesco has contributed positively to the townscape with its arch on the street frontage, and by making a direct link may encourage use of the village shops.'

6.44 The importance of the CA is assessed as high due to its historical significance, archaeological (evidential) potential communal aspects and distinctive identity.

6.45 Steps 2-4 area assessed as follows:

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.46 The CA appraisal includes the following extract:

"Situated twelve miles east of the City of London, Rainham is on the edge of Rainham Marshes which border the Thames, although it is separated from them by the railway line and the A13, one of the main eastward routes out of London. It is therefore the closest of Havering's conservation areas to the River Thames, and very close to the borough's boundary. The majority of the settlement is to the north of the A1306, but the historic village centre lies on the B1335 to Wennington on the old London to Southend route. Divided by the valley of the River Ingrebourne from neighbouring Hornchurch, and with open countryside to the north and east, the settlement is still physically isolated from nearby suburban development, with only the approach from the west being densely built up...

Like many of the other conservation areas in the urban fringes of the Borough, the village is embedded in suburban development on one side, but surrounded by open countryside on the rest. In this case, the River Thames's marshes, and its tributary the Ingrebourne emerging onto the Thames at Rainham Creek, define the south and west of the village. From the north round to the south east, open and flat countryside extends across the M25 and into Essex, dotted with farms, sand and gravel pits and country parks. The alluvial marshlands of Rainham are only 1.5 to 1.8 metres (5ft -6ft) above sea level, and the rest of the area rarely rises above 18 metres (60ft). However, the alignment of the Thames at that point protects them from the worst storms. The entire Conservation Area is an Archaeological Priority Area and the Greater London Archaeological Advisory Service must be consulted about all applications within it."

6.47 The setting of the CA is restricted to the CA itself due to its insular character and restricted short distance views. It is clearly defined by surrounding industrial, commercial and residential elements. There are no plans to enlarge the CA as these external elements define its area by contrast. Other modern elements which may be seen as detracting elements include two tower blocks (the closest of which is Napier Tower) which are clearly visible to the north via a sight line along Bridge Road from the core of the CA. However, these are no more than a minor detracting element from the importance CA. There is no such view corridor towards the proposed blocks at the site.

6.48 Although it is partially surrounded by modern development and industry (including suburban Hornchurch to the north-west), severing it from its formerly surrounding farmland, the CA itself retains an enclosed village appearance around the Norman church, Rainham Hall and the local shops. The site makes no contribution to the setting of the CA and has no important historical associations.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.49 The CA is located at c.1.5 km from the eastern extent of Beam Park (Phase 1). Block N is the tallest proposed building in Phase 2B (up to 15 storeys) but a similar height structures have been consented within Beam Park Phase 1 in LBH and these provide a further screen to the Phase 2 blocks.

6.50 As the CA is not intersected by New Road at Rainham construction traffic would not normally access the site via the CA and there should be a neutral impact and effect in terms of noise and additional traffic to the CA and its Listed Buildings.

6.51 The CA is generally inward looking. Its most important buildings, Rainham Hall and the church, are screened at their immediate north-west side by a closely set row of tall trees. Due to the enclosed nature of these two high importance buildings, the increase in height of the LBH multi storey buildings would have no additional effect during construction of the upper storeys and during operation.

6.52 Blocks of flats including Napier House that are located to the north-west of the CA, are currently highly visible from Bridge Road via a north-west sight line enabled by Bridge Road. There would be no such view corridor towards the site due to the screening effect of the buildings that flank the west side of Bridge Road and trees and vegetation within the public park at the north-west side of the CA, west of Bridge Road. Nevertheless it is possible that higher (15 storey) new building may be distantly visible from restricted view points adjacent to the railway within the western edge of the CA.

6.53 The buildings on the west side of Bridge Road are situated to front onto the road with their rear views SW of lesser importance. The Vicarage and the two pubs on the west side have highly restricted views west towards the site due to a screen of high trees at the north-west edge of the CA. No increase in effect from increased height of the LBBD structures is envisaged.

6.54 Views from Lamson Road just beyond the west edge of the CA demonstrate that thick high vegetation will obscure views west from the CA. There may be restricted views from the close to the railway at the SW edge of the CA (ends of back gardens looking west along the railway line) but there would be very little if any visibility from the buildings within the CA.

6.55 For the Townscape & Visual Impact assessment for the 2017 Environmental Statement for the Hybrid Application, Rainham Conservation Area also visited and there were found to be no views of the site from ground level, publicly accessible, areas within the CA (Rosie James pers. comm. 24th February 2017). It was noted that there is one glimpsed view from the northern edge of the pedestrian footbridge over the tracks at Rainham station, just on the edge of the conservation area, in which some of the proposed taller buildings may be seen (although the majority of the footbridge is enclosed).

6.56 The site, the vast majority of which is surfaced, or in the case of Phase 1 has now been subject to surcharge deposition, does not contribute to the importance of the Rainham CA, or the Listed Buildings within, as it is located well beyond its setting. There is generally no inter-visibility from ground level between the low-lying site and the CA. From the eastern end of the site views towards the CA are blocked by the industrial/commercial buildings to the east (either side of Bridge Road/Lamson Road and the Ingrebourne River/Rainham Creek).

6.57 Given the current enclosed environment of the CA, with its setting already partially bracketed by adjacent modem structures, roads and vegetation, the additional built environment that would be constructed at the site is considered to result in a Negligible Adverse visual impact on the CA and the High and Medium importance structures it contains. The resulting effect on the importance of these assets is considered to be Slight Adverse and not therefore significant in EIA terms.

6.58 The proposed increase in height for Phase 2 (Phase 2B) would not alter this assessment as the new structures are still only likely to be seen (during construction of the upper storeys and during operation) from adjacent to the railway track bridge in the extreme western area of the CA. This area of the CA contains no Listed Buildings and is included in the CA due to its remaining open character which potentially preserves archaeology associated with the medieval core.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.59 The finishing and colour palate of the tall buildings will help minimise visual harm. No further mitigation is proposed.

Step 5: make and document the decision and monitor outcomes.

6.60 NA

Potential effect 4 - Dagenham Village Conservation Area (RPS 215) including Church of St Peter and St Paul (RPS 156; National List 1359302)

Introduction and significance

6.61 The Dagenham Village Conservation Area Appraisal by the LBBD (undated) states:

"The Dagenham Village Conservation Area was designated on 31 January 1995. Dagenham Village is first mentioned as one of the settlements that were given circa 687 AD to the abbey at Barking. The earliest form of the name was Daeccanham, meaning ham or farm of a man called Daecca. The early village is not mentioned in the Domesday book. The conservation area is due to its origins and historical associations. Dagenham Village was the main settlement in the parish, Chadwell Heath and Beacontree Heath were small hamlets. Chadwell Heath though was remote from the village. Barking was a separate parish. Most of the village buildings were knocked down to make way for new development which at the time was considered progress. Unfortunately the only records of these aspects of the village are photographs and archives. Crown Street, the main street of the village was largely destroyed in the 1960s and 1970s in preparation for the building of the Ibscott Estate."

6.62 The key characteristics to be preserved and enhanced are listed below:

- *'Saxon origins-evidence of early settlement, located on the Wantz river, a tributary of the Beam*
- *Part of Barking Abbey-Dagenham Village was once part of the land owned by Barking Abbey*
- *Medieval street pattern-part of ancient street pattern remains although much changed (Church Elm Lane, Church Street, Crown Street)*

- *St Peter and St Paul's Parish Church-medieval origins, first mentioned 1205, rebuilt 1800, associated with local families and various famous people*
- *Churchyard-St Peter and St Paul's Churchyard is a Local Nature Reserve, graves associated with local and famous people*
- *The Vicarage-17th century remodelled 19th century, former vicarage for St Peter & St Paul's*
- *Cross Keys Inn Public House-15th century timber- framed hall house, former tannery*

Buildings of particular architectural or historic interest. There are three Listed Buildings within the conservation area

- *one Grade II*-St. Peter and St. Paul's Parish Church*
- *two Grade II-The Vicarage and the Cross Keys Pub*
- *Locally Listed Buildings-there are two locally Listed Buildings. These are:*
- *Dagenham Old National School*
- *Petronne House*

The school was the first school in Dagenham, built in 1835 by Revd Thomas Lewis Fanshawe next to St. Peter and St. Paul's Parish Church. Petronne House was a former bank building at the junction of Church Street/Church Lane. They do not meet the criteria for listing but do have local significance and are recognised for their architectural importance, or historic interest and are worthy of protection...

Archaeology-the conservation area is within an Area of Archaeological Significance

Positive features-view along Crown Street from Church Elm Lane to the church, views across the Millennium Green to the War Memorial, church, pub and school, view from opposite the school towards the church; view from within the grounds of the pub towards the church, War Memorial and Millennium Green (also known as the Memorial Green) implemented 2000 instigated by local people…

The Dagenham Village Conservation Area is in Dagenham Village which is located in the east of the borough close to the boundary of the London Borough of Havering. It lies approximately 2 km to the north of the A13 and 1 km to the east of the Dagenham Heathway shopping area and District Line station. The conservation area is centred on St Peter and St Paul's Parish Church in Church Lane which was at the heart of the village. It is a relatively small conservation area and includes the Cross Keys Public House on Crown Street, the Vicarage, the church graveyard, Dagenham Old National School, the current vicarage, the Millennium Green, the shops, some residential properties as well as some incidental open space and car parking areas...

Dagenham Village Conservation Area retains a village character and a sense of it being an ancient settlement but it is evident that much of the village has changed over the years…A sense of what it once may have been like as rural settlement can be felt when standing outside the church.

The conservation area today is predominantly surrounded by development dating from the Victorian era through to the late 1990's of varying character, layout, height and density. The Victorian shops and houses on Church Street are quite in keeping but some of the more recent developments encroach on the village. There are no distant views from the conservation area. The main views are fairly short and within the conservation area itself with the church being the main feature.'

6.63 In terms of heritage values the church is of highest value given as it has evidential, historical, aesthetic and communal value as a place of worship open to the public.

6.64 Steps 2-4 area assessed as follows:

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.65 Dagenham Village Conservation Area retains a medieval and post-medieval village character but is surrounded by modern developments including a tower block to the west that help define the CA by contrast. The short views within the CA between the listed buildings, locally listed buildings and open spaces, including from the southern edge of the churchyard back to the church, are considered most important. There are no long views out of the CA that further contribute to its setting and the extent of the setting is considered to be the CA itself.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.66 No construction traffic will access the site via Dagenham Village CA.

6.67 The CA is located at c.1.5 km to the north of the Phase 2 site. The site presently makes no contribution to the medium to high significance of the CA as there are no important historical links between the locations, or key views that would be interrupted by the proposals.

6.68 As noted the surrounding developments around the CA restrict long-distance views of landscape and townscape from ground level. The vegetation at the southern edge of the tranquil churchyard currently screens views of the houses to the south side of the CA. These houses are visible from Church Lane within the centre of the CA and the upper parts of the blades of the distant wind turbines along Fiesta Drive, located to the south of the site, are visible (on clear days) from Church Lane (i.e. looking south along Church Lane to the west of the church - see Appendix 3 plate 29).

6.69 The majority of buildings within the CA, including the Grade II listed Cross Keys Public House (RPS 158), have no views southwards out of the CA towards the site and are scoped out of further assessment. However, it is possible that the top of the church tower may be distantly visible from the higher buildings within the site (such as the 15 storey block N in Phase 2B). There may also be distant views of the upper levels of the higher block/s from within the cemetery and from Church Lane, depending on whether they are screened by the roof lines of residences to the south side of the east-west alignment of Church Lane.

6.70 As a guide, the blades of the two Enercon E-66 model wind turbines at Fiesta Drive (south of the site) are visible from west of the church in the CA. According to the planning app. Ref. Z0010.08 on Havering planning search (although their actual application is P0524.03) these have a blade

diameter of 70m and hub height of 85m and a maximum height to tip of 120m. Therefore, it seems unlikely that there would be inter-visibility with the taller buildings at the site.

6.71 In summary given the short distance views of the CA, bracketed by adjacent modem structures of varying height and massing, roads and vegetation, the new blocks to be constructed at the site could result in Neutral/Negligible impact to the significance of the medium to high importance CA and the High importance church it contains during construction and operation (depending on whether the upper level of the highest 16 storey block is visible). The resulting effect on the importance of these assets is considered to be Negligible to Slight Adverse depending on degree of visibility.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.72 The finishing and colour palate of the tall buildings will help minimise visual harm. No further mitigation is proposed.

Step 5: make and document the decision and monitor outcomes.

6.73 NA

Potential Effect 5 - Bretons (Grade II*) and associated wrought iron screen with gates (Grade II) (RPS 173 & 177) (National List 1079875)

Introduction and significance

6.74 Bretons former manor house is a Grade II* listed building (see 173 & 177 on Fig. 2B, and Appendix 3, photos 36-38) The listed building description for Bretons is as follows:

'Late C17, rebuilt about 1740 retaining some features of earlier date. Three storeys, red brick, 5 flush framed sash windows with cambered heads, raised bands to front, cornice, parapet and triple hipped slate roof, end stacks. Central full height square projection over open Doric columned porch with entablature with shaped modillions; painted wood modillion cornice, pediment to front. Doorway with heavy wood rustications, 6 fielded panelled door and heavy wood barred radiating fanlight. Rear elevation 3 storeys, 5 windows, sashes with cambered heads, those on ground and first floor replaced by modern wooden casements. Central 6 fielded panelled door with cornice hood. Central round-headed staircase window. Single storey wings with tiled roofs projecting to right and left. Interior has black and white paved entrance hall with good late C17 round-headed archway of wood with cartouche; staircase also late C17 of robust design, heavy handrail, continuous string, twisted balusters with carved cups, square newels. Room to left: plain marble fireplace surround, modillion ceiling cornice; room to right: panelling to ceiling circa 1740, modern fireplace surround.'

6.75 There was a house on the site in from 1160. Bretons was probably named after the Le Breton family who owned land in Hornchurch beside the Beam in the 12th to 14th century period. The manor was associated with famous owners including William Ayloffe (JP for Essex and Suffolk) who had constructed the 4th house on the site in 1501. His family held the estate for the next 150 years, towards the end of which time date the also listed brick barns and walled garden were constructed.

6.76 Bretons was owned by John Hopkins (1683-1772) from 1742 who built the present house (re-using brick from the earlier houses). The house was sold to Romford Local Health Board and

used a sewage farm until 1968. In 1976 the farmland was developed as a Youth Centre and sports ground. Renovation of the house began and in December 1978 Bretons Sports and Social Club was opened.

6.77 The building is currently used by the social club (although it was still a working farm in living memory). Its high significance is due to its history associated with the former medieval manor and later owners, its elaborate architecture (especially the east facing façade which includes the Doric columned porch), re-use of materials recycled from previous incarnations of the manor house, and the well-preserved aspects of the interior.

6.78 The listed buildings of the complex therefore have evidential, historical, aesthetic and communal value (the latter due the social club use).

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.79 The immediate setting of Bretons can be defined as its walled garden and the associated historic buildings including railings and the boundary wall itself. The setting makes a moderate contribution to the significance of the establishment as it includes associated structures that allow its significance to be appreciated and may contain below ground archaeological remains that date back to the 12th century. These aspects of the setting allow the historical development of the site to be read.

6.80 The wider/extended setting of the complex includes the playing fields to the south, west and north which were originally elements of the associated farmland.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.81 The Bretons manorial complex is located c.2km to the north-east of the Phase 1 zone of the site. The industrial proposal site makes no contribution to the high significance of the complex.

6.82 The current view south from the south of the immediate setting of the walled compound towards the site (i.e. across the playing fields) is shown by Appendix 9.2 photo 39. This view shows the upper elements of the two wind turbines at Fiesta Drive south of the site above the tree line south of the playing fields. On this basis the tallest buildings at the site may be distantly visible from the upper storey of Bretons. However, as the buildings' main façade faces to the east its key aspect is not towards the site. The upper levels of the taller buildings may be distantly visible from ground level at the southern edge of the walled compound (i.e. of the immediate setting) and from upper windows of the narrow south-facing elevation of the listed building itself (see Appendix 3 plates 37 and 38). As a guide to potential inter-visibility, although part of the hub and blades of the two Enercon E-66 model wind turbines at Fiesta Drive are partially visible from the setting, these have a blade diameter 70m and hub height of 85m and a maximum height to tip of 120m (planning app. Ref. Z0010.08 on Havering planning search; although their actual application is P0524.03). On this basis there may be only limited or no inter-visibility with the taller block.

6.83 It is important to note that the key views of the complex are to the east and to the west (i.e. from the front and rear elevations) and there would be limited inter-visibility only of the taller elements of the new blocks at the site from the south facing aspect of the complex; the proposed development is also at considerable distance and there is some intervening vegetation cover.

The new proposed heights at Beam Park are therefore considered to result in a Negligible or Slight Adverse impact to this built heritage asset and a Slight Adverse overall effect.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.84 The finishing and colour palate of the tall buildings will help minimise visual harm. No further mitigation is proposed.

Potential Effect 6 - Sub Station of Essex Water Company (Grade II) (RPS 167) (National List 1358511)

Introduction and significance

6.85 The grade II listed 'South Hornchurch Sub-station of Essex Water Company' is located on the north side of Dagenham Road, Upminster c. 1.2km to the north of the site (see 167 on Figure 2B and Appendix 3. photos 41-43). The listed building description for Bretons is as follows:

'DAGENHAM ROAD 1. 5017 South Hornchurch Sub-station of Essex Water Company TQ 58 SW 11/9 II 2. After 1897. Italianate pumping station. 'T' plan stock brick with heavy bracketed cornice. Hipped slated roofs. Tall semi-circular headed windows and doors with rounded section label mouldings. Band course at the springing of the tall window openings. Semi-circular headed arch to the main entrance on the south front; steps up to this entrance.'

6.86 The medium to high importance is due to its elaborate confident architecture (aesthetic) and historical association with the Industrial Revolution.

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.87 The setting of the structure comprises its surrounding historic compound and the stream to its west side and the road it fronts onto the south. The setting has an insular feel and is enclosed by trees and buildings on all sides. The sub-station was constructed within an open landscape and this extended setting has been subsequently developed for residential use. The setting allows the former industrial function to be read an makes a moderate contribution to its importance. The extended setting makes little contribution to the importance.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.88 The former sub station is located at c.1.2km to the north of Phase 2 of the site. Screening vegetation and structures are located to the immediate south of the sub station and further high vegetation on the south side of Dagenham Road further screens views south. There is a glimpsed view of the blades level of one of the wind turbines at Fiesta Drive through vegetation on the south side, but this view is not likely to be visible or would be highly restricted from the listed building and its setting. The proposal site is not currently inter-visible with it and makes no contribution to its importance.

6.89 Allowing for the up to 15 storeys height of the structures there may be very slight inter-visibility with the upper levels of the tallest buildings but this is considered to be a Neutral/Negligible impact on the importance of the listed complex during construction and operation, and this would result in a Negligible/Slight Adverse overall effect.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.90 The finishing and colour palate of the tall buildings will help minimise visual harm. No further mitigation is proposed.

Potential Effect 7 - The Crossness Conservation Area (RPS 217) including Grade I Listed Pumping Station (RPS 169; National List 1064241)

Introduction and significance

6.91 The CA and associated pumping station is located on the south bank of the River Thames approximately 2.5km to the south-east of the site (Figure 9.1; Appendix 9.2 Plates 44-46). Crossness Pumping Station is of high importance due to its historical importance as an iconic building of the Industrial Revolution, hence its Grade I listing. The listing description as follows:

'BELVEDERE ROAD 1. 5005 Belvedere Crossness Pumping Station TQ 48 SE 1/1 24.6.70. I 2. 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 pilasters, 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 joined round headed windows. Interior: Important cast iron architectural treatment and 4 colossal beam engines by James Watt and Co. Reference: Architectural Review December 1969. Article by John Smith with photographs and engraving.'

6.92 The pumping station is central to the Crossness CA. The Crossness Conservation Area Appraisal and Management Plan (LB of Bexley February 2009). Includes the following description:

'The special architectural or historic interest that justifies designation of Crossness Conservation Area derives from the following features. This mid-Victorian example of public health engineering is a unique industrial complex set within a landscape/location selected by the then level of engineering technology. It is South East London's most important site for industrial archaeology.

The key elements that characterise the Conservation Area are: the Grade I Listed Crossness Pumping Station comprising the Beam Engine House, Boiler House and Triple Expansion House; the Grade II Listed workshops; and brick vaulted subterranean reservoir.

Other significant buildings include the storm water pumping station/centrifugal engine house and the precipitation engine house/boiler house group. Use of the complex for over 140 years has resulted in layers of industrial development that represent the evolution of the site. The buildings present important engineering development, in terms of landmark building design and surviving machinery. Spaces within the site, including the River Thames location and the surrounding remnants of the original rural landscape recall the importance of the location.

The site includes open spaces that have remained undisturbed for long periods, including mature trees, which contribute towards the biodiversity of the area…The Crossness Conservation Area is located in the north west of the London Borough of Bexley, which is situated 13 miles south east of central London. It is set within what was previously part of the Erith Marshes on the south bank of the River Thames at Halfway Reach. This remote site was chosen to take the sewage from

densely populated areas to a location on the River Thames where sewage could be released into the river immediately after high tide to be carried downstream and out to sea.

Landscape and setting

4.3 The historical river landscape topography of the site suggests that relatively little has changed in terms of land levels, particularly south of the buildings complex and along the western boundary. Open ditches survive, which could have formed part of a medieval field drainage system, which has characterised the marsh area since the embankment of the River Thames, probably during the 13th Century. Prior to which, the site consisted of tidal marshes.

4.4 The level top of the underground reservoir provides an important open aspect and setting for the buildings and a location for grasses which may contain relics of species which have been relatively undisturbed since the building of the works complex 143 years ago. Due to the open nature of the site, its relative remoteness from areas of population and its proximity to the River Thames, the site supports an interesting and undisturbed variety of flora and fauna as well as many intentionally planted trees, all of which continue to contribute to the character of the complex. There are some significant trees, particularly on the western part of the site, which contribute greatly to the character of the area.

4.5 The neighbouring modern office building and its lake provide landscape merit and form views from the conservation area.

4.6 The adjacent River Thames is now partially obscured by high flood defence levies but it remains crucial to understanding the historical site location and form….'

6.93 The listed buildings and conservation area have collective being, evidential, historical, aesthetic and communal 'heritage values' (the latter due to accessibility to the public).

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.94 The setting of the pumping station is defined by the CA and its key relationship to the River Thames. The Townscape Analysis Map shows that the 'significant views' are towards the CA and the pumping station site area from the Thames (rather than outwards across the Thames to the north bank) with the most significant views from the pumping station out onto its subterranean reservoir to its south side. The 2.5m to 3m high flood defence wall prevent views from ground level towards the site (see Appendix 9.2, Plate 46).

6.95 The CA appraisal states in relation to key views and vistas that:

'Within the Conservation Area there are significant views, including those of the Beam Engine House and other individual buildings. The river flood defence wall is 2.5-3m above land levels at this point and obscures views of the river from ground level at the Beam Engine House and partially obscures the views from the river, although there are good views of the buildings from the public footpath/cycleway running along the top of the wall. Because a view is not mentioned it is not because it is unimportant but rather that there are so many different views. Some significant views are marked on the attached Townscape Analysis Map...'.

6.96 The key views do not include long distance views to the site or from the site.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.97 The CA is located 2.2km to the south-west of the site. The site presently makes no contribution to the importance of the CA.

6.98 The tall buildings at the site may be distantly visible (over 2.5km away) from upper levels of the listed building, although Dagenham Engine Plant in the intermediate zone further reduces inter-visibility. There may be distant views from the upper storeys of the new blocks to the pumping station but these distant views across the river and the 20th century industrial landscape, are not considered to affect the significance of the CA, or the listed buildings within. This is due to an absence of historical links between the site and the CA and because the key views from the CA (which are from the river looking towards the upper levels of the pumping station and from the sea wall (Plate 46) and the golf course to the west) would not be affected. The impact and effect of the proposed development at the site during construction and operation is considered to remain Neutral in relation to the Phase 2B height increases.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.99 The finishing and colour palate of the tall buildings will help minimise visual harm. No further mitigation is proposed.

Potential effect 8 - Lesnes Abbey Scheduled Monument (RPS 150; National List 1002025)

Introduction:

6.100 The location of Lesnes Abbey c. 5km to the south-west of the proposal site is shown on Fig. 2B ('RPS 150'). The high importance of the Augustine Lesnes abbey derives from a shared character with all monasteries as nodal centres of worship, learning and charity as well as being large landowners with wide political influence. Some 225 religious houses were of the St Augustine order. Walled remains of the abbey, illustrating its layout, still survive between foundation level and up to a height of 2.5m (see Appendix 3, Plates 48-50). Archaeological significance is vested in both the above ground and below ground archaeological remains which may contain important artefacts and ecofacts that have potential to shed light on contemporary social, economic and environmental conditions (evidential information). The Scheduled Monument description also includes the following text:

"The walls and foundations of the abbey…are constructed of Kentish ragstone, flint and chalk. They include a pointed stone doorway and several lancet windows. To the south is the Abbey church, which is of cruciform plan with an aisled nave. The nave is approximately 70m long and 22m wide and the transept is about 43m long and 19m wide. Attached to the north end is the monastic complex. The west range consists of the brewhouse, kitchen and cellarer's building; the north range includes the frater; and the east range includes the sacristy, chapter house, parlour, dorter undercroft, and warming house. To the north of the east range is an extension containing the Abbots lodging and reredorter. East of the parlour is the infirmary with a chapel and misericord. In 1630, partial excavation of the monastic church was undertaken by Sir J Epsley. This was one of the earliest (if not the earliest) archaeological investigations in Greater London. The ground plan of the monastic complex was further revealed during partial excavations in the early 20th century, 1939-58 and in 1994.

The Augustinian Abbey of St Thomas the Martyr was founded in 1178 by Richard de Luci, Chief Justiciar of England. By the beginning of the 15th century the abbey had fallen into debt and disrepair, apparently due to misgovernance of the abbots. This is also likely to have been due to the costs and burden of draining the low-lying marshland and maintaining the river wall, given its location so near the Thames. Rebuilding work was carried out in the early 16th century but in 1524-5 the Abbey was suppressed by Cardinal Thomas Wolsey. In 1526 it was granted to Cardinal's College, Oxford. The Abbot's Lodging was retained and converted into a mansion house. It was demolished in 1844. In 1930, the site was acquired by London County Council and following partial excavation, the remains were preserved and opened to the public. The site came into the ownership of Bexley Council after 1986.

The upstanding remains are Grade II listed. ***"***

6.101 Steps 2-4 area assessed as follows:

Step 2: assess the degree to which these settings and views make a contribution to the significance of a heritage asset(s) or allow significance to be appreciated;

6.102 The abbey is situated on low-lying ground at the northern edge of Lesnes Abbey Woods. The immediate setting of the SM is constrained to the associated grounds and parkland of the abbey, including the area of Lesnes Abbey Woods to the south. Its extended setting was the adjacent grounds and agricultural landscape formerly owned by abbey, which are now largely built over (a detracting factor from the capacity for the extended setting to contribute to the monuments' significance). Long-distance views are dominated by modern buildings. The church at Rainham makes a minor contribution to its setting as a contemporary religious building, The abbey can only be appreciated fully from within its grounds.

Step 3: assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it;

6.103 No construction traffic will effect the Scheduled Monument.

6.104 The Site, as a distant brownfield zone on the opposite side of the Thames is not readable as part of the wider medieval agricultural landscape that was once distantly visible from the abbey. There does not appear to be a direct historical association with the Site which makes no contribution to the abbey's significance. The abbey is not currently visible from the Site.

6.105 A visit was undertaken to Lesnes Abbey on Monday 20th May 2019 and plates are provided (Appendix 3 Plates 48-50). The visit indicated that there may be glimpsed distant sight lines from the abbey to the higher buildings (up to 15 storeys within Phase 2B) (NB the majority of the abbey is set into the slope and therefore distant glimpsed views would be more likely on higher ground at the edges of the lower zone).

6.106 The proposed development would at most result in a very minor effect on peoples' ability to appreciate the importance of the abbey. The development may be distantly visible during construction of the upper storeys (including cranes) and during operation, but because the abbey has a relatively enclosed setting and much more proximate modern development already constricts views north eastwards towards the proposal site, the effects would be negligible. It is possible that the people living in the upper storeys of the proposed tall buildings of Phase 2 within the site will be able to see the abbey via a distant view. A Neutral/Negligible visual impact is

anticipated. The resulting effect on the importance is considered to be Negligible to Slight Adverse and not therefore significant in EIA terms.

Step 4: explore the way to maximise enhancement and avoid or minimise harm;

6.107 The finishing and colour palate of the tall buildings has been carefully considered to minimise visual harm. No further mitigation is proposed.

Step 5: make and document the decision and monitor outcomes.

6.108 NA at present.

Potential Impacts and Effects on Historic Landscape from Completed Development

Industrial Historic Landscape (Ford related structures) beyond the site

6.109 The existing site does not significantly contribute to the Medium importance/ sensitivity of the Engine Plant well to the south, the Low importance /sensitivity Former Ford Stamping Plant (Body Plant) to the immediate west, and the H-Building and the London-Tilbury Railway and other elements of the wider Ford works to the south (now under demolition). The Completed Development, with buildings up to 15 storeys, would not detract from people's ability to access and appreciate the importance of those remaining buildings and infrastructure from various public access vantage points. The visual impacts from the construction of the Completed Development to surviving unlisted Ford buildings in the vicinity are considered to be Negligible and the overall effect Negligible/Neutral.

7 SUMMARY AND CONCLUSION

7.1 Review of a range of archaeological and historical sources has provided information on the historical and archaeological background to the RM application Site for Phases 2A and 2B.

7.2 There are no designated heritage sites within the Site or within the 1km of the Site. An assessment of the setting of designated assets between one and five kilometres from the Site suggests that the construction of the tall structures for Phase 2 would have a negligible or slight effect on some of their settings (such as the Dagenham Village Conservation Area, Bretons and Lesnes Abbey), with some inter-visibility with some assets possible for high levels of the new structures. This low level of effect is due to the lack of historical associations between the assets and with the Site and the intervening distance and screening afforded by intermediate vegetation and built environment. The effects would not detract from peoples' ability to appreciate the significance of the various designated assets assessed in this report.

7.3 Archaeological evidence from stages of Phase 2 archaeological trenching and mitigation excavations, combined with geo-archaeological sub-surface topographical modelling (based on historic and project boreholes) combined with assessment of geo-archaeological boreholes and sediments sequences from the archaeological trenches, provides mitigation for the effects on the natural deposit sequence from piling, deep service construction and sediment compression from surcharging at the Site.

7.4 Desk-based study indicates that there was settlement activity within the wider Study Area during the prehistoric periods, but the investigations within the Phase 2 Site itself have demonstrated only marginal activities were taking place due to its marshland geography and hydrology.

7.5 Prehistoric and later settlement tends to have been concentrated along river valleys and this is reflected by Iron Age and Roman occupation sites located by the Beam Washlands and Mardyke Estate excavations, to the north of the Site. These were at higher elevations upstream would have been less prone to severe flooding than at the lower lying Site.

7.6 The Site overlays LBBD and LBH Archaeological Priority Areas. These reflect the potential of alluvium and peat to seal archaeology and to preserve organic remains such as wooden/brushwood trackways. Such potential was explored by the trenching and mitigation stages. Whilst it has been possible to provide a detailed sub-surface topographical map of the underlaying Pleistocene terrace gravels, Mesolithic Lower Alluvium, Neolithic to Bronze Age peat and late prehistoric and Roman Upper alluvium, no prehistoric sites or structures (such as wooden trackways) were encountered.

7.7 A generally low potential for archaeology was confirmed for the Phase 2 Site comprising only sporadic artefacts, including a probable Bronze Age pottery sherd associated with a possible fragment of prehistoric land-surface, an stray human fibula and a deer tibia from the peat in Area 2 and a very small collection of worked an burnt flint from the peat in Area 3 to the west of the Beam.

7.8 One much more significant indicator of the kind of activities that were undertaken in the marginal marshland, was identified in Area 3 near the edge of the gravel terrace followed by the adjacent New Road alignment to the north. The mitigation found a naturally fallen Yew tree had had its upper exposed section of trunk notched using early metal tools (potentially of copper). The

reason for the notching is considered most likely due to the technique of trunk hollowing for the production of a log boat, a coffin or trough, should the process have been abandoned, perhaps due to the unsuitability of the particular Yew. Alternatively, as Yew has ritualistic connotations in many cultures due to its very long lifespan, ability to regenerate and its poisonous wood, bark, leaves and fruit it is possible that the notches has a symbolic motivation. In this context it is notable that it is derives from the same period as the Dagenham Idol which was also found /deposited in peat at the marsh edge, c.750m west of Beam Park, and which certainly had ritual connotations in both its manufacture (potentially also from Yew) and from its analogous deposition in liminal/ marginal marshland. This item was removed and its therefore no longer an asset within Phase 2. The worked section of the tree is currently being conserved at York University ahead of display at Vallance House Museum in the LBBD.

7.9 Notwithstanding the above, the other Phase 2 trenches found no evidence later prehistoric and later archaeology close to the present Site. This in part reflects that during the Neolithic/Bronze Age and subsequently the Site would have lain in marshland or in salt marsh pasture next to the river.

7.10 Historic Building Recording has taken place for the former 1950's Ford related structures on Beam Park Phase 2 (Appendix 2) which allows these low significance structures to be removed ahead of surcharging and construction.

7.11 Given the ground impacts below 2-3m (top of the prehistoric marsh) will be mainly limited to piling, it is anticipated that GLAAS will advise the LPA's that the consent for the current proposals will not require specific conditions for further archaeological work.

8 SOURCES

Batchelor, C.R. Middle Holocene environmental changes and the history of yew woodland in the Lower Thames Valley 2009. PHD thesis.

Bennell, M. 1998. Under the Road – Archaeological Discoveries at Bronze Age Way, Erith. Bexley Council.

British Geological Survey British Regional Geology London and the Thames Valley Fourth Edition 1996

Brown, J. 2009. London Railway Atlas 2nd Edition

Burgess-Wise, 2001. D. Ford at Dagenham

CIfA, 2014, *Standard and Guidance for archaeological desk-based assessment*

CLG 2010, PPS 5, Planning for the Historic Environment: Historic Environment Planning Practice Guide

Cherry, O'Brien & Pevsner 2005. The Buildings of England: London East

Curtis, S. 2000. Dagenham & Rainham Past

Corcoran. J, Halsey, C, Burton, E and Jamieson, D. 2011. Mapping past landscapes in the lower Lea Valley: A geoarchaeological study of the Quaternary sequence. MOLA Monograph 55.

DCLG, 2012, The National Planning Policy Framework

DCMS 2013, Scheduled Monuments & nationally important but non-scheduled monuments

English Heritage, 2011, *The Setting of Heritage Assets*

English Heritage, 2008, *Conservation Principles. Policies and Guidance for the Sustainable Management of the Historic Environment*

Essex County Council, English Heritage, Kent County Council 2010. The Greater Thames Estuary: Historic Environment Research Framework 2010: Update and Revision of the Archaeological Research Framework for the Greater Thames Estuary (1999).

Greater London Archaeological Advisory Service 2015. Guidelines for Archaeological Projects in Greater London April unpublished document

Historic England July 2015. Historic Environment Good Practice Advice in Planning: 1 The Historic Environment in Local Plans unpublished document

Historic England July 2015. Historic Environment Good Practice Advice in Planning: 2 Managing Significance in Decision-Taking in the Historic Environment unpublished document

Historic England July 2015. Historic Environment Good Practice Advice in Planning: 3 The Setting of Heritage Assets unpublished document (& GPA 3 Updated 2017)

Historic England Understanding Historic Buildings. A Guide to Good Recording Practice. 2016

Margary, I, 1955, Roman Road in Britain. Vol 1. South of the Foss Way-Bristol Channel

http://magic.defra.gov.uk/

Meddens, F.M. and McGowan, K. 1994. The archaeology of the Alluvium at Barking, a desk-top study 1994. Unpublished report for Barking and Dagenham Borough Council.

Mills, A.D. A Dictionary of London Place Names 2011

MoLAS/English Heritage The Archaeology of Greater London: An Assessment of archaeological evidence for human presence in the area now covered by Greater London 2000

PBA (Peter Brett), 2017. Beam Park London Boroughs of Barking and Dagenham, and Havering Environmental Statement. Volume 1: Main Report. (Chapter 13 Archaeology and Cultural Heritage)

Powell, W.R. 1966. A History of the County of Essex Volume 5

Powell, A.B. 2012. By River, Fields and Factories: The Making of the Lower Lea Valley. Archaeological and cultural heritage investigations on the site of the London 2012 Olympic and Paralympic Games. Wessex Archaeology Report No. 29

Pre Construct Archaeology (PCA) May 2017. Beam Park Riverside Phases 1 and 2. An Archaeological Evaluation. Unpub report.

PCA, September 2017, Beam Park Riverside: Written Scheme of Investigation for Phase 1 Archaeological Mitigation.

PCA (Edmonds, M.) December 2017a, Beam Park Riverside Phase 2, Thames Avenue, London Borough of Barking and Dagenham an archaeological evaluation.

PCA December 2017b, Built Heritage Recording at the former Ford PTA (Paint, Trim, Assembly Plant) site, Beam Park, New Road (A1306), London Borough of Havering/Barking and Dagenham

PCA (Edmonds, M.) January 2018, Beam Park Riverside: Written Scheme of Investigation for Phase 2 Archaeological Mitigation

PCA (Edmonds, M.) 2018. Beam Park Riverside Phase 2 West, Thames Avenue, London Borough of Barking and Dagenham an archaeological evaluation. PCA unpublished client report.

PCA, December 2018. An Assessment of Archaeological Excavations at Beam Park Riverside (Phases 1 & 2): Thames Avenue, London Borough of Barking and Dagenham & London Borough of Havering, RM9 6DE

QUEST, March 2017a. Beam Park Riverside (Phase 1 Surcharging), London Borough of Havering, Desk-Based Geoarchaeological Deposit Model Report.

QUEST, March 2017b Beam Park Riverside, London Boroughs of Havering and Barking & Dagenham. Desk-Based Geoarchaeological Deposit Model Report

QUEST, January 2018. Beam Park Riverside (Phase 1 Surcharging), London Borough of Havering, Updated Geoarchaeological Deposit Model Report.

QUEST, February 2018. Beam Park Riverside (Phase 2), London Borough of Havering and Barking & Dagenham. Geoarchaeological Deposit Model Report

QUEST December 2018. Beam Park Riverside (Phase 2), London Borough of Havering and Barking & Dagenham. Environmental Archaeological Assessment Report.

RPS 2017. Beam Park Riverside, Havering/Barking & Dagenham. An Historic Environment Desk Based Assessment

RPS September 2017. Beam Park London Riverside, Archaeological Strategy and Scheme of Resource Management.

RPS Jan 2018 (draft) Beam Park London Riverside, Archaeological Strategy and Scheme of Resource Management (updated following Phase 1 mitigation and Phase 2 trial trenching)

RSK June 2016. Beam Park Dagenham. Controlled Waters Risk Assessment. 2874-R02

RSK July 2016. Beam Park Dagenham. Geotechnical Assessment. 28474-R3

RSK, December, 2018 Beam Park, Dagenham - Phase 2 Environmental Site Assessment Report

Sidell, J., Cotton, J. Rayner, L, and Wheeler, L. 2002. The prehistory and topography of Southwark and Lambeth. MoLAS Monograph 14. 2002.

Shawcross J.P 1908. A History of Dagenham in the County of Essex

Thomas, C, and Rackham, J (eds), 1996 Bramcote Green, Bermondsey: a Bronze Age trackway and palaeo-environmental sequence, Proc Prehist Soc. 62, 221-53.

Walford, E. 1883/4. Village London: North & East

Ward, G.K. and Wilson, S.R., 1978. Procedures for comparing and combining radiocarbon determinations: a critique, Archaeometry 20, 19-31.

Weinreb, Hibbert, Keay & Keay (eds.) 2008. The London Encyclopaedia 3rd Edition

Wymer 1999. The Lower Palaeolithic Occupation of Britain 2 volumes 1999

Yates, D, 2007. Land, power and prestige. Bronze Age field systems in Southern England. Oxbow Books

Cartographic

1777 John Chapman & Peter Andre’s Map of Essex

1799 Ordnance Survey Drawing

1841 Dagenham Tithe Map

1848 Hornchurch and Romford Tithe Map

1864 Ordnance Survey (1:2500)

1897 Ordnance Survey (1:2500)

1920 Ordnance Survey (1:2500)

1939 Ordnance Survey (1:2500)

1945 Google Earth Image

1950-61 Ordnance Survey (1:2500)

1975-6 Ordnance Survey (1:2500)

Phase 2 Boundary

Access Road Area

N

MAKING COMPLEX EASY

Scale at A4: 1:10,000

0 300 m

Figure 1:
Site Location -
Phase 2 Enabling Works

© Crown copyright, All rights reserved. 2019 License number AL 100014723, 0100031673, 10001998, 100048492.
Contains Ordnance Survey data © Crown copyright and database right 2019.

DAGENHAM
N
South Hornchurch
Dagenham Breach
Thames Gateway Park
Gorestrook Park
Binary Park
Horse Shoe Corner
Suttons Business Park
Mudlands Industrial Estate
Rainham Creek
Beam River
Thames Avenue
Car Compound
Car Compounds
Helipad
Wind Generator
Dock
Wharf
Bus Depot
Waste Transfer Station
Power Station
Bus Terminal
Fire Station
Beam Bridge
Newtons Schools
Warehouse
Works
College
Industrial Estate
Timber Yard
Depot
Superstore
Playground
Sacred ground
Overflows
Sta
Sch
Schs
PW
Wks
Hosp
Cvt
Liby Hall
Beam Primary School
Thunderer Road
Perry Road
Dagenham Avenue
Rainham Road South
Oval Road North
Oval Road South
Arnold Road
Orchard Road
Church Lane
Moss Rd
Langhorne Road
Lymore Road
Wellington Drive
Canberra Crescent
Beam Way
Beam Avenue
Beam Park Avenue
Beam Reach
Beam Hall Road
Beam Park Lane
Rivers Way
Marsh Way
Frog Lane
Arterial Road
Rainham Road
Gale Road
Gibbs Avenue
Gordon Avenue
Gordon Gardens
Gordon Road
Gordon Way
Gorseway
Gosfield Road
Gosfield Gardens
Gosfield Close
Gosfield Way
Gosfield Avenue
Gosfield Crescent
Gosfield Drive
Gosfield Road

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 2b Desig Assets.mxd

Legend

- Phase 2 Boundary
- Access Road
- Search Radius 5km
- Scheduled Monument
- Listed Building Grade I
- Listed Building Grade II*
- Listed Building Grade II
- Conservation Area

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 2b

Designated Heritage Assets within 5km of Site Centre

Scale: 1:40,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	RPS, Historic England 2019
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road
- Search Radius 1km

HLC

- Industry
- Open Countryside
- Public Open Spaces
- Inter-war suburbs

rps MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 3

Historic Landscape Characterisation

Scale: 1:11,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	RPS, GLHER 2017
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 3 HLC.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary (Approximate Location)
- Access Road

rps MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 4

1777 John Chapman & Peter Andre's Map of Essex

Scale: 1:10,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 4.mxd

Legend

- Phase 2 Boundary (Approximate Location)
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 5

1799 Ordnance Survey Drawing

Scale: 1:7,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 5.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary (Approximate Location)
- Access Road

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 6

1841 Dagenham Tithe and 1848 Hornchurch & Romford Tithe maps

Scale: 1:5,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 6.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 7

1864 Ordnance Survey (1:2500)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 7.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 8.mxd

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 8

1897 Ordnance Survey (1:2500)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 9.mxd

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 9

1920 Ordnance Survey (1:2500)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 10.mxd

Legend

- Phase 2 Boundary
- Access Road

rps MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 10

1939 Ordnance Survey (1:2500)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 11.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 11

1950-61 Ordnance Survey (1:10,560)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright. All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 12

1975-6 Ordnance Survey (1:10,000)

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 12.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 13

1999 Google Earth image

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 13.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 14

2006 Google Earth image

Scale: 1:2,500 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 14.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 15

2015 Google Earth image

Scale: 1:2,500 @A3

Job Ref: -
Drawn: MP
Checked: RM
Status: DRAFT
Date: Jan 2019

Data Sources:
-

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 15.mxd

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 16

The Ford Motor Company Dagenham Estate c.1971

Scale: Not to Scale - Illustrative Only

Job Ref:	-	Data Sources:
Drawn:	MP	-
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 16.mxd

Legend

- Phase 2 Boundary
- Access Road

0 50 100m

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 17.mxd

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 17

Historic Building Survey Structure Location Plan

Scale: 1:5,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	PCA 2017
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

0 50 100m

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 18.mxd

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 18

Location of the geoarchaeological and geotechnical boreholes, archaeological evaluation trenches and mitigation areas 2 & 3

Scale: 1:2,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	QUEST 2018
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

0 50 100m

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 19.mxd

Legend

MAKING COMPLEX EASY

Project:	Dagenham
Client:	-

Figure 19

Thckness of peat (m)

Scale: 1:2,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	QUEST 2018
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

© Crown copyright, All rights reserved. 2019 License number 0100031673, 10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019

Legend

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 20

Plan of mitigation area 3 showing worked yew [215]

Not to Scale - Illustrative Only

Job Ref:	-	Data Sources:
Drawn:	MP	QUEST 2018
Checked:	RM	
Status:	DRAFT	
Date:	Jan 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 20.mxd

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 21

Parameter Plan Development phases S73 and LBBD Phase 2B RMA

Scale: 1:5,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	Patel Taylor 2019
Checked:	RM	
Status:	DRAFT	
Date:	Jun 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 21.mxd

Legend

- Phase 2 Boundary
- Access Road

MAKING COMPLEX EASY

Project: Dagenham
Client: -

Figure 22

Parameter Plan building heights

Scale: 1:5,000 @A3

Job Ref:	-	Data Sources:
Drawn:	MP	Patel Taylor 2019
Checked:	RM	
Status:	DRAFT	
Date:	Jun 2019	

rpsgroup.com

Project Ref: N:\22000-22999\22853 - Beam Park\Figures\Mapping\GIS\Projects\190104 Phase 2 Construction\Figure 22.mxd

APPENDIX 1

GLHER Database

Archaeological Priority Areas

RPS_no	DesigUID	PrefRef	Record Type	Name	MonType	DateRange	PeriodRang	Finds	Description
3	DLO33196	DLO33196	APZ	Alluvium Deposits (Geology)					Potential prehistoric deposits may be buried beneath alluvial deposits. Alluvium deposits can be con
2	DLO33198	DLO33198	APZ	Gravel Sand Deposits (Geology)					Potential prehistoric deposits may be buried beneath gravel deposits.
70	DLO37897	DLO37897	Tier II	Ripple Road					This Archaeological Priority Area covers a corridor of archaeological pote
71	DLO37898	DLO37898	Tier II	Beam Valley Country Park					Beam Valley Country Park has been designated as a Tier 2 archaeological pr
72	DLO37899	DLO37899	Tier II	Old Dagenham Park					Old Dagenham Park has been identified as a Tier 2 Archaeological Priority
73	DLO37927	DLO37927	Tier III	Barking Level and Dagenham Marsh					The Barking Level and Dagenham Marsh Archaeological Priority Area covers t
74	DLO37948	DLO37948	Tier I	Beam Wantz Confluence					The Beam Wantz Confluence has been designated as a Tier 1 Archaeological P

GLHER Monument Records

RPS_no	DesigUID	PrefRef	Record Type	Name	MonType	Date Range	Period Range	Finds	Description
4	MLO76032	MLO76032	MON	11-113 New Road	DITCH	500000 BC to 42 AD	Prehistoric		
5	MLO47522	060618/01/00	FS	NEW RD	PEAT, FINDSPOT, FINDSPOT, FINDSPOT, FINDSPOT, FINDSPOT, FINDSPOT	500000 BC to 1900 AD	Lower Palaeolithic to 19th Century	ANIMAL REMAINS (Undated), PLANT REMAINS (Undated)	
6	MLO3374	060083/00/00	FS	WALDEN AVE RAINHAM	FINDSPOT	10000 BC to 4001 BC	Mesolithic	BLADE (Mesolithic)	
7	MLO76043	MLO76043	MON	15-17 New Road,	PIT	10000 BC to 42 AD	Early Mesolithic to Late Iron Age		
8	MLO99492	MLO99492	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Mesolithic flint scatters}	FLINT SCATTER	10000 BC to 7001 BC	Early Mesolithic	BLADE (Mesolithic), CORE (Mesolithic), DEBITAGE (Mesolithic), FLAKE (Mesolithic)	Two concentrations of early Mesolithic worked flint were found through excavations at Beam Washlands, Dagenham, by Oxford Archaeology between 2005 and 2006. The flint assemblage included blades, flakes and cores.
9	MLO99493	MLO99493	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Neolithic/Bronze Age Peat}	PEAT	3000 BC to 1501 BC	Late Neolithic to Early Bronze Age	LEAF ARROWHEAD (Early Neolithic to Late Bronze Age), FLAKE (Early Neolithic to Late Bronze Age), BLADE (Early Neolithic to Late Bronze Age), DEBITAGE (Early Neolithic to Late Bronze Age), CORE (Early Neolithic to Late Bronze Age), END SCRAPER (Early Neol	A borehole sample of peat from the embankment, just to the north of the current Wantz Stream channel, has been radiocarbon dated to the Neolithic to early Bronze Age.
10	MLO61540	062124/00/00	MON	KENT AVE	PEAT, PEAT	2200 BC to 701 BC	Bronze Age		
11	MLO76886	MLO76886	MON	15-17 New Road	POST HOLE, POST HOLE, POST HOLE	1000 BC to 701 BC	Late Bronze Age		
12	MLO99830	MLO99830	FS	South Hornchurch, Havering {Bronze Age Site}	FINDSPOT	1000 BC to 701 BC	Late Bronze Age	SHERD (Late Bronze Age), INGOT (Bronze Age)	Two body sherds of a flint tempered ware found in the topsoil in close association with two socketed axeheads and a fragment of bronze plate ingot.
13	MLO78367	MLO78367	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Middle Iron Age activity}	DITCH, KILN?, PIT, BURNT MOUND?, POST HOLE	400 BC to 101 BC	Middle Iron Age	BURNT FLINT (Middle Iron Age), POTTERY (Middle Iron Age to Late Iron Age), KILN WASTE (Middle Iron Age), SLAG (Middle Iron Age), STRUCK FLINT (Middle Iron Age to Late Iron Age)	Possible Middle Iron Age ditch termini were found through excavation carried out by Oxford Archaeology in 2005 at the site of Beam Washlands, Dagenham. Further work in 2005-6 uncovered further features dated to the Middle Iron Age, including a ditch and
14	MLO78368	MLO78368	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Roman settlement site}	DITCH, RECTILINEAR ENCLOSURE, TRACKWAY, POTTERY KILN, CREMATION CEMETERY, ENCLOSED SETTLEMENT, CREMATION, BOUNDARY DITCH, POST HOLE, FENCE, STRUCTURE, PIT, GULLY, FLOOR, STOCK ENCLOSURE, WATERHOLE, FUNERAL PYRE, WELL, ENCLOSURE, STAKE HOLE, BOUNDARY DITC	400 BC to 409 AD	Middle Iron Age to Roman	POTTERY (Roman), HUMAN REMAINS (Middle Iron Age to Roman), DAUB (Roman), CINERARY URN (Late Iron Age to Roman), BRICK (Roman), KILN FURNITURE (Roman), NAIL (Roman), UNIDENTIFIED OBJECT (Roman), BROOCH (Roman), WIRE (Roman), QUERN (Roman), ANIMAL REMAINS	A Roman settlement site was identified by Oxford Archaeology during investigations in 2005-6. The site appears to have an industrial area to the north and an agricultural element to the south, which is in the same area as a cremation cemetery.
15	MLO100511	MLO100511	MON	Lowen Road/Walden Avenue [Mardyke Estate], London, RM13 {Roman pit and Postholes}	PIT, POST HOLE	43 AD to 409 AD	Roman	LID (Roman), POTTERY (Roman), BRICK (Late Iron Age)	A Roman pit and two postholes were located during trial excavations at the Mardyke Estate, Rainham by Pre-Construct Archaeology in 2008.
16	MLO24006	060082/00/00	MON	WALDEN AVE RAINHAM	FARMSTEAD, OCCUPATION SITE	43 AD to 409 AD	Roman		
17	MLO99519	MLO99519	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Anglo Saxon gully and pit}	GULLY, PIT	410 AD to 750 AD	Early Medieval/Dark Age	POTTERY (Early Medieval/Dark Age)	A possible Anglo Saxon gully and a pit were found through excavation at the site of Beam Washlands, Dagenham, by Oxford Archaeology between 2005 and 2006.
18	MLO22762	MLO22762	FS	Lower Mardyke Avenue, South Hornchurch, Havering {Medieval finds}	FINDSPOT	1066 AD to 1539 AD	Medieval	TOKEN (Medieval), FIGURINE (Medieval)	A medieval figurine and tokens were recovered from a site located close to the River Beam.
19	MLO104744	MLO104744	MON	Leys Avenue [Old Dagenham Hospital], Dagenham, Barking and Dagenham {site of Isolation Hospital}	INFECTIOUS DISEASES HOSPITAL, HOSPITAL	1899 AD to 1989 AD	19th Century to Modern		An isolation hospital opened in 1899 from Smallpox cases, it later become a specialist TB hospital.
20	MLO23020	060019/00/00	MON	KENT AVE RAINHAM	HUMAN REMAINS	1540 AD to 1900 AD	Post Medieval		
21	MLO26078	060548/00/00	MON	DAGENHAM OLD PARK	MANOR HOUSE, MANOR HOUSE	1066 AD to 1900 AD	Medieval to Post Medieval		
22	MLO26318	060612/00/00	MON	KENT AVE	LAKE	1540 AD to 1900 AD	Post Medieval		
23	MLO26319	060618/00/00	MON	NEW RD DAGENHAM BREACH	DAM	1540 AD to 1900 AD	Post Medieval		

RPS_no	DesigUID	PrefRef	Record Type	Name	MonType	Date Range	Period Range	Finds	Description
24	MLO26627	MLO26627	MON	Lower Mardyke Avenue, South Hornchurch, Havering {site of a post medieval farmhouse}	FARMHOUSE	1485 AD to 1849 AD	15th Century to 19th Century		The site of a 15th-16th century farmhouse which was probably demolished in the mid 19th century.
25	MLO69215	062600/00/00	MON	KENT AVE	SLUICE, WATER CHANNEL, BOAT UNCLASSIFIED	1540 AD to 1900 AD	Post Medieval		
26	MLO72421	062709/00/00	MON	THAMES AVE (FORD SLAG BANK)	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
27	MLO72424	062712/00/00	MON	DAGENHAM DOCK	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
28	MLO72730	062721/00/00	MON	HORNCHURCH MARSHES (COOLING PONDS	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
29	MLO72731	062722/00/00	MON	HORNCHURCH MARSHES (SETTLING LAGOONS)	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
30	MLO76913	MLO76913	MON	11-113 New Road	PLOUGH SOIL	1540 AD to 1900 AD	Post Medieval		
31	MLO7989	060616/00/00	MAR	KENT AVE	BOAT UNCLASSIFIED, BOAT UNCLASSIFIED, DUMP	1540 AD to 1900 AD	Post Medieval		
32	MLO8028	060677/00/00	MON	FORD CAR COMPOUND HORNCHURCH	LAKE	1540 AD to 1900 AD	Post Medieval		
33	MLO99520	MLO99520	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Post medieval ditches}	DITCH, FLOOD DEFENCES	1540 AD to 1900 AD	Post Medieval	POTTERY (Post Medieval), CBM (Post Medieval), ROOF TILE (Medieval to 19th Century), WINE BOTTLE (19th Century), BOTTLE (19th Century), BEAKER (19th Century), ANIMAL REMAINS (Post Medieval)	Post medieval ditches were found through excavation at the site of Beam Washlands, Dagenham, by Oxford Archaeology between 2005 and 2006.
34	MLO106941	MLO106941	PK	Marsh Green Road, [King George's Field]. Dagenham, Essex, RM10 {mid-20th century public park}	PLAQUE	1953 AD to 2050 AD	Modern		King George's Field is a small public recreaton ground laid out in 1953 by Dagenham Borough Council with a grant from the King George's Fields Foundation.
35	MLO106943	MLO106943	PK	Vicarage Road/Ballards Road/Siviter Way, [Old Dagenham Park], Dagenham, RM10 {20th century public park}	PUBLIC PARK, CHILDRENS PLAYGROUND, DRINKING FOUNTAIN, BANDSTAND, FLOWER GARDEN, BOWLING GREEN, STADIUM	1931 AD to 2050 AD	Modern		Old Dagenham Park is a public park that opened in 1931, then called Dagenham Park, laid out on land that was once part of the Manor of East Hall.
36	MLO106950	MLO106950	PK	Ballards Road, [The Leys], Dagenham, RM10 {20th century public park}	PARK	1928 AD to 2050 AD	Modern		In 1928 the local authority purchased land to create a new public park, Dagenham Park. This is now separated into two distinct parts, Old Dagenham Park to the northwest and The Leys to the southeast, the latter former meadowland of Leys Farm.
37	MLO72752	MLO72752	MON	Dagenham Road, South Hornchurch, Havering {Landfill site}	LANDFILL SITE	1540 AD to 1950 AD	Post Medieval to Modern		The site of a former landfill site.
38	MLO76494	MLO76494	MON	Princess Bowl	PLOUGH SOIL	1901 AD to 2000 AD	Modern		
39	MLO76888	MLO76888	MON	15-17 New Road	DRAIN	1901 AD to 2050 AD	Modern	BLADE (Early Mesolithic to Late Neolithic)	
40	MLO60151	062088/00/00	MON	CHEQUERS LA	PEAT				
41	MLO76885	MLO76885	MON	15-17 New Road	POST/STAKE HOLE ALIGNMENT				
42	MLO76887	MLO76887	MON	15-17 New Road	PLOUGH SOIL				
43	MLO78369	MLO78369	MON	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham {Undated pits and ditches}	DITCH, PIT, FIELD BOUNDARY?, POST HOLE, TRACKWAY?				Undated ditches and pits were located during a investigations at the Beam Washlands by Oxford Archaeology in 2005-6.
75	MLO102689	MLO102689	MON	School Road, [Dagenham Park Community School], RM10 9XX {Prehistoric pit}	PIT, POST HOLE	500000 BC to 42 AD	Prehistoric		A pit or post hole or possible Prehistoric date was recorded during a watching brief at Dagenham Park Community School by Pre-Construct Archaeology in 2010.
76	MLO76172	MLO76172	MON	Manor Way/Consul Avenue, Hornchurch Marshes, Dagenham	PEAT, ALLUVIUM	500000 BC to 42 AD	Prehistoric		
77	MLO76924	MLO76924	MON	Hornchurch Marshes	DEPOSIT, PEAT	500000 BC to 42 AD	Prehistoric		
78	MLO77561	MLO77561	MON	ON LAND AT DIGBY GARDEN ALLOTMENTS, DAGENHAM	DITCH	500000 BC to 42 AD	Prehistoric		
79	MLO103504	MLO103504	MON	School Road [Dagenham Park Community School], Dagenham, Barking and Dagenham, RM10 {Undated features}	POST HOLE, DITCH, PIT, GULLY, BOUNDARY DITCH?, BANK (EARTHWORK), BURIED SOIL, DITCH	500000 BC to 1501 BC	Lower Palaeolithic to Early Bronze Age	BURNT FLINT (Undated)	A number of undated features were identified during excavations at Dagenham Park Community School in 2010-11 by Wessex Archaeology.
80	MLO105893	MLO105893	MON	Choats Road [Chinook Urban Mining Facility], Dagenham, Barking and Dagenham, RM9 {Peat deposits}	PEAT	7000 BC to 1501 BC	Late Mesolithic to Early Bronze Age		A layer of wood peat deposit, of a Mesolithic to Early Bronze Age date, was found at a site on Choats Road during an evaluations in 2000 and 2013.
81	MLO103505	MLO103505	MON	School Road [Dagenham Park Community School], Dagenham, Barking and Dagenham, RM10 {Neolithic pit}	PIT?, POST HOLE?	4000 BC to 2201 BC	Neolithic	POTTERY (Early Neolithic)	A probable Neolithic pit or posthole was located during excavations at Dagenham Park Community School in 2010 by Wessex Archaeology.
82	MLO107515	MLO107515	MON	Merrielands Crescent [Orion Park South Dagenham West], RM9 {peat}	PEAT	4000 BC to 2201 BC	Neolithic		Museum of London Archaeology undertook geoarchaeological assessment at Merrielands Crescent in August 2013. Five facies were identified from Pleistocene floodplain gravels through early Holocene sands and clays to peats, estuarine muds, and modern made g
83	MLO5743	060178/00/00	FS	Merrielands Crescent, Dagenham {The Dagenham Idol}	FINDSPOT	4000 BC to 2201 BC	Neolithic	FIGURINE (Neolithic)	
84	MLO107512	MLO107512	MON	Chequers Lane [Freightliner Rail Services Scrapyard], RM9 {peat}	PEAT	2200 BC to 1539 AD	Early Bronze Age to Medieval		Peat was encountered in a sequence of alluvium and peat with palaeobotanical macrofossils.
85	MLO59097	062037/00/00	MON	POOLES LA	CAUSEWAY	2200 BC to 701 BC	Bronze Age		
86	MLO59100	062038/00/00	MON	POOLES LA	PEAT	2200 BC to 701 BC	Bronze Age		
87	MLO61548	062128/00/00	MON	CREEKSIDE	WATER CHANNEL, WATER CHANNEL	2200 BC to 701 BC	Bronze Age		
88	MLO77972	MLO77972	MON	FORMER MANSER WORKS, 137-139 NEW ROAD, RAINHAM	PIT, STAKE HOLE, POST HOLE	1600 BC to 701 BC	Middle Bronze Age to Late Bronze Age		

RPS_no	DesigUID	PrefRef	Record Type	Name	MonType	Date Range	Period Range	Finds	Description
89	MLO98232	MLO98232	MON	School Road, [Dagenham Priory Comprehensive School], Dagenham, Barking and Dagenham {Late Bronze Age to Early Iron Age features}	ENCLOSURE, DITCH, POST HOLE, SALT WORKS, BOUNDARY DITCH, PIT, BURIED LAND SURFACE, GULLY, DRAINAGE DITCH, RUBBISH PIT	1600 BC to 401 BC	Middle Bronze Age to Early Iron Age	POTTERY (Early Neolithic to Early Iron Age), UNIDENTIFIED OBJECT (Middle Bronze Age to Late Bronze Age), FLAKE (Prehistoric), BLADE (Prehistoric), SCRAPER (TOOL) (Prehistoric), BURNT FLINT (Prehistoric), POTTERY (Late Bronze Age to Early Iron Age), BRIQU	An archaeological investigations at Dagenham School uncovered evidence of a Late Bronze Age to Early Iron Age buried landscape. A possible buried land surface produced numerous sherds of Late Bronze Age and Early Iron age pottery. A probable Late Bronze
90	MLO26030	060002/00/00	MON	MANSER ST SOUTH HORNCHURCH	INHUMATION, CEMETERY, CREMATION CEMETERY	43 AD to 409 AD	Roman	BURIAL URN (Roman), FUNERARY FINDS (Roman), CUP (Roman), VESSEL (Roman)	
91	MLO55890	060002/01/00	MON	MANSER RD WEST SIDE SOUTH	COFFIN	43 AD to 409 AD	Roman		
92	MLO55891	060002/02/00	MON	MANSER RD WEST SIDE SOUTH	CREMATION CEMETERY	43 AD to 409 AD	Roman		
93	MLO56345	060002/01/001	FS	MANSER RD WEST SIDE SOUTH	FINDSPOT, FINDSPOT, FINDSPOT	43 AD to 409 AD	Roman		
94	MLO103503	MLO103503	MON	School Road [Dagenham Park Community School], Dagenham, Barking and Dagenham, RM10 {Post Medieval ditchs and assocaited features}	DITCH, DRAINAGE DITCH?, HEDGE?, POST HOLE, FENCE?, PIT	1540 AD to 1900 AD	Post Medieval	POTTERY (Post Medieval), ROOF TILE (Post Medieval), BRICK (Post Medieval), NAIL (Post Medieval), UNIDENTIFIED OBJECT (Post Medieval), ANIMAL REMAINS (Post Medieval), CLAY PIPE (SMOKING) (Post Medieval)	A number of Post Medieval ditches and assocaited features were located at Dagenham Park Community School during investigations in 2010 by Wessex Archaeology.
95	MLO10843	060180/00/00	MON	RIPPLE ROAD	FARMHOUSE	1540 AD to 1900 AD	Post Medieval		
96	MLO1434	060534/00/00	MON	RIPPLE RD	FLOOD DEFENCES, FLOOD DEFENCES	1066 AD to 1900 AD	Medieval to 19th Century		
97	MLO14529	061477/00/00	MON	MANOR WAY HORNCHURCH	HOUSE, HOUSE	1485 AD to 1900 AD	15th Century to 19th Century		
98	MLO22106	061475/00/00	MON	NEW RD HORNCHURCH	HOUSE, HOUSE	1485 AD to 1900 AD	15th Century to 19th Century		
99	MLO26064	060179/00/00	MON	RIPPLE RD JUNCTION CHEQUERS LA	MANOR HOUSE, MANOR HOUSE, MOATED SITE, MOATED SITE	1066 AD to 1900 AD	Medieval to Post Medieval		
100	MLO43711	060179/01/00	MON	RIPPLE RD JUNCTION CHEQUERS LA	MOAT, MOAT	1066 AD to 1900 AD	Medieval to 19th Century		
101	MLO44366	060179/02/00	MON	RIPPLE RD JUNCTION CHEQUERS LA	TITHE BARN, TITHE BARN	1066 AD to 1600 AD	Medieval to 16th Century		
102	MLO44371	060179/03/00	MON	RIPPLE RD JUNCTION CHEQUERS LA	POUND, POUND	1066 AD to 1900 AD	Medieval to 19th Century		
103	MLO72729	062720/00/00	MON	MARSH WAY	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
104	MLO72733	062724/00/00	MON	LOUISE GDNS	LANDFILL SITE	1540 AD to 1900 AD	Post Medieval		
105	MLO7990	060621/00/00	MON	RIPPLE RD JUNCTION CHEQUERS LA	PUBLIC HOUSE	1540 AD to 1900 AD	Post Medieval		
106	MLO8010	060650/00/00	MON	RIPPLE RD	HOUSE	1540 AD to 1900 AD	Post Medieval		
107	MLO104524	MLO104524	PK	Dagenham Avenue/Goresbrook Road/Hedgemans Road,[Goresbrook Park] Barking, Barking & Dagenham {Public Park }	PARK, POOL	1930 AD to 2050 AD	Modern		Goresbroook Park follows the course of the Gores Brook and is in three sections, divided by Dagenham Avenue. Liable to flooding and thus unsuitable for housing development by the London County Council (LCC).
108	MLO106549	MLO106549	MON	School Road [Dagenham Park Community School], Dagenham, Barking & Dagenham, RM10 9QB {Undated features}	DITCH, PIT				Two pits and three probable ditches were recorded during a watching brief at Dagenham Park Community School in August 2011.
109	MLO107513	MLO107513	MON	Merrielands Crescent [Orion Park], Dagenham, Barking and Dagenham RM9 {peat}	PEAT	500000 BC to 2050 AD	Unknown		A watching brief was undertaken at Orion Park, Dagenham on the 29th October 2013 by Museum of London Archaeology. □ □ The earliest deposit was an alluvial and redeposited material indicated the presence of peat below the alluvial. No archaeological finds
110	MLO64245	062261/00/00	MON	SEABURN CLO	FLOOD DEPOSIT				
111	MLO98204	MLO98204	MON	Darcy Gardens [allotments to the north of] and Coombes Road (Nos 60 & 62), Dagenham	NON ANTIQUITY, DITCH?, POST HOLE?				A possible linear ditch and a post-hole of unknown date were recorded during an archaeological evaluation undertaken by AOC Archaeology Group in 2006 at Darcy Gardens and Coombes Road, Dagenham.

GLHER Event Records

RPS_no	DesigUID	PrefRef	Record Type	Name
44	ELO10306		EVT	Lowen Road/Walden Avenue [Mardyke Estate], London, RM13 8PS: Evaluation
45	ELO11028		BL	Chantry Way [Mardyke Estate, Block B], London, RM13 8PS: Excavation
46	ELO11194		BL	New Road (Nos. 105-109), London, RM13: Excavation
47	ELO11250		EVT	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham, RM10: Evaluation
48	ELO11378		EVS	Oval Road North [Beam Washlands],Dagenham, Barking and Dagenham, RM10: Geophysical Survey
49	ELO11751		EVP	Chequers Lane, South Dagenham, Barking and Dagenham: Desk-Based Assessment
50	ELO11752		EVT	Chequers Corner/New Road, Dagenham, Barking and Dagenham: Evaluation
51	ELO11755		EVP	Thames Chase Community Forest: Desk based assessment
52	ELO11756	NDB 10/130	EVP	Chequers Corner (Site 1), New Road, Dagenham, Barking and Dagenham: Desk-Based Assessment
53	ELO1235		EVT	Horndon to Barking Natural Gas Transmission Pipeline (Augering Survey)
54	ELO12447		EVP	New Road (Nos 89-99), Rainham, Havering, RM13 8EX: Desk Based Assessment
55	ELO12551		EVT	Lower Mardyke Avenue/Chantry Way/Lowen Road [Mardyke Estate], Rainham, Havering, RM13 8PS: Watching Brief
56	ELO14199		BL	New Road (Nos 9-13), Rainham, Havering: Evaluation
57	ELO14474		BL	Merrielands Crescent, [Orion Park: South Dagenham West], Dagenham, RM9: Geoarchaeological Evaluation
58	ELO2584		EVT	New Road
59	ELO3145		EVT	Barking Power Station
60	ELO539		EVT	11-113 New Road
61	ELO549		EVT	15-17 New Road,
62	ELO6313		EVT	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham: Evaluation
63	ELO7314		EVP	Archaeological Desk Based Assessment: Courier Road, Dagenham
64	ELO8142		EVP	South Street, [Mardyke Estate], Havering, Desk Based Assessment
65	ELO8143		EVT	Archaeological monitoring exercise at Mardyke Estate, Havering
66	ELO8783		EVT	Oval Road North [Beam Washlands], Dagenham, Barking and Dagenham: Excavation
67	ELO9013		BL	Leys Avenue, (Land at), Dagenham, Barking and Dagenham, Desk Based Assessment
68	ELO9532		BL	Romford Canal
69	ELO982		EVT	Princess Bowl
112	ELO11188		EVT	School Road [Dagenham Park Community School], London, RM10 9XX: Watching Brief
113	ELO11372		EVP	Choats Road [London Sustainable Industries Park], Dagenham Dock, Dagenham, Barking and Dagenham, RM9: Desk Based Assessment
114	ELO11775		EVT	School Road [Dagenham Park Community School] Dagenham, Barking and Dagenham, RM10: Watching Brief
115	ELO11776		EVT	School Road [Dagenham Park Community School] Dagenham, Barking and Dagenham, RM10: Evaluation, Excavation and Watching Brief
116	ELO12787		EVT	Gores Brook/Chequers Lane [Dagenham Dock], Dagenham, Barking and Dagenham, RM9: Watching Brief
117	ELO1363		EVP	Hornchurch Marshes, Dagenham
118	ELO1365		EVT	Hornchurch Marshes
119	ELO13825		EVT	Choats Road [Chinook Urban Mining Facility, Sustainable Industries Park], Dagenham, Barking & Dagenham: Archaeological & Geoarchaeological Evaluation

RPS_no	DesigUID	PrefRef	Record Type	Name
120	ELO14025		BL	Merrielands Crescent [Orion Park], Dagenham, Barking & Dagenham, RM9: Watching Brief
121	ELO14045		EVT	School Road [Dagenham Park Community School], Dagenham, Barking & Dagenham, RM10 9QB: Watching Brief
122	ELO14476	660318	BL	Merrielands Crescent, [Orion Park], Dagenham: Desk-Based Assessment
123	ELO15059		EVA	Merrielands Crescent [Orion Park Geopost Site], RM9: evaluation
124	ELO15071		EVT	Chequers Lane [Freightliner Rail Services Scrapyard], RM9: geoarchaeological and environmental assessment
125	ELO2361		EVT	ON LAND AT DIGBY GARDEN ALLOTMENTS, DAGENHAM
126	ELO2554		EVT	FORMER MANSER WORKS, 137-139 NEW ROAD, RAINHAM
127	ELO3149		EVT	Hays Storage Services Ltd
128	ELO3153		EVT	Morland Road [United Dairy Compound], Dagenham, Essex, RM10: Evaluation
129	ELO5067		EVP	Gores Brook/Chequers Lane [Dagenham Dock], Dagenham, Barking and Dagenham, RM9: Historic Environment Assessment
130	ELO6075		EVT	Dagenham Dock
131	ELO6075	19/12/05	EVT	Dagenham Dock
132	ELO6748		EVT	School Road, [Dagenham Priory Comprehensive School], Dagenham: Evaluation
133	ELO6750		EVS	School Road [Dagenham Park Community School], Dagenham: Geophysical Survey
134	ELO6950		EVT	Darcy Gardens [allotments to the nrth of] and Coombes Road (Nos 60 & 62), Dagenham
135	ELO6950	21/2/07	EVT	Darcy Gardens [allotments to the nrth of] and Coombes Road (Nos 60 & 62), Dagenham
136	ELO7083		EVP	Beam Reach (land at number 5, plots 10-12), Dagenham
137	ELO7087		EVT	An Archaeological Evaluation at 155-163 New Road, Rainham
138	ELO71		EVT	Manor Way/Consul Avenue, Hornchurch Marshes, Dagenham
139	ELO8047		EVP	Archaeological Desk Based Assessment: Riverside Sewage Treatment Works, Digestion Plant, Havering
140	ELO8093		EVP	Hindmans Way, (Dagenham Docks), Barking, Desk Based Assessment
141	ELO9010		BL	Dagenham Heathway to Wennington, Barking, Desk Based Assessment

APPENDIX 2

Historic Building Recording

BUILT HERITAGE RECORDING AT THE FORMER FORD PTA (PAINT, TRIM, ASSEMBLY PLANT) SITE, BEAM PARK, NEW ROAD (A1306), LONDON BOROUGH OF HAVERING/ BARKING AND DAGENHAM

PCA REPORT NO: R13113

DECEMBER 2017

PRE-CONSTRUCT ARCHAEOLOGY

Built Heritage Recording at the Former Ford PTA (Paint, Trim, Assembly Plant) Site, Beam Park, New Road (A1306), London Borough of Havering/ Barking and Dagenham

Report: Adam Garwood

Site Code: THV17

Project Manager: Charlotte Matthews

Client: RPS CgMs Consulting Limited

Central National Grid Reference: TQ 50021 82962

Contractor:

Pre-Construct Archaeology Limited,

Unit 54 Brockley Cross Business Centre

96 Endwell Road

Brockley

SE4 2PD

Tel: 020 7732 3925

Fax: 020 7732 7896

Email: CMatthews@pre-construct.com

Web: www.pre-construct.com

© Pre-Construct Archaeology Limited

December 2017

© The material contained herein is and remains the sole property of Pre-Construct Archaeology Limited and is not for publication to third parties without prior consent. Whilst every effort has been made to provide detailed and accurate information, Pre-Construct Archaeology Limited cannot be held responsible for errors or inaccuracies herein contained.

PCA Report Number: R13113

DOCUMENT VERIFICATION

Site Name

Former Ford PTA (Paint, Trim, Assembly Plant) Site,
Beam Park,
New Road (A1306),
London Borough of Havering/Barking and Dagenham

Type of project

Built Heritage Recording

Quality Control

Pre-Construct Archaeology Limited Project Code			K2224
Pre-Construct Archaeology Limited Report Number			R13113
	Name & Title	Signature	Date
Text Prepared by:	Adam Garwood		05/12/2017
Graphics Prepared by:	Hayley Baxter		05/12/2017
Graphics Checked by:	Josephine Brown	Josephine Brown	05/12/2017
Project Manager Sign-off:	Charlotte Matthews	Charlotte Matthews	05/12/2017

Revision No.	Date	Checked	Approved
1	13/12/2017	Charlotte Matthews	Charlotte Matthews

Pre-Construct Archaeology Ltd
Unit 54
Brockley Cross Business Centre
96 Endwell Road
London
SE4 2PD

CONTENTS

1	NON-TECHNICAL SUMMARY	4
2	INTRODUCTION	5
3	PLANNING BACKGROUND	7
4	METHODOLOGY	9
5	HISTORIC BACKGROUND	10
6	BUILDING DESCRIPTION	15
7	DISCUSSION	19
8	ACKNOWLEDGEMENTS	20
9	BIBLIOGRAPHY	21

APPENDIX

1 OASIS FORM

FIGURES

Figure 1 Site Location
Figure 2 Detailed Site Location showing Directions of Plates
Figure 3 Chapman and Andre Map of 1777
Figure 4 Ordnance Survey (1:2500) map of 1950
Figure 5 PTA site plan *c*.1956-57
Figure 6 Estate sketch plan *c*.1971
Figure 7 Plan and section of Storm Water Pump House (Building 8)
Figure 8 Plan and sections of Gas Meter House (Building 10)
Figure 9 Plan and sections of Gas Meter House (Building 10)
Figure 10 Plan, sections and Elevations of Gatehouse No. 1 and Search Lodge (Building 11)
Figure 11 Plan and section of Sewage Pump House (Building 12)
Figure 12 Drainage Plan of Fire station and Oil Storage (Building 13)
Figure 13 Plan and sections of Oil Storage (Building 13)
Figure 14 Plan of Fire station with Plate directions

PLATES

Plate 1 Building 1: looking south
Plate 2 Building 1: looking south-east
Plate 3 Gas plant to rear of Building 1
Plate 4 Building 2: Foundation looking north-east
Plate 5 Bridge 3: looking north-west
Plate 6 Bridge 3: looking north
Plate 7 Bridge 3: Deck looking east
Plate 8 Bridge 4: looking north-east
Plate 9 Bridge 4: Deck looking west
Plate 10 Building 5: Foundation, looking north
Plate 11 Building 6: Compound looking south-west
Plate 12 Building 6: Compound looking north-east
Plate 13 Building 6: View south inside compound
Plate 14 Bridge 7: looking south-west
Plate 15 Bridge 7: Deck looking east
Plate 16 Building 8: Storm water pump house looking east

Plate 17 Building 8: Storm water pump house looking south
Plate 18 Building 8: Storm water pump house Internal
Plate 19 Building 9: Foundation, looking north-west
Plate 20 Building 10: Gas Meter House, looking north
Plate 21 Building 11: Gate house, looking north-east
Plate 22 Building 11: Gate house, looking west
Plate 23 Building 12: Sewage pump house, looking south
Plate 24 Building 12: Sewage pump house, looking east
Plate 25 Building 13: Garage/store looking east
Plate 26 Building 13: Appliance house and Drill Tower, looking south-east
Plate 27 Building 13: Appliance House looking north
Plate 28 Building 13: Oil Store, looking north-west
Plate 29 Building 13: Appliance Shed (room 10) looking north-west
Plate 30 Building 13: Appliance Shed (13) looking south-east
Plate 31 Building 13: Modern offices (right) inserted into eastern bays (formerly for appliance)
Plate 32 Building 13: Modern Office (room 14) looking north
Plate 33 Building 13: Central brick and concrete framed offices, with switchgear and telecoms above
Plate 34 Electrical switch gear above central offices, looking south-west
Plate 35 Building 13: Electrical switch gear above central offices, looking south-east
Plate 36 Building 13: Floor above central offices looking north
Plate 37 Building 13: Office (room 4)

1 NON-TECHNICAL SUMMARY

1.1.1 Pre-Construct Archaeology Limited was commissioned by RPS Group on behalf of Countryside Properties (UK) Limited to carry out built heritage recording at the former Ford Assembly Plant site, also known as Beam Park Riverside, which straddles the London Boroughs of Havering as well as Barking and Dagenham. The recording was focused upon redundant buildings and structures that survive within the Site (centred on OS NGR TQ 50021 82962). The Site presently comprises predominately hard standing associated with the slab of the former (demolished 2004) Ford Paint Trim Assembly (PTA) factory in the western area, and related car storage areas to the east, either side of the north to south flowing Beam River green corridor.

1.1.2 The survey works were carried out to accompany a cross-boundary hybrid planning application submitted for a two phase residential development comprising approximately 2,899 dwellings, two primary schools, a station and medical centre. The built heritage survey was undertaken in accordance with a Written Scheme of Investigation agreed by the Greater London Archaeological Advisory Service (GLAAS). It was completed in accordance with an Historic England Level 1-2 survey.

1.1.3 The upstanding utility buildings and other ancillary structures within the former Ford Paint Trim and Assembly (PTA) plant to the west of Thames Avenue and the Traffic Compound site to the east appear to have survived because of their continued use. Three accommodation bridges (Bridges 3, 4 and 7) still provide access between the two site areas and across the River Beam. Most of the other remaining structures were built during the initial development of the PTA site during the mid to late 1950s and are associated with utilities such as gas, water or drainage.

1.1.4 The acquisition of Briggs Motor Bodies Ltd by Ford-Britain led to a number of significant changes at Dagenham and in 1954 Sir Patrick Hennessy launched an ambitious expansion and modernisation programme. A critical element of that scheme was the remodelling and re-equipping of the Briggs plant (known as the stamping plant) and in 1954, the layout, design and construction of a new Paint, Trim and final Assembly (PTA) plant on a former 48 acre Ford sports ground, east of Kent Avenue. The majority of the recorded buildings and structures were built to service this new plant and the adjacent Traffic Compound sited to the east of Thames Avenue. The Fire Station (Building 13) accommodated the mobile appliances used by the Fire Protection Department of the Ford Motor Company, a department responsible for all fire precautions across Ford sites, while the adjoining Oil Store held a number of large oil storage tanks and circulating pumps for the purposes of supplying various grades of oil, transmission and axle oils, to the new main assembly building. There was a requirement to elevate both surface water and sewage to avoid the site flooding due to the site being low lying marshland. The former was collected from the extensive plant roofs. These issues were dealt with by providing a storm water pump house (Building 8) and sewage pump house (Building 12) as part of the original site layout. Access across the River Beam from Thames Avenue into the Traffic Compound site to the east, was initially provided by the iron girder, single-span beam bridge (Bridge 3), although this was later replaced, probably due to increases in axle weights and size of transport vehicles, by the modern concrete and steel bridges (Bridges 4 and 7).

1.1.5 As other factories and divisions of Ford elsewhere in Britain and Western Europe took up an increasing share of production during the 1970s, so the importance of Dagenham declined. While engine production continued to be a mainstay of the plant's output, the number of car lines built at the plant fell to one (the Fiesta) in the 1990s. Owing to falling sales and over-capacity in Europe, the company announced in early 2000 that it would axe 1,500 jobs at Dagenham and in the same year the company announced that the PTA plant would close in 2002, with the loss of a further 1,900 jobs. The company focused instead on the construction of a new diesel engine plant, which continues to operate to the present.

2 INTRODUCTION

2.1 Background

2.1.1 Pre-Construct Archaeology Limited was commissioned by RPS Group on behalf of Countryside Properties (UK) Limited to carry out built heritage recording at the former Ford Assembly Plant site, also known as Beam Park Riverside, which straddles the London Boroughs of Havering as well as Barking and Dagenham (**Figures 1** and **2**). The recording was focused upon a number of redundant buildings and structures that survive within the site, which is centred on Ordnance Survey NGR TQ 50021 82962. The recording work follows the previous production of an Historic Environment Desk Based Assessment which identified the Historic Buildings on site and their heritage significance (RPS December 2016).

2.1.2 The present Historic Building report is inclusive of all Phases of the Beam Park, London Riverside development in accordance with the requirements of a draft condition on Outline consent. The Historic Building aspect forms one component of the Heritage project that also includes archaeological evaluations, palaeo-environmental assessments and archaeological mitigation excavations where required. The overall requirements were set out in the project's Environmental Statement (PBA 2017; Chapter 13 'Archaeology and Cultural Heritage') and further consolidated for the agreement of Greater London Archaeological Advisory Service (GLAAS) within an 'umbrella' heritage strategy document (RPS CgMs 2017).

2.1.3 The survey works were carried out to accompany a cross-boundary hybrid planning application (P1242.17) submitted for a two phase residential development comprising approximately 2,899 dwellings, two primary schools, a station and a medical centre. The built heritage survey was undertaken in accordance with a Written Scheme of Investigation (Matthews, 2017), agreed in advance of works by GLAAS. It was completed to a level equivalent to an Historic England Level 1-2 survey and in accordance with guidance published by Historic England (2016) '*Understanding Historic Buildings: A guide to good recording practice'* and standards set out in the CIfA guidance for the archaeological investigation and recording of standing buildings or structures (CIFA, 2014a).

2.2 Site Location and Description

2.2.1 The Site is centred at Ordnance Survey National Grid Reference TQ 50021 82962 and is a former Ford Assembly Plant site covering an area of *c*.31.4ha to the south of the A1306 Ripple Road and between Marsh Way and Kent Avenue within the London Boroughs of Havering/Barking and Dagenham (**Figures 1** and **2**).

2.2.2 The Site presently comprises predominately hard standing associated with the slab of the former Ford Paint Trim Assembly (PTA) factory in the western area, and related car storage areas to the east, either side of the north to south flowing Beam River green corridor (**Figure 2**). The Site is also crossed roughly centrally by Thames Avenue (not a public road) and to the east by the elevated Marsh Way, which spans the London, Tilbury and Southend (and HS1) railway to the south. The Site is bounded to the west by Kent Avenue.

2.2.3 The Ford Motor Company Dagenham Estate site plan of *c.*1971 (**Figure 6**) depicts the large Car Assembly (PTA) Plant building within the western part of the Site. A Car Dispatch area is shown to the east of the Assembly Plant, to the west of Thames Avenue and south of an internal access Sierra Drive. A large area of hard-standing reserved as a Traffic Compound is shown to the east of Thames Avenue and the River Beam.

2.2.4 Only a handful of small brick built utility structures, bridges, compounds and the factory's fire station, remain upstanding and it is these buildings/structures that form the focus of the survey. None are statutorily listed or considered to be locally important heritage assets by the two local planning authorities. The Site does not lie within or close to the boundary of a Conservation Area. The central and western

areas of the Site fall within the Ripple Road Archaeological Priority Area (HER Ref: DLO37897), an archaeologically rich area designated for prehistoric remains. To the immediate south of Ripple Road is the Tier III Archaeological Priority Area 'Barking Level and Dagenham Marsh' (DLO37927), while the eastern area of the site is largely covered by an equivalent Havering Borough Council 'Archaeological Priority Zone' (APZ) relating to Alluvium Deposits (DLO33196).

3 PLANNING BACKGROUND

3.1 Introduction

3.1.1 National legislation and guidance relating to the protection of historic buildings and structures within planning regulations is defined by the provisions of the Town and Country Planning Act 1990. In addition, local planning authorities are responsible for the protection of the historic environment within the planning system and policies for the historic environment are included in relevant regional and local plans.

3.2 Legislation and Planning Guidance

3.2.1 Statutory protection for historically important buildings and structures is derived from the Planning (Listed and Conservation Areas) Act 1990. Guidance on the approach of the planning authorities to development and historic buildings, conservation areas, historic parks and gardens and other elements of the historic environment is provided by the National Planning Policy Framework (NPPF), which was adopted on 27 March 2012. The requirement for the built heritage recording is in accordance with NPPF Paragraph 141.

LONDON PLAN POLICY 7.8 Heritage assets and archaeology strategic

A. London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, world heritage sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.

B. Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.

C. Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.

D. Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.

E. New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.

3.3 Planning Application

3.3.1 A Hybrid Planning Application (P1242.17) has been submitted for residential development. This includes a detailed element (536 dwellings) for the eastern Phase 1 area and an outline element for residential development of the remainder. The overall scheme comprises a total of approximately 2,899 dwellings, with two primary schools, a station, a medical centre, and other non-residential uses.

3.3.2 The Hybrid submission description is detailed as follows:

'Cross boundary hybrid planning application for the redevelopment of the site to include up to 2,900 homes (35% affordable); two primary schools and nurseries (Use Class D1); railway station; up to 4,110sqm of supporting uses including retail, healthcare, multi faith worship space, leisure, community uses and management space (Use Classes A1, A2, A3, A4, A5, B1, D1 and D2); energy centres; open space with localised flood lighting; public realm with hard and soft landscaping; children's play space; flood compensation areas; car and cycle parking; highway works and site preparation/ enabling works'.

3.3.3 A draft condition was prepared by GLAAS for the Hybrid Scheme and has been

applied by the London Borough of Barking & Dagenham to the Outline consent as follows:

"71. No demolition shall take place in each phase until a written scheme of historic building investigation (WSI) has been submitted to and approved in writing by the Local Planning Authority. For buildings that are included within the WSI, no demolition or development shall take place other than in accordance with the agreed WSI, which shall include the statement of significance and research objectives, and:

A. The programme and methodology of historic building investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works and;

B. The programme for post-investigation assessment and subsequent analysis, publication & dissemination and deposition of resulting material. This part of the condition shall not be discharged until these elements have been fulfilled in accordance with the programme set out in the WSI."

4 METHODOLOGY

4.1 Aims and Objectives

4.1.1 The aim of the built heritage recording as set out in the Written Scheme of Investigation (Matthews, 2017) was to provide a record of the extant buildings and associated structures prior to their demolition. The aim of the work was to produce a permanent record of these building in their present condition and landscape, meeting nationally recognised standards. The built heritage recording was to be carried out in accordance with Level 1/2 as set out in Historic England (2016) *Understanding Historic Buildings: A guide to good recording practice*. The historic building survey was to be undertaken to a standard allowing the future understanding and interpretation of the buildings. The record was to ultimately form part of an ordered archive and report that would preserve 'by record' the building and structures affected by the proposals and thereby mitigate their loss.

4.2 On-Site Recording

4.2.1 The on-site survey was carried out during the week ending 20th October 2017 and on 13th November 2017 by the author. A photographic survey comprising high resolution digital images was undertaken recording external elevations, and where access was available the interior spaces to record key features, fixtures or fittings. A selection of the images has been included in this report (**Plates 1** to **37**) and **Figures 2** and **14** show the location and direction of these photographs.

4.2.2 The built heritage recording was carried out in accordance with a Level 1-2 survey as set out in the Historic England (2016) *Understanding Historic Buildings: A guide to good recording practice*. A Level 1 survey is principally a full visual record (photographic) supplemented by very basic descriptive information. This survey is a slightly advanced Level 1 (1-2), which also includes a brief site historic background and building descriptions.

4.3 Project Archive

4.3.1 A full and ordered archive that includes written, drawn and photographic records relating to this survey was completed as defined in CIfA (2014b); Taylor & Brown (2009) and UKIC and ADS guidelines for the preparation of archaeological archives for long term storage, and '*Archaeological Archives: A Guide to Best Practice in creation, compilation, transfer and curation*' (AAF 2007).

4.3.2 The archive will be provisionally stored in Pre Construct Archaeology's London Office in Brockley, before its deposition with the LAARC (London Archaeological Archives Research Centre).

4.4 Guidance

4.4.1 All works were undertaken in accordance with standards set out in:

- Historic England: *Guidelines for Archaeological Projects in Greater L*ondon (GLAAS, 2015)
- Historic England: *The Presentation of Historic Building Survey in CAD* (2005)
- CIFA: *Standards and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* (2014a)

5 HISTORIC BACKGROUND

5.1 Introduction

5.1.1 Whilst a settlement is believed to have existed at Dagenham as early as the 7th century AD, it was not mentioned in the Domesday Book, suggesting that it was then part of the substantial manor of Barking. The parish of Dagenham was in existence by the early 13th century, when reference was made to a church there (Powell, 1966: 294). The southern part of the parish was dominated by marshland commons, which were mainly used for grazing sheep. The complex pattern of landholding in the marsh, together with the ever-present risk of flooding, discouraged local landowners from developing the marshes for commercial farming during the 17th and 18th centuries (**Figure 3**).

5.1.2 In the south-western corner of the parish lay the manor of Cockermouth, a free tenement held of Barking Abbey until 1330, when it was granted to the abbey in demesne (*ibid*: 267-281). The abbey retained Cockermouth until the Dissolution, following which it was leased, then sold, to Sir Anthony Browne. By the mid-19th century, the title to the manor was held by one Thomson Hankey, although it had been greatly reduced in extent during the intervening centuries.

5.1.3 The manor house of Cockermouth originally stood at the junction of Ripple Road and Chequers Lane, immediately south of the Chequers Inn. This building was demolished in the 19th century and replaced by Pound House, its name derived from the manorial pound, which occupied part of the yard. Pound House Farm descended with Westbury in Barking until 1879–80, when it was sold to Francis Sterry of Romford. In 1898, Sterry sold the farm to Samuel Williams, the developer of Dagenham Dock and founder of the eponymous shipping firm. The farm was subsequently let to tenants, before being acquired by the London County Council in 1922.

5.1.4 Although it had been proposed to build a dock at Dagenham linked by railway to the existing line at Chadwell Heath as early as 1846, it was not until Samuel Williams (d. 1899) purchased the land in 1887 that development of the dock commenced. During the next few years the foreshore was filled in and raised to the height of the river wall, following which new jetties were built, forming a tidal basin and quay. The acquisition of Pound Farm secured the remaining land on the west side of Chequers Lane, offering the company an opportunity to develop the remainder of the marsh for commercial purposes. In 1903 Samuel Williams & Sons completed a new deep-water jetty, the first concrete structure of its kind on the Thames. Five years later the company built Dagenham Dock station in conjunction with the London, Tilbury and Southern Railway. Having secured permanent access to the railway network, Samuel Williams & Sons set about building the Dagenham Dock estate. Four new factories designed by the firm of Charles Heathcote & Sons were built between 1909 and 1914 for leasing to other firms.

5.2 The Development of the Ford Works at Dagenham, 1923-1931

5.2.1 The history of the Ford Motor Company's business in Britain can be traced back to 1904, when Aubrey Blakiston imported a dozen Model A Fords, which he intended to sell to the public via the newly established Central Motor Car Company (Burgess-Wise, 2001: 11). Blakiston resigned from the company in 1906, when he was succeeded by Percival Perry as managing director. Perry (1878-1956) liquidated the firm the following year, when he set up Perry, Thornton & Schreiber Ltd to sell the newly introduced Ford Model N, which the company supplied to customers with British-made coachwork. The firm was the first to introduce the famous Model T to the global market at the 1909 London Olympia motor exhibition. Perry parted company with Thornton and Schreiber the same year, when he was invited by Henry Ford to head the Ford Motor Company's first branch in England.

5.2.2 In 1911 the Ford Motor Company (England) Ltd was established to manufacture Ford cars specifically for the British market, the first Ford company to be set up outside

North America. Perry found a disused tramcar factory at the Trafford Park trading estate near Manchester which the company converted into an assembly works for its cars. A local coachbuilder was acquired by the company in 1912 to build vehicle bodies for the British market. By 1914 the Trafford Park factory had been fitted with one of Ford's innovative moving assembly conveyors and was producing chassis at a rate of 21 per hour (*ibid*: 14). During the First World War the factory was used to manufacture modified Model T cars for use by the armed forces, in addition to the production of shell casings. A subsidiary factory was established by the firm at Cork in southern Ireland, intended originally for the manufacture of Fordson agricultural tractors.

5.2.3 Following the end of the First World War, the company began to search for an alternative production site to Trafford Park, which was too small to permit future expansion. Although Perry found and purchased a site at Southampton, which offered the deep-water access demanded by Henry Ford, the scheme did not receive the wholehearted backing of the American company and it was subsequently sold off in the 1920s. Perry resigned from the company's service in 1919, entering into a partnership with Noel Mobbs of the Pytchley Autocar Company to acquire a disused military transport depot at Slough, which they developed as the phenomenally profitable Slough Trading Estate. Knighted for his services during the First World War, Perry retired to the Channel Islands three years later.

5.2.4 During the early 1920s Ford's share of the English market began to decline, as the company suffered from the effects of protectionist legislation such as the 1920 Motor Car Act and the import duties imposed upon components manufactured at the company's Cork factory following the creation of the Irish Free State in 1922. The company's search for a new manufacturing site in mainland Britain intensified, culminating in the discovery in 1923 by Edward Grace (manager of the Cork works) of an area of undeveloped land close to Dagenham Dock station. Although the site was notoriously marshy, comprising areas of rough grazing interspersed with rubbish tips piled high with London's waste, the company purchased 295 acres of land from Samuel Williams & Sons for £150,000 in May 1924. Owing to financial uncertainties brought about by continuing falls in Ford sales in Britain, development of the site was delayed until later that decade (*ibid*: 21; Powell, 1966: 267-281).

5.2.5 In 1927 Ford finally ceased production of the Model T after 19 years of continuous production. The launch of the new Model A was accompanied by an in-depth review of the company's European operations conducted by Henry Ford himself. Ford conceived an ambitious plan whereby the British operation would become "a Detroit in miniature, a virtually self-sufficient manufacturing colossus supplying and controlling a chain of 11 European assembly plants" (Burgess-Wise, 2001: 22). In order to implement what became known as Ford's '1928 plan', Sir Percival Perry was coaxed out of retirement. Perry recruited A.R. (Rowland) Smith from Standard Cars to take charge of Ford Britain's new manufacturing operation. The new Ford Motor Company Ltd was successfully floated in December 1928.

5.2.6 Work on the new Dagenham factory began the following May, when a ground-breaking ceremony was held on the site, attended by Henry Ford's son Edsel and Sir Percival Perry. Sir Charles Heathcote & Sons (architects of Samuel Williams' Dagenham Dock factories) were appointed architects to the scheme, whilst Sir Cyril Kirkpatrick was taken on as consulting engineer. An area of 66 acres was earmarked for the Ford factory itself, construction of which was preceded by a programme of site levelling and stabilisation, which necessitated sinking 22,000 concrete piles in the marshy ground to a depth of up to 80ft. The factory itself was built over a period of two years on concrete rafts laid on top of the piles. Amongst the buildings erected by Ford at Dagenham were a riverside power station, which from 1936 was illuminated at night by a Ford sign visible from 20 miles away, a foundry, coke ovens, gas plants and a blast furnace, together with the largest private wharf on the Thames (*ibid*: 31). By the time that production commenced at Dagenham in the autumn of 1931, the company had spent some £5 million on the works and faced an uncertain future in an economy mired in the depths of the Depression.

5.3 The Briggs Motor Bodies and Kelsey-Hayes Wheel Factories at Chequers Lane, 1930-1954

5.3.1 Having previously made a fortune from the development of the Slough Trading Estate, Sir Percival Perry appreciated the potential profits that might be made from establishing a similar enterprise at Dagenham. The company therefore set about purchasing additional parcels of land adjoining the works, acquiring a total holding of approximately 600 acres by 1932 (ibid: 35). The first part of the estate to be developed lay on the east side of Chequers Lane, in an extensive plot bordered by the New Road to the north and the London to Tilbury railway line to the south. New roads named Kent Avenue and Norwich Road were laid out across the site in anticipation of the arrival of business tenants. In the event, the only companies to set up factories on the Chequers Lane estate were closely connected with Ford itself, most notably the British subsidiaries of existing North American Ford suppliers the Briggs Manufacturing Company and the Kelsey Hayes Wheel Corporation, both of Detroit. By the late 1930s these companies had been joined by W.J. Reynolds (Motors) Ltd, a main dealer of Ford cars and Fordson commercial vehicles (TNA HO 192/1486).

5.4 Briggs Motor Bodies Co. Ltd

5.4.1 The Briggs Manufacturing Company was formed out of an existing coach building company by Walter Owen Briggs of Detroit in 1909 (http://www.coachbuilt.com/bui/b/briggs/briggs.htm). From the outset the company manufactured interiors for the Model T, following which it concentrated the manufacture of closed coach bodies for Ford. The company was successfully floated in 1924, whilst the following year it manufactured half a million automobile bodies and turned a profit of $11 million, giving shareholders an astonishing 200% dividend. The United Kingdom subsidiary appears to have been established as two separate concerns, a private company called Briggs Motor Bodies and the Briggs Trust Limited, the latter of which held the company's assets (TNA BT 31/37769/303263). In a lease dated 6th June 1932 between the Ford Motor Company and Briggs Motor Bodies for 99 years from 24th June 1931 the former demised the Chequers Lane site (containing an area of approximately 80,433 square yards) to the latter for a rent of £2849 per annum.

5.4.2 On 24th July 1935 the nominal capital of Briggs Motor Bodies was increased from £1,000 to £1 million through the issue of 999,000 ordinary shares of £1 each, and the business was reconstituted as a public company. The company was established with the object of carrying on "the business of designers, builders and manufacturers of motor bodies for use in connection with motor vehicles of any description". The company purchased the undertaking, business and assets of Briggs Trust Ltd in consideration of 599,993 ordinary shares. Whilst the Earl of Granard was appointed Chairman of the new company, the Board was dominated by directors of the American parent company, including Walter Owen Briggs himself, Robert Pierce and William Dean Robinson.

5.4.3 The Briggs Motor Bodies plant manufactured all of the coachwork for Ford's Dagenham works, together with that for the company's eleven European satellites in the early 1930s (Burgess-Wise, 2001: 52). The earliest bodies built by the plant comprised ash frames to which steel panels were attached. The pressings were comparatively small, welded together in jig tools that located the body panels by pneumatic pressure. Whilst the method of construction was said to have resulted in stronger bodies than those assembled from larger panels, it meant that the plant was unable to stamp out metal roof panels during the 1930s. Aside from windows and seat trim, which were fitted in the Ford plant, Briggs supplied ready trimmed and painted bodies to the neighbouring works.

5.5 Post-Second World War

5.5.1 Within weeks of the end of fighting in Europe, the Ford plant at Dagenham was gearing up to build cars to meet the anticipated demands of peacetime (Burgess-Wise, 2001: 97). Post-war austerity, punitive tax rates on the motor industry, petrol

rationing and fuel shortages combined to suppress demand for private cars in the United Kingdom, forcing Ford and other companies to concentrate on export sales. Notwithstanding the gloomy economic outlook, Ford Britain took over the Kelsey Hayes Wheel Company in 1947.

5.5.2 Following the expansion of its manufacturing activities during the Second World War, Briggs Motor Bodies reduced the extent of its operations during the post-war period. By 1948 the workforce had fallen to less than 6,000. In order to maintain the company's finances, Briggs continued to build bodies and components for rival motor manufacturers, including Austin, Rootes, Standard, Leyland and Chrysler (ibid: 128). The death of Walter Owen Briggs in 1953 and the threat that Ford's American rival Chrysler would purchase his company provided an opportunity for Ford-Britain's Managing Director, Sir Patrick Hennessy to gain possession of the firm's British holdings. The Detroit parent company approved Sir Patrick's plan, and the British company was sold to Ford-Britain for the very reasonable sum of £3.2 million the same year.

5.6 The Briggs Motor Bodies Works under Ford ownership 1954-2002

5.6.1 The acquisition of Briggs Motor Bodies Ltd by Ford-Britain led to a number of significant changes at the Chequers Lane plant. In 1954 Sir Patrick Hennessy launched an ambitious expansion and modernisation programme at Ford, which was intended to enable Dagenham to build as many as 2,000 vehicles per day (*ibid*: 137). A critical element of the scheme was the remodelling and re-equipping of the Briggs plant (known as the stamping plant). In 1954, the layout, design and construction of a new Paint, Trim and final Assembly (PTA) building on the former 48 acre Ford sports ground on the opposite (east) side of Kent Avenue. The latter is shown on the Ordnance Survey map of 1950 (**Figure 4**).

5.6.2 The new building was a two storey construction that included a facilities block, receiving bay and final assembly section, including body upholstery and fitting known as body trim. The first floor contained the phosphating plant and rinse, new paint shop, the wet sand decks and the drying ovens. The first floor was also linked by means of a large conveyor to the 'Body in white' plant to the west of Kent Avenue (Lax et al, 1960). The new PTA occupied an area of 250,000 square feet and was to be totally automated. When finished, the PTA building contained nine miles of conveyor track controlled by 1,200 miles of electric cabling. The north side of the plant comprised the facilities block: for admin staff, canteens, kitchens and medical centre. Ancillary buildings, which housed plant or services, were situated along the north and south sides of the main building, including amongst others the Fire Station, Oil store and pump house, storm water pump house and sewage pump house. The latter was required due to the low level of the site and the need to elevate surface water and sewage by pumping to avoid flooding. To lessen the risk of surface water, the ground levels over the site were raised by *c*. four feet (Lax, et al 1960). The site of the PTA and a number of ancillary buildings are shown on a mid 1950s plan of the site (**Figure 5**) while a later Estate Site Map published around 1970-1 (**Figure 6**) shows the PTA and the Traffic Compound; the latter on land to the east of Thames Avenue.

5.6.3 In November 1960, Ford America announced that it intended to buy up the 45.4% shareholding in Ford-Britain that remained in private hands in order to further integrate its operations and increase marketing effectiveness in both countries (TNA BT 64/5205; Burgess-Wise, 2001: 144). The parent company paid nearly £120 million for the outstanding 17,726,804 shares the following January. The move resulted in a diminution of Dagenham's role at the centre of the company's British operations, accompanied by a process of decentralisation that increased as the decade progressed. The styling, engineering and prototype divisions all migrated from Dagenham to Aveley (Essex) in 1960, while a new manufacturing plant capable of building 1,000 vehicles per day opened at Halewood on Merseyside in October 1963. The headquarters of Ford's operation in Britain, and subsequently Europe, relocated to a purpose-built office complex at Warley in Essex.

5.6.4 As other factories and divisions of Ford elsewhere in Britain and Western Europe took up an increasing share of production during the 1970s, so the importance of Dagenham to the company declined. While engine production continued to be a mainstay of the plant's output, the number of car lines built at the plant fell to one (the Fiesta) in the 1990s. Owing to falling sales and over-capacity in Europe, the company announced in early 2000 that it would axe 1,500 jobs at Dagenham (Burgess-Wise, 2001: 189). The same year the company announced that the PTA plant would close in 2002, with the loss of a further 1,900 jobs. As vehicle assembly ceased to be an element of the company's operations at Dagenham, the company invested instead in the construction of a new diesel engine plant, which continues to operate to the present. The PTA plant was demolished in 2004.

6 BUILDING DESCRIPTION

6.1 Introduction

6.1.1 At the time of the on-site recording, the Site had been mainly cleared of its buildings leaving only a handful of small primarily utility buildings, bridges and the Site's fire station. These buildings and structures were distributed widely across the Site, with a group clustered close to Thames Avenue and another group to the south of Ripple Road and towards Kent Avenue. For ease of reference each building or structure was assigned an identification number: Buildings 1 to 13 (**Figure 2**; **Plates 1** to **37**).

6.2 Building 1

6.2.1 Building 1 is a small rectangular-plan, flat-roofed brick building constructed during the third quarter of the 20th century (**Plates 1** and **2**). It lies towards the northern boundary of the Site, to the east of Thames Avenue and west of the Beam River (**Figure 2**). A building of similar dimension appears close to this position on the Ordnance Survey map of 1939 (not illustrated) although is not shown on the subsequent edition of 1950 (**Figure 4**). Building 1 was built with red brick elevations, laid in English bond below a concrete slab roof structure. Door openings with simple soldier courses are present in the east and west walls (**Plate 2**), while casement windows pierce the north and south elevations (**Plate 1**). The former, facing Ripple Road, comprises a strip of five, individual iron-framed four light casement windows, and the latter, a slightly smaller range of four corresponding windows. A small steel framed lean-to attached to the rear of the building shelters a complex of gas pipe-work and pressure control valves (**Plates 3** and **4**). Its function is unclear, its location close to the river may suggest a flood related function, although a small gas metering plant may be a possibility given the proximity of the gas pipework.

6.3 Building 2: Foundation

6.3.1 The foundation/lower courses of a square plan building is located immediately south-west of building 1 (**Figure 2**; **Plate 4**). Given its location, it was most likely associated with gas or some other utility. The foundation comprises two blockwork lower courses of the external walls and the part concrete/iron 'slabs' to a semi-basemented but suspended floor structure over a void.

6.4 Bridge 3: Iron Bridge

6.4.1 This accommodation bridge is the earlier of two bridges crossing the River Beam within the northern area of the Site. It lies to the south of Beam Bridge, a modern structure which carries the A1306 Ripple Road over the River Beam to the north and outside the Site boundary, and to the north of a similar (to Beam Bridge) concrete accommodation bridge (Bridge 4; **Figure 2**). Bridge (3) is a steel (possibly wrought iron) framed single span, unsupported beam bridge built with a steel and concrete deck and a pair of triangulating girder beams, with vertical and raking struts, which stiffen the structure and form the bridge balustrade (**Plates 5** to **7**). This accommodation bridge was originally built (post 1950) to enable vehicle access onto the Site east of the River Beam, and was later replaced, probably due to heavier axle weights of modern vehicles, by bridge (4) to the south.

6.5 Bridge 4: Concrete Bridge

6.5.1 An accommodation bridge and replacement for girder beam bridge (3). This clearly modern (late 20th century) bridge is an unsupported single span beam bridge constructed using concrete girders built off concrete abutments with a concrete/tarmac deck (**Plate 8**). The balustrades to the bridge are simply formed using squat, angle steel posts and pre-formed moulded sheet steel rails to the road way and a taller lattice link balustrade to a pedestrian way along the northern side of the bridge (**Plate 9**).

6.6 Building 5: Foundation to a former Portable Building

6.6.1 An L-shaped foundation to a former portable building comprised of a series of earth-fast concrete beams with aggregate between (**Plate 10**). This foundation was located to the east of the river and south of an internal access road and within an area of mainly tarmac and hard-standing (**Figure 2**).

6.7 Building 6: Gas Valve Compound

6.7.1 A large high pressure and high capacity Gas Valve Compound (**Plates 11** to **13**) had been built alongside, and to the east of, the River Beam and to the west of an internal access way (**Figure 2**). It is enclosed by a modern galvanized steel security fence, with gated entry to the north and south ends.

6.8 Bridge 7: Concrete Bridge

6.8.1 Accommodation Bridge 7, similar to Bridges 3 and 4, provided vehicular access across the River Beam. It was built as an unsupported single span beam bridge constructed on concrete girders and built off concrete abutments. The principal difference between this bridge and Bridge 4, was the use of solid brickwork for the bridge parapets (**Plate 14**). The parapets were topped with plain concrete copings, while the bridge deck was dressed with tarmac for a roadway (**Plate 15**). The bridge was positioned immediately north of the London, Tilbury, Southend railway corridor (**Figure 2**).

6.9 Building 8: Storm-water Pump House

6.9.1 The pump house is located just west of Thames Avenue and the Beam River and close to the southern site boundary, adjacent to Sierra Drive (**Figure 2**). It was built with a rectangular floor and with brick elevations rising to an over-sailing concrete slab flat roof (**Plates 16** and **17**). The walls were built in red brick laid in Flemish bond with queen closers to the openings. Large fixed window openings, with heavy concrete lintels and lighter concrete sills occupy the bulk of the longer east and west elevations (**Plate 16**). A wide door with a similar lintel and a roller type door, lies central to the north wall and immediately below a window, of the same width, set high in elevation (**Plate 17**). The south wall is blind. The upper brick courses and therefore the present roof give the impression of a rebuild, although an engineering drawing (Drawing No. 1501/7025A) dated 1956 for electrical installations (**Figure 7**), shows a flat roof as at present. It also depicts an arrangement of in line pumps, each powered by 20 horse power Star Delta electric motors. The four large bore steel, storm water pipes extend through circular openings, turned in brick, at the base of the east wall and connect with the outfall. The section shows the sub-floor storm water chamber, the intake to the pumps and an adjoining control chamber.

6.10 Building 9: Barrier Gatehouse

6.10.1 This comprises the concrete base to a former gatehouse (**Plate 19**), situated on the east side of a wide gated vehicular entry along the north of the Site, east of Thames Avenue (**Figure 2**).

6.11 Building 10: Gas Meter House

6.11.1 A large brick-built flat roofed Gas Meter House is situated along and to the north of Sierra Drive (**Figure 2**). It is presently obscured by vegetation on all sides so access was very limited (**Plate 20**). Plans (Drawing No. 1501/1135, **Figure 8**) detailing Foundation Details, and drafted in April 1958, show that the building was built over four equal sized bays and off an reinforced concrete slab (Granolithic Screed with mesh reinforcement) and with a valve pit along its southern wall. Drawing 1501/? (**Figure 9**) shows that the roof was constructed using pre-cast concrete units, incorporating a pair of raised square roof lights to the rear of a parapet wall and the metre house contained four metering units.

6.12 Building 11: Gatehouse No. 1, Search Lodge and Mess Room

6.12.1 A single storey, flat-roofed and brick built former gatehouse and lodge is laid out on an L-shaped footprint, along the south side of Sierra Drive (**Figure 2**). The brick elevations were built using red brickwork laid in stretcher bond and incorporate concrete lintels to openings and piers (**Plate 21**). The over-sailing slab roof is covered in bitumen roofing felt. A wide, full height blocked opening is central to the southern elevation, while a similar opening, with internal concertina-type barrier railing, is present in the corresponding bay to the north wall. The eastern bays (Gate House) were glazed from half-wall height to ceiling level (**Plate 22**), while smaller discrete windows and door openings present across the western bays or Search Lodge, light the Mess Room and the Search Room. A drawing 1501/? (**Figure 10**) dated October 1957, although of bad quality, illustrates Gatehouses 1, 1A, 2 and 2A showing the internal layout of Gatehouse No. 1. Clearly theft from the plant, from employees or outside contractors was taken as a serious issue.

6.13 Building 12: Sewage Pump House

6.13.1 A small rectangular plan, single storey and flat roofed building is located to the north of Sierra Drive (**Figure 2**). The red brick elevations were built in English bond, in a hard cement mortar and the flat roof is a concrete slab. A large (blocked) window opening with patent glazing, built with a heavy concrete lintel and lighter sill over a concrete clad apron, forms the bulk of the northern elevation (**Plate 23**). Door openings are present within the east and west elevations (**Plate 24**), while the south elevation to Sierra Drive is built blind. The Sewage Pump House is illustrated in plan and section on drawing 1501/? (**Figure 11**) on which the date is obscured, but is entitled Sewage Pump House, General Arrangement (for Briggs Motor Bodies Ltd). It shows the building housed three 'Barrington' sewage pumps and incorporated a deep brick built 'chamber' in the south-eastern corner which connected with an adjacent external chamber. The Sewage Pump House shares similar architectural characteristic with the Storm Water Pump House (Building 8; **Plates 16** and **17**), which was built around 1956-8.

6.14 Building 13: Fire Station and Oil Storage (Plates 25- 37; Figs 12, 13 &)

6.14.1 Located towards the north-western boundary of the site, east of Kent Avenue and south of Ripple Road, the Fire Station comprised a small group of three separate buildings and a fire drill tower (**Figures 2** and **14**). The Fire Station accommodated the mobile appliances used by the fire protection department of the Ford Motor Company, a department wholly responsible for all fire precautions within the plant. However fire protection within the main assembly plant was based upon a sprinkler system (within all main buildings) supported by *c*.80 first aid hose reels, 64 main hydrants and small hand appliances located on every building stanchion (Lux et al, 1960).

6.14.2 The north-eastern of the three buildings is a modern blockwork and timber open-sided range with shallow pitched roof covered in corrugated iron (**Figures 2** and **14**). The range, probably built for staff vehicles or storage (as now), comprises three bays, the northern two equipped with tall garage-like double doors and the southernmost, rebuilt with a smaller opening (**Plate 25**). The two other buildings are much more substantial, the larger range to the west is the fire station.

6.14.3 Drawing No. 1501/79, dated July 1957, (**Figure 12**) shows a basic outline of the Fire Station, Oil store and CO2 store. This drawing does not show the western half of the fire station (Rooms 8 to 11 on **Figure 14**) or the garage/store which were added later.

6.14.4 The fire station now has three full height door openings, with red painted concertina-type doors in its south facing elevation (**Figures 2** and **14**; **Plate 27**). The western later openings are paired side by side and within a concrete frame of lintel and jambs below a corrugated panel up to roof level. The other earlier opening is set apart at a slight distance to the east, separated by a red brick elevation containing a ground floor window. The concrete surround to the opening is identical to those to the west and the intermediate window. The fire station has red brick elevations in stretcher

bond with a flat roof obscured by a low brick parapet wall with simple copings. Two double width door openings in the on the western later side of the north elevation lie below a pair of wide, rectangular, fixed glazed, iron framed casements of 6x2 lights with concrete lintels and sills, which light rooms 9 and 11 at the rear of the appliance house from the darker north side (**Figure 14**; **Plate 26**). The fire drill tower lies immediately north of the appliance house and is an open steel frame built over two stages (**Figure 14**; **Plate 26**). It is built off a small square brick structure used as the CO2 store.

6.14.5 Internal access into the Fire Station, via an original doorway east of centre in the southern elevation (**Plate 27**), opens into a north-south corridor (**Figure 14**; **Plate 31**). Immediately to the west is a central block of brick and concrete framed offices, a WC, a shower and a boiler room (rooms 2-8; **Plate 37**). Further to the west, accessed via an internal passage (**Plate 33**) or externally by the full height concertina doors, are the parking and maintenance bays for two appliances (Room 10), which were built later. Room 10 was 5 bays in length and was naturally lit by a large, central glazed roof light (**Plates 29** and **30**) set within a flat shuttered concrete ceiling structure. The central range of offices and rooms were original features and were built with brick elevations and standard mild steel patent glazing. An integral steel ladder built into the northern end of the WC (room 5), gave access to an upper floor, open-sided to the east (**Plates 33** and **36**), which was reserved for electrical switchgear and telecoms (**Plates 34** and **35**). Another original brick-built room, used as a kitchen (room 12), was located to the east of the passage and at the northern end of the building. Two modern offices (Rooms 13 and 14) with lightweight timber and plasterboard walls (**Plate 32**) had been built into the space formerly used for an appliance or vehicle hence the full height concertina door. This area (as room 10) was also top lit by a large roof light.

6.14.6 The 1957 (**Figure 12**) shows that the fire station was originally built with offices along its west side and double concertina doors for the appliance in the eastern part of the building (**Figure 14**). This building was extended presumably in the 1960s to garage two further appliances with two further rooms and a boiler room (Rooms 8, 9 and 11) to the north.

6.14.7 The eastern building is the Oil Storage building and is a two storey flat roof range with a part basement (**Figures 2** and **14**; **Plate 28**). It was built with its long elevations facing east or backing onto the appliance house. Its walls are similarly built in red brick laid in stretcher bond. It has five first floor window openings framed by concrete lintels and sills in its east elevation. A pedestrian door sheltered by a simple brick built porch is present within the northern bays, while a tall opening lies off centre to the southern end wall. The height of this opening shows the disparity in floor heights, the taller ground floor needed to accommodate the various oil tanks used for storage. When first built (*c.*1957-8) the oil store incorporated a number of oil storage tanks and circulating pumps for the purposes of supplying various grades of oil to the new main assembly building, for gearboxes and axles etc. The oil was pumped via a distribution system installed at high level to dispensing points adjacent to the assembly lines. To ensure a free flow of the oil, it was heated by steam and electrically heated tracer lines (Lax et al, 1960). The oil store originally contained eight storage tanks, two with a capacity of 3000 gallons and six smaller tanks with a capacity of 750 gallons. The oil pumps, by Brooke, were driven by 5 horsepower motors manufactured by Crompton & Parkinson (Essex). A plan and elevation drawing of the oil store (Drawing No. 1501/6190, **Figure 13**) drafted in April 1958 shows the layout of the tanks and possibly a prototype version of the enclosing building, designed with a simple truss roof.

7 DISCUSSION

7.1.1 The upstanding utility buildings and other ancillary structures within the former Ford Paint Trim and Assembly plant to the west of Thames Avenue and the Traffic Compound site to the east appear to have survived because of their continued use. The accommodation bridges (Bridges 3, 4 and 7) still provide access between the two site areas and across the River Beam. Most of the other remaining structures were built during the initial development of the PTA site during the mid to late 1950s and are associated with utilities such as gas, water or drainage.

7.1.2 The acquisition of Briggs Motor Bodies Ltd by Ford-Britain led to a number of significant changes at Dagenham and in 1954 Sir Patrick Hennessy launched an ambitious expansion and modernisation programme. A critical element of that scheme was the remodelling and re-equipping of the Briggs plant (known as the stamping plant) and in 1954, the layout, design and construction of a new Paint, Trim and final Assembly (PTA) plant on a former 48 acre Ford sports ground, east of Kent Avenue. The majority of the recorded buildings and structures were built to service this new plant and the adjacent Traffic Compound sited to the east of Thames Avenue. The Fire Station (Building 13) accommodated the mobile appliances used by the Fire Protection Department of the Ford Motor Company, a department responsible for all fire precautions across Ford sites, while the adjoining Oil Store held a number of large oil storage tanks and circulating pumps for the purposes of supplying various grades of oil, transmission and axle oils, to the new main assembly building. There was a requirement to elevate both surface water from collected by extensive plant roofs and sewage by pumping to avoid the site flooding due primarily to the site being low lying marshland with a potential for flooding. These issues were dealt with by providing a storm water pump house (Building 8) and sewage pump house (Building 12) as part of the original site layout. Access across the River Beam from Thames Avenue into the Traffic Compound site to the east, was initially provided by the iron girder, single-span beam bridge (Bridge 3), although this was later replaced, probably due to increases in axle weights and size of transport vehicles, by the modern concrete and steel bridges (Bridges 4 and 7).

7.1.3 As other factories and divisions of Ford elsewhere in Britain and Western Europe took up an increasing share of production during the 1970s, so the importance of Dagenham declined. While engine production continued to be a mainstay of the plant's output, the number of car lines built at the plant fell to one (the Fiesta) in the 1990s. Owing to falling sales and over-capacity in Europe, the company announced in early 2000 that it would axe 1,500 jobs at Dagenham and in the same year the company announced that the PTA plant would close in 2002, with the loss of a further 1,900 jobs. The company focused instead on the construction of a new diesel engine plant, which continues to operate to the present. In 2004, the redundant PTA plant was demolished.

7.1.4 It is recommended that the results of the built heritage recording are included in a brief summary in the *London Archaeologist* Round-up. It is considered that no further analysis is required.

8 ACKNOWLEDGEMENTS

8.1.1 Pre-Construct Archaeology Limited would like to thank RPS CgMs for commissioning the project. The project was managed for Pre-Construct Archaeology Limited by Charlotte Matthews. The photographic survey was carried out by Adam Garwood. Guy Thompson researched and wrote much of the historical background, while Adam Garwood wrote the rest of the report. The Illustrations were prepared by Hayley Baxter.

9 BIBLIOGRAPHY

AAF 2007 '*Archaeological Archives: A Guide to Best Practice in creation, compilation, transfer and curation*'

Burgess-Wise, D. 2001. *Ford at Dagenham*

CIfA 2014a. *Standards and Guidance for the Archaeological Investigation and Recording of Standing Buildings or Structures* Chartered Institute for Archaeologists

CIfA 2014b. *Standard and Guidance for the Preparation of Archaeological Archives.* Chartered Institute for Archaeologists

Historic England (2016) '*Understanding Historic Buildings: A guide to good recording practice'*

Lax, D. Bunclark, F & Struct, M. 1960. *The Design and Construction of the new Assembly Building for the Ford Motor Company Ltd, Dagenham*

Matthews, C., 2017. *Former Ford Assembly Plant Site, Beam Park, New Road (A1306), London Borough of Havering/ Barking and Dagenham. Written Scheme of Investigation for Historic Building Recording* Pre-Construct Archaeology Unpublished Report

Peter Brett Associates (PBA) 2017, *Beam Park, London Boroughs of Barking & Dagenham and Havering. Environmental Statement*. (Chapter 13 'Archaeology and Cultural Heritage' by RPS CgMs).

Powell, W.R. (Ed) 1966. *A History of the County of Essex: Volume 5*. Originally published by Victoria County History. URL: http://www.british-history.ac.uk/vch/essex/vol5

RPS December 2016, *Beam Park Riverside Havering/ Barking & Dagenham. An Historic Environment Desk based Assessment*

RPS CgMs 2017, *Beam Park. London Riverside. Archaeological Strategy and Scheme of Resource Management*.

Taylor, J. & Brown, G., 2009. *Fieldwork Induction Manual: Operations Manual I. Pre-Construct Archaeology*.

Primary Sources

The National Archives (TNA)

BT 31/37769/303263 Briggs Motor Bodies Limited. Incorporated in 1935. Dissolved in 1959

BT 64/5205 Ford Motor Company Ltd Dagenham. Acquisition of total shares by Ford USA, 1960

HO 192/1486 Ministry of Home Security Light Engineering Industry London Factory Survey. Plant Investigation: Briggs Motor Bodies Ltd, Dagenham, 1940-1944

APPENDIX 1: OASIS FORM

OASIS ID: preconst1-299467

Project details	
Project name	Beam Park Built Heritage Recording
Short description of the project	Pre-Construct Archaeology was commissioned by RPS Group on behalf of Countryside Properties (UK) Limited to carry out built heritage recording at the former Ford Assembly Plant site (Beam Park Riverside) in the London Boroughs of Havering/Barking and Dagenham. The Historic England Level 1-2 recording was focused upon redundant buildings and structures that survive within the Site (centred on OS NGR TQ 50021 82962). The Site presently comprises predominately hard standing associated with the slab of the former (demolished 2004) Ford Paint Trim Assembly (PTA) factory. The upstanding buildings and structures appear to have survived because of their continued use. Three accommodation bridges still provide access across the River Beam. Most of the other remaining structures were built during the initial development of the PTA site during the 1950s and are associated with utilities. The acquisition of Briggs Motor Bodies Ltd by Ford-Britain led to a number of significant changes at Dagenham and in 1954 an ambitious expansion and modernisation programme was launched, which included the layout, design and construction of a new PTA plant on a former Ford sports ground. The majority of the recorded buildings and structures were built to service this new plant. The Fire Station accommodated the mobile appliances used by the Fire Protection Department of the Ford Motor Company, while the adjoining Oil Store supplied various grades of oil to the new main assembly building. A 1950s storm water pump house and sewage pump house prevented the site from flooding.
Project dates	Start: 18-10-2017 End: 19-10-2017
Previous/future work	No / No
Any associated project reference codes	THV17 - Sitecode
Type of project	Building Recording
Site status	Area of Archaeological Importance (AAI)
Monument type	FIRE STATION Modern
Monument type	PUMP HOUSE Modern
Monument type	COMPOUND Modern
Monument type	BRIDGE Modern
Monument type	METER HOUSE Modern
Monument type	GATEHOUSE Modern
Methods & techniques	'"Photographic Survey"'
Prompt	pre-planning

Project location	
Country	England
Site location	GREATER LONDON BARKING AND DAGENHAM BARKING AND DAGENHAM Former PTA (Paint, Trim, Assembly Plant) site, Beam

	Park, New Road (A1306),
Study area	0 Square metres
Site coordinates	TQ 50021 82962 51.525110513926 0.162802918289 51 31 30 N 000 09 46 E Point
Project creators	
Name of Organisation	Pre-Construct Archaeology Limited
Project brief originator	NA
Project design originator	Charlotte Matthews
Project director/manager	Charlotte Matthews
Project supervisor	Adam Garwood
Type of sponsor/funding body	Countryside Properties
Project archives	
Physical Archive Exists?	No
Digital Archive recipient	LAARC
Digital Media available	"Images raster / digital photography"
Paper Archive Exists?	No
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Built Heritage Recording at the Former Ford PTA (Paint, Trim, Assembly Plant) Site, Beam Park, New Road (A1306), London Borough of Havering/ Barking and Dagenham
Author(s)/Editor(s)	Garwood, A
Other bibliographic details	PCA Report No. R13113
Date	2017
Issuer or publisher	Pre-Construct Archaeology Limited
Place of issue or publication	London Office
Description	A4 PDF
Entered by	Charlotte Matthews (cmatthews@pre-construct.com)
Entered on	5 December 2017

Contains Ordnance Survey data © Crown copyright and database right 2017

© Pre-Construct Archaeology Ltd 2017

05/12/17 HB

Figure 1
Site Location
1:25,000 at A4

Based on Survey data supplied by the client, 2017

© Pre-Construct Archaeology Ltd 2017

08/11/17 HB

Figure 2
Detailed Site Location
showing Directions of Plates
1:4,000 at A3

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 3
Chapman & Andre Map of 1777
approx 1:20,000 at A4

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 4
Ordnance Survey, 1950
1:5,000 at A4

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 5
PTA Site Plan c.1956-57
1:4,000 at A4

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 6
Estate Sketch Plan c.1971
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 7
Plan and Section of Storm Water Pump House (Building 8)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 8
Plan and Sections of Gas Meter House (Building 10)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 9
Plan and Sections of Gas Meter House (Building 10)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 10
Plan, Sections & Elevations of Gatehouse No.1 and Search Lodge (Building 11)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 11
Plan & Section of Sewage Pump House (Building 12)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 12
Drainage Plan of Fire Station and Oil Storagae (Building 13)
not to scale

© Pre-Construct Archaeology Ltd 2017
08/11/17 HB

Figure 13
Plan & Sections of Oil Storage (Building 13)
not to scale

© Pre-Construct Archaeology Ltd 2017

05/12/17 HB

Figure 14
Plan of Fire Station with Plate Directions
1:200 at A4

Plate 1 Building 1: looking south

Plate 2 Building 1: looking south-east

Plate 3 Gas plant to rear of Building 1

Plate 4 Building 2: looking north-east

Plate 5 Bridge 3: looking north-west

Plate 6 Bridge 3: looking north

Plate 7 Bridge 3: Bridge deck, looking east

Plate 8 Bridge 4: looking north-east

Plate 9 Bridge 4: Bridge deck, looking west

Plate 10 Building 5: Foundation, looking north

Plate 11 Building 6: Compound looking south-west

Plate 12 Building 6: Compound looking north-east

Plate 13 Building 6: View south inside compound

Plate 14 Bridge 7: looking south-west

Plate 15 Bridge 7: Bridge deck, looking east

Plate 16 Building 8: Storm Water Pump House, looking east

Plate 17 Building 8: Storm Water Pump House, looking south

Plate 18 Building 8: Storm Water Pump House, Internal

Plate 19 Building 9: Foundation of Barrier Gatehouse, looking north-west

Plate 20 Building 10: Gas Meter House, looking north

Plate 21 Building 11: Gate House No. 1 and Search Lodge, looking north-east

Plate 22 Building 11: Gatehouse No. 1, looking west

Plate 23 Building 12: Sewage Pump House, looking south

Plate 24 Building 12: Sewage Pump House, looking east

Plate 25 Building 13: Garage/store looking east

Plate 26 Building 13: Appliance house and Drill Tower, looking south-east

Plate 27 Building 13: Appliance House looking north

Plate 28 Building 13: Oil Storage, looking north-west

Plate 29 Building 13: Appliance Shed (room 10) looking north-west

Plate 30 Building 13: Appliance Shed (room 10) looking south-east

Plate 31 Building 13: Modern offices (right) inserted into eastern bays (formerly for appliance)

Plate 32 Building 13: Modern Office (room 14) looking north

Plate 33 Building 13: Central brick and concrete framed offices, with switchgear and telecoms above

Plate 34 Building 13: Electrical switch gear above central offices, looking south-west

Plate 35 Building 13: Electrical switch gear above central offices, looking south-east

Plate 36 Building 13: Floor above central offices looking north

Plate 37 Building 13: Office (room 4)

P C A

PCA CAMBRIDGE
THE GRANARY, RECTORY FARM
BREWERY ROAD, PAMPISFORD
CAMBRIDGESHIRE CB22 3EN
t: 01223 845 522
e: cambridge@pre-construct.com

PCA DURHAM
UNIT 19A, TURSDALE BUSINESS PARK
TURSDALE
DURHAM DH6 5PG
t: 0191 377 1111
e: durham@pre-construct.com

PCA LONDON
UNIT 54, BROCKLEY CROSS BUSINESS CENTRE
96 ENDWELL ROAD, BROCKLEY
LONDON SE4 2PD
t: 020 7732 3925
e: london@pre-construct.com

PCA NEWARK
OFFICE 8, ROEWOOD COURTYARD
WINKBURN, NEWARK
NOTTINGHAMSHIRE NG22 8PG
t: 01636 370410
e: newark@pre-construct.com

PCA NORWICH
QUARRY WORKS, DEREHAM ROAD
HONINGHAM
NORWICH NR9 5AP
T: 01223 845522
e: cambridge@pre-construct.com

PCA WARWICK
UNIT 9, THE MILL, MILL LANE
LITTLE SHREWLEY, WARWICK
WARWICKSHIRE CV35 7HN
t: 01926 485490
e: warwick@pre-construct.com

PCA WINCHESTER
5 RED DEER COURT, ELM ROAD
WINCHESTER
HAMPSHIRE SO22 5LX
t: 01962 849 549
e: winchester@pre-construct.com

REGISTERED ORGANISATION CIfA

APPENDIX 3

Plates

1.St Helens and St Giles Church looking SE

2. St Helens and St Giles Church looking SW

3.The Vicarage looking NW from St Helens and St Giles Church

4.View NW towards Napier Road from Bridge Road within CA

5.CA looking NW from church to gap between the Vicarage and public house

6.View looking SW through gap N. side of Vicarage

7. Screening of church looking NE

8.Rainham Hall looking NE

9. Rainham Hall looking W

10. Trees screening of Rainham Hall looking E from Broadway

11.Broadway looking NW from Phoenix Pub

12. View looking N from beyond NW edge of CA

13. looking W from beyond the N edge of the CA	14.View W from Lamson Road
15. Looking SE towards CA from W. side of Lamson Road at river crossing	16.Looking NE towards site from the W side of Lamson Road (beyond NW edge of of the CA)
17. Looking SE towards CA from W. side of Lamson Road	18.Looking NW through gap N. side of Vicarage

19.View W showing screening trees NW of pub (New Angel Inn)	20.View SE along Bridge Road/Broadway towards the church
21.View NW towards site from within the northern extent of Rainham CA (showing screening)	22. View NW towards the site from the elevated railway bridge at the south-west edge of Rainham CA
23. View N of Rainham Church from the elevated railway footbridge bridge to the west side of the CA (note the church spire is level with the tree canopy)	24. View SE towards Rainham from the elevated Marsh Way bridge showing no current inter-visibility with Rainham CA

25. Industrial landscape (Rainham Steel) SE of the site

26. View SW towards Rainham CA from intermediate location SE of the site

27. Cross Keys Public House (RPS 158) Dagenham Village CA

28. Church of St Peter and St Paul (RPS 156) Dagenham Village CA

29. View towards Site form W. side of church

30. View towards Site form churchyard Dagenham

Dagenham Village CA	Village CA
31. View of church from S edge of CA looking N	32. Houses to south side of Dagenham Village CA
33. Tower block to west side of Dagenham Village CA	34. View of church from S. end of Church Street
35. View towards the Site from footpath to north edge of Dagenham Village CA	36. Bretons (RPS 173) east facing elevation – looking SW

37. N looking view of Bretons from playing field edge to south.	38. South facing aspect of Bretons (RPS 173)
39. View towards site from S side of Bretons walled garden	40. Sub Station of Essex Water Company (RPS 167) looking N
41. View from S. side of RPS 167 towards site	42. Restricted view S from Sub Station of Essex Water Company (RPS 167)

43. Stoneford Cottage and Railings (RPS 167) looking S

44. Crossness Pumping Station (looking S)

45. Crossness Pumping Station (looking E)

46. High river wall at Crossness Pumping Station (looking W.)

47. View NE over Thames from W. of Crossness PS

48. View NE towards the site from Lesnes Abbey

49. Lesnes Abbey standing remains looking NW	50. View from higher ground E of abbey remains NE towards the proposal site (turbines visible between modern towers)

MAKING
COMPLEX
EASY

rpsgroup.com