Heathrow

EASTERLY ALTERNATION INFRASTRUCTURE PROJECT

Environmental Impact Assessment
Environmental Statement, Volume III
Appendix 11.1: Archaeology Desk Study

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Heathrow

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1. Introduction

1.1 Project background

1.1.1 WSP UK Limited has been commissioned by Heathrow Airport Limited to carry out an Archaeology Desk Study) in relation to the Proposed Development in the north-western part of Heathrow Airport ('the Airport'), in the London Borough of Hillingdon (National Grid Reference/NGR 505172, 176250; **Figure 11.1** in **Appendix 11.2**). The Proposed Development comprises of two distinct components. One relates to the construction of two new Runway Access Taxiways (RATs) onto Runway 09L, along with connector taxiways, and changes to the aircraft stands at the western end of Runway 09L (**Chapter 3: Description of the Proposed Development**). The other relates to the construction of a noise barrier to the north-west of the Airport. The Proposed Development would largely involve shallow excavation of about 1m depth, with a maximum depth of up to 2m for drainage connections for the development of the airfield infrastructure, removal of topsoil and groundworks to form the new airfield infrastructure, and up to 2.5m deep piling for the noise barrier (**Chapter 3: Description of the Proposed Development**).

1.2 Scope

1.2.1 This Appendix provides a baseline of known or potential buried heritage assets (archaeological remains) and above ground heritage assets (structures and landscapes of heritage interest) within or immediately around the Proposed Development (hereafter the 'site'). These are identified as having a degree of significance meriting consideration in planning decisions and includes designated heritage assets and assets identified by the local planning authority (including local listing), and non-designated assets.

1.2.2 Professional expert opinion has been used to assess heritage significance, based on historic, archaeological, architectural or artistic interest, considering past ground disturbance which may have compromised survival.

1.2.3 The assessment forms a technical appendix in support of **Chapter 11: Historic Environment** and is required in relation to the planning process in order that the local planning authority (LPA) can formulate an appropriate response in the light of the impact upon any known or possible heritage assets.

1.3 Aims and objectives

1.3.1 The aim of this appendix is to assess the potential impact of the Proposed Development on below ground archaeological remains and to provide a suitable strategy to mitigate any negative effects, if required, as part of a planning application. The aim is achieved through the following objectives:

- Identify the presence of any known or potential heritage assets that may be affected by the proposals;

- Describe the significance of such assets, in accordance with the National Planning Policy Framework (NPPF), considering factors which may have compromised asset survival;
- Assess the likely impacts upon the significance of the assets arising from the proposals; and
- Provide recommendations for further investigation and/or mitigation where required, aimed at reducing or removing completely any adverse effects.

2. Planning framework

2.1 Planning policy

National Planning Policy Framework

2.1.1 The National Planning Policy Framework[1] sets out the Government's planning policies for England and provides guidance for planning authorities and developers on the conservation and investigation of heritage assets. The primary objective of the NPPF is to foster the delivery of sustainable development, not to prevent it.

2.1.2 The historic environment is specifically dealt with in section 16 of the NPPF. The policies set out in the NPPF should be interpreted and applied locally to meet local objectives. The NPPF is designed to provide a clear framework to make sure that heritage assets are conserved or enhanced in a manner that is proportionate with their significance.

2.1.3 The NPPF sets out the importance of assessing the significance of heritage assets that may be affected by a proposal. Paragraph 200 of the NPPF states that local planning authorities, when determining applications, should require the applicant to "*describe the significance of any heritage assets affected, including any contribution made by their setting*". Paragraph 200 goes on to state that "*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*".

2.1.4 Heritage assets are defined in Annex 2 of the NPPF as:

> "*[A] building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. It includes designated heritage assets and assets identified by the local planning authority (including local listing).*" Annex 2 also defines significance as "*the value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting*". Setting is defined 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".*

2.1.5 Paragraph 203 of the NPPF states that local planning authorities should consider the following when determining planning applications:

- "*[T]he desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;*

[1] Ministry of Housing, Communities and Local Government (2023). *The National Planning Policy Framework (NPPF)*. (online) Available at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf (Accessed 03 October 2024)

- *The positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and*
- *The desirability of new development making a positive contribution to local character and distinctiveness".*

2.1.6 Paragraph 206 details the notion that heritage assets can be harmed or lost through alterations, destruction, or from development within their setting. These paragraphs identify that this harm ranges from less than substantial to substantial. The emphasis should be on the conservation of designated heritage assets, regardless of whether any potential harm is considered to be substantial or less than substantial (paragraph 206). As a rule, the more important the heritage asset is, the greater the weight should be on its conservation. Assets of the highest significance are 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 (paragraph 206).

2.1.7 Paragraph 207 of the NPPF goes on to state that development consent should be refused where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, unless the application demonstrates that the proposed development will result in substantial public benefits that outweigh the harm or loss to the heritage asset. Where less than substantial harm is caused, this should also be weighed against the public benefits of the proposal.

2.1.8 With regard to applications concerning 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*" (paragraph 209).

Local planning policy

2.1.9 A summary of the local planning policies relevant to this appendix are given in **Table 2.1**.

Table 2.1 Summary of relevant local planning policies

Policy reference	Policy summary
The London Plan 2021[2] Policy HC1 Heritage conservation and growth	The London Plan 2021 states that development proposals should be sympathetic to the significance of heritage assets and seek to avoid harm in the design process.
London Borough of	The London Borough of Hillingdon Local Plan Strategic Objective S01 outlines the need to conserve and enhance the Borough's heritage and their settings by ensuring new development, including changes to the public realm, are of high quality design, appropriate to the significance of the heritage asset, and seek to maintain and enhance the contribution of built, landscaped and buried heritage to London's environmental

[2] Mayor of London, (2021). *The London Plan – The Spatial Development Strategy for Greater London.* Available at https://www.london.gov.uk/sites/default/files/the_london_plan_2021.pdf (Accessed 03 October 2024).

Policy reference	Policy summary
Hillingdon Local Plan[3] Strategic Objective S01	quality, cultural identity and economy as part of managing London's ability to accommodate change and regeneration.
London Borough of Hillingdon Local Plan Strategic Policy HE1[4]	The London Borough of Hillingdon (LBH) has a commitment to the conservation and enhancement of heritage of the Borough's historic environment, including historic village cores, designated heritage assets, locally listed buildings and archaeologically significant areas. This includes actively encouraging the regeneration of heritage assets, promoting public awareness and encouraging the re-use and modification of heritage assets where appropriate.
London Borough of Hillingdon Local Plan Development Management Policy DMHB 1	LBH will expect development proposals to avoid harm to heritage assets except where: development sustains an asset and puts it into a viable and appropriate use; the development will result in a public benefit which outweighs any harm. Developments affecting heritage assets should make a positive contribution to the local character and should respect the character of the asset and its setting.
London Borough of Hillingdon Local Plan Development Management Policy DMHB 2	Listed Buildings and Listed Building Consent. Substantial harm to or total loss of significance of a statutory Listed Building will only be permitted in exceptional circumstances
London Borough of Hillingdon Local Plan Development Management Policy DMHB 3	Presumption in favour of the retention of Locally Listed Buildings.
London Borough of Hillingdon Local Plan Development Management Policy DMHB 7	Archaeological Priority Areas, Archaeological Priority Zones and requirements for archaeological investigation and recording. LBH will ensure that archaeological remains within areas designated as Archaeological Priority Areas should not be disturbed. Where this cannot be avoided, satisfactory measures must be taken to ensure the completion of archaeological investigation and recording in advance of development works.
London Borough of Hillingdon	Registered Historic Parks, Gardens and Landscapes. States that "*applications which impact detrimentally on the significance of a registered park or garden will normally be refused*".

[3] London Borough of Hillingdon, (2012). *Hillingdon Local Plan*. Available at: Local Plan - Hillingdon Council (Accessed 10 May 2024).
[4] London Borough of Hillingdon, (2012). *Hillingdon Local Plan*. Available at: Local Plan - Hillingdon Council (Accessed 10 May 2024).

Policy reference	Policy summary
Local Plan Development Management Policy DMHB 8	

2.2 Heritage sector guidance

2.2.1 The assessment has been carried out in accordance with the requirements of the National Planning Policy Framework[1] and to standards specified by the Chartered Institute for Archaeologists (CIfA)[5] and Historic England[6, 7].

Historic England guidance

2.2.2 Historic England has published a series of Good Practice Advice (GPA). Those of most relevance are GPA2 - Managing Significance in Decision-taking (March 2015) and GPA3 - The Setting of Heritage Assets (2nd Edition) (December 2017).

2.2.3 GPA2 emphasises the requirement to having a knowledge and understanding of the significance of heritage assets likely to be affected by the development and that the "*first step for all applicants is to understand the significance of any affected heritage asset and, if relevant the contribution of its setting to its significance*" (paragraph 4). This information is also useful to the local planning authority in pre-application engagement with an applicant and ultimately in decision making (paragraph 7).

2.2.4 GPA3 provides advice on the setting of heritage assets. Setting is as defined in the NPPF and forms the surroundings in which a heritage asset is experienced. Components of a setting can make positive or negative contribution to the significance of an asset and affect the ways in which it is experienced. GPA3 and the NPPF state that setting is not fixed and that it may change as the asset and its surrounding evolve. Setting can be extensive and can overlap with the setting of other heritage assets, particularly in urban areas or historic landscapes. While not limited to views, the contribution of setting to the significance of an asset is often expressed in this way, and paragraph 11 of GPA3 identifies those views that contribute to understanding the significance of assets, such as designed views those that were designed or where there are associations with other heritage assets.

[5] Chartered Institute for Archaeologists (CIfA) (2020). *Standards and guidance for historic environment desk-based assessment*. Reading.
[6] Historic England, (2015). *Managing Significance in Decision-Taking in the Historic Environment*. *Historic Environment Good Practice Advice in Planning: 2* (online) Available at: https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/ (Accessed 03 October 2024)
[7] Historic England, (2019). *Statements of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12* (online) Available at: https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/ (Accessed 03 October 2024)

Chartered Institute for Archaeologists

2.2.5 The baseline study has been undertaken in accordance with guidance published by the Chartered Institute for Archaeologists, specifically the standard and guidance for historic environment desk-based assessment[5].

3. Sources and methodology

3.1 Data sources

3.1.1 In order to determine the full historic environment potential of the Site, a broad range of standard documentary and cartographic sources, including results from any archaeological investigations in the Site and a 500m radius Study Area around it were examined in order to determine the likely nature, extent, preservation and significance of any known or possible heritage assets that may be present within or adjacent to the Site.

3.1.2 **Table 3.1** provides a summary of the key data sources. Occasionally there may be reference to assets beyond this Study Area, where appropriate (e.g., where such assets are particularly significant and/or where they contribute to current understanding of the historic environment).

Table 3.1 Data sources consulted

Source	Data	Comment
Historic England	National Heritage List for England (NHLE) with information on statutorily designated heritage assets.	Statutory designations (scheduled monuments; statutorily listed buildings; registered parks and gardens; historic battlefields) can provide a significant constraint to development.
Hillingdon Council, London	Historic Environment Record (HER).	Primary repository of archaeological information. Includes information from past investigations, local knowledge, find spots, and documentary and cartographic sources
Historic England	National Record of the Historic Environment (NRHE).	National database maintained by Historic England. Not as comprehensive as the HER but can occasionally contain additional information. Accessible via Pastscape website. This was consulted for the Site and its immediate vicinity only.
London Borough of Hillingdon	Archaeological priority area.	Area of interest identified by the local authority. There is likely to be a requirement for archaeological investigation (initially a desk-based assessment) as part of any planning application.
Hillingdon Council, London	Locally listed building.	Building of local importance designated by the local planning authority due to architectural and/or historic significance and a positive contributor to the character of an area. Whilst not statutorily protected, a building's inclusion on the list means that it is a material consideration in the planning process.

Source	Data	Comment
British Geological Survey (BGS)	Solid and drift geology digital map; online BGS geological borehole record data8.	Subsurface deposition, including buried geology and topography, can provide an indication of potential for early human settlement, and potential depth of archaeological remains.
Internet	Web-published local history; Archaeological Data Service.	Many key documentary sources, such as the Victoria County History, the Survey of London, and local and specialist studies are now published on the web and can be used to inform the archaeological and historical background. The Archaeological Data Service includes an archive of digital fieldwork reports.
National Library of Scotland9	Historic Maps (online).	19th and 20th century Ordnance Survey Maps
The Applicant	Project acquired geotechnical data.	The information can be very useful in enhancing understanding of the nature and depth of natural geology (see above) and any made ground, whether it is modern or of potential archaeological interest.
The Applicant	Topographical survey data.	Survey data can provide an indication of the impact of past land use, e.g. ground raising or lowering, which is useful for understanding possible truncation and likely depth of archaeological remains.

3.1.3 **Figures 11.1** and **11.2** (see **Appendix 11.2: Historic Environment Figures**) shows the location of known historic environment features within the Study Area, as identified by the sources above, or during the course of research for this assessment. These have been allocated a unique 'assessment' reference number (**A1, 2**, etc.), which is listed in a gazetteer in **Annex A** of this appendix and is referred to in the text. Where there are a considerable number of listed buildings in the Study Area, only those within the vicinity of the Site (i.e. within 50m) are included, unless their inclusion is considered relevant to the study.

[8] British Geological Survey, (2023). *Geology Viewer* [online] Available at: https://geologyviewer.bgs.ac.uk/?_ga=2.138491699.1471255691.1709641751-501424887.1709641750 [Accessed 17 September 2024]

[9] National Library Scotland, (2023). [online] Available at: https://maps.nls.uk/geo/explore/side-by-side/#zoom=13.8&lat=51.47170&lon=-0.46224&layers=168&right=ESRIWorld [Accessed 17 September 2024]

- OS six inch, 1881, National Library of Scotland [online] [Accessed 05 March 2024];
- OS six inch, 1915, National Library of Scotland [online] [Accessed 05 March 2024]; and
- OS 1:25,000, 1961, National Library of Scotland [online] [Accessed 05 March 2024].

Conservation areas are not shown. Archaeological Priority Zones are shown where appropriate. All distances quoted in the text are approximate (within 5m).

3.2 Assessing archaeological potential

3.2.1 **Section 5** presents an assessment of archaeological potential for each chronological period, based on the archaeological and historical background of the area, its geology, topography and hydrology, the likelihood for evidence of past activity, and considering past disturbance which may have affected survival. For example, the Site may have high potential for activity of a particular period, but with low survival. **Section 5** also includes professional opinion on likely heritage significance, where there is low to moderate, or higher, potential for remains to be present. Where potential is low, heritage significance is not assessed, as this implies that remains from the period are not present.

3.3 Assessing heritage significance

3.3.1 The NPPF defines significance as *"The value of a heritage asset to this and future generations because of its heritage interest. That interest may be historic, archaeological, architectural or artistic."* The determination of the significance is based on statutory designation and/or professional judgement against these values (they are also identified in Historic England Statements of Heritage Significance[7].

3.3.2 Each asset is evaluated against the range of criteria listed above on a case-by-case basis. Unless the nature and exact extent of buried archaeological remains within any given area has been determined through prior investigation, significance is often uncertain.

3.3.3 In relation to significant heritage assets, the assessment considers the contribution which the historic character and setting makes to the overall significance of the asset.

3.3.5 **Table** 3.2 gives examples of the significance of designated and non-designated heritage assets.

Table 3.2 Significance of heritage assets

Heritage asset description	Significance
World Heritage Sites	Very High
Scheduled Monuments **Grade I Listed Buildings** **Grade II* Listed Buildings** **Grade II Listed Buildings with exceptional qualities in fabric, historical association, and/or association/group value with heritage assets of high significance** **Protected Wrecks** **Registered Battlefield** **Conservation Areas containing very important (Grade I / II*) listed buildings** **Grade I and II* Registered Parks and Gardens** **Protected heritage landscapes (e.g. ancient woodland or historic hedgerows, heritage Sites of Special Scientific Interest)** **Burial grounds** Non-designated heritage assets (above ground structures, landscape, townscape, buried remains) of national importance.	High
Grade II Listed Buildings which can be shown to have qualities in their fabric or historical association of regional importance only **Conservation Areas containing primarily Grade II listed or Locally Listed Buildings** **Grade II Registered Parks and Gardens** **Locally Listed Buildings** Non-designated heritage assets (above ground structures, landscape, townscape, buried remains) of regional importance.	Medium
Non-designated heritage assets (above ground structures, landscape, townscape, buried remains) of local importance.	Low
Item with no significant heritage value or interest	Negligible

4. Historic environment baseline

4.1 Site location

4.1.1 The Site of the proposed new on airfield infrastructure would be located at the north-western part of the Airport (NGR 505166, 176376: **Figure 11.1** of **Appendix 11.2: Historic Environment Figures**) north of Terminal 5. The two new RATs would be situated within a currently grassed area known as '6a' between existing RATs AB13 and AB12, directly north of Link 57 Code F taxiway and south of the 09L glidepath on the northern runway, as shown on **Figure 2.1** (see **Appendix 1.1: Introduction Figures**).

4.1.2 The removal of redundant pavement would occur on existing paved areas adjacent to Link S7 which adjoins Code E taxiway AVROE with the southern runway, between grassed areas 17b, 17c, 21d and 21g. A second portion of these works would take place redundant paved areas adjoining link N7, located directly north of the southern runway, directly south of Code F taxiway A and between grassed areas 19, 21a, and 21b. The Proposed Development includes removal of a narrow horizontal strip of pavement located within grassed area 21a and 21b itself. These areas are shown in **Figure 2.1** (see **Appendix 1.1: Introduction Figures**).

4.1.3 The proposed location of the noise barrier would be north of the Airport and south of Longford. It would extend continuously north eastwards from the point at which the bridge linking Longford Roundabout meets Wright Way, to the north east corner of the Terminal 5 pod car park, along their respective perimeters (NGR 505027, 176725. This alignment is shown in **Figure 11.1, Appendix 11.2: Historic Environment Figures**).

4.1.4 Both of these areas fall within the historic parish of Harmondsworth, of the Hundred of Elthorne located within the county of Middlesex prior to being absorbed into the administration of the London Borough of Hillingdon, as is mentioned in the Phillimore Atlas & Index of Parish Registers[10].

4.2 Topography

4.2.1 Topography can provide an indication of suitability for settlement, and ground levels can indicate whether the ground has been built up or truncated, which can have implications for archaeological survival (see **Section 4.6**).

4.2.2 For the Site of the new airfield infrastructure, the land shows a mild slope from the north to the south, with an average elevation of 23m above Ordnance Datum (AOD) in the north and 21m AOD in the south. There is a uniform slope from the west to the east of the Site, with an average elevation of 21.5m AOD. The Site is characterised by freely draining slightly acid loamy soils. Land within the Site currently includes grassed areas, as well as hard surfaced areas used as part of the operation of the Airport.

[10] Humphery-Smith, C.R., (2020). *The Phillimore Atlas and Index of Parish Registers (Third Edition)*. Phillimore & Co.

4.2.3 For the Site of the noise barrier, there is a uniform slope from the west to the east, with an average elevation of 23.5m AOD. The Site is characterised by freely draining slightly acid loamy soils. The Site lies along the edge of the existing Wright Way road and has car parking facilities in its immediate vicinity.

4.3 Geology and soils

4.3.1 Geology can provide an indication of suitability for early settlement, and potential depth of remains. The bedrock geology of both the sites comprises clay, silt and sand of the London Clay Formation, pre-dating human evolution and is itself of no archaeological potential. The superficial geology of both the sites combined comprises three distinct geological formations, namely the Taplow Gravel Member, the Shepperton Gravel Member and the Langley Silt Member. These are characterised by sedimentary deposits of sand, gravel and silt, deposited by riverine activity.

4.3.2 Five British Geological Survey (BGS) historic borehole data points were studied for the combined Study Area (**BGS ID: 573075, 573840, 573842, 574178, 574179**). These lie at a minimum distance of 195m from the Site of the noise barrier, and within the Site of the new airfield infrastructure. This data indicates that the made ground extends to a depth of 3 feet 6 inches below the ground level. The presence of sand, gravel, silt and clayey deposits is confirmed, with an average thickness of 15 feet below the topsoil layer. The borehole data also indicates the presence of flint mixed with sand and stone, which might have served as potentially useful resources for the human occupants of the Site.

4.4 Overview of past archaeological investigations

4.4.1 One of the earliest reported archaeological excavations took place in the Caesar's Camp site in Heathrow in 1944, situated 3.5km east of the Site of the new airfield infrastructure and 3.5km south-east of the Site of the noise barrier[11].

4.4.2 Another archaeological excavation took place in Site K in 1969, situated 450m north-east of the Site of the new airfield infrastructure, and 500m south-east of the Site of the proposed noise barrier. This was an Iron Age settlement[12].

4.4.3 Between 1999 and 2007, Framework Archaeology, a joint venture between Wessex Archaeology and Oxford Archaeology, carried out major excavations in advance of the construction of Terminal 5 at Heathrow, on behalf of the BAA, at the Perry Oaks site (**A42**). This led to a comprehensive reconstruction of the archaeological past of this area, starting from the prehistoric times into the medieval and the post-medieval period.

4.4.4 A part of the excavation included the Site of the new airfield infrastructure. The Site of the noise barrier is situated 400m north of the area of excavation.

[11] Grimes, W.F., Close-Brooks, J., Cotton, J., May, J., & Williams, D.F. (1993). The Excavation of Caesar's Camp, Heathrow, Harmondsworth, Middlesex, 1944. *Proceedings of the Prehistoric Society* Volume 59.

[12] Canham, R. 1978. Excavations at London (Heathrow) Airport, (1969). *Transactions of the London & Middlesex Archaeological Society* Volume 29.

4.4.5 Multiple desk-based assessment reports were produced for different parts of the Study Area in the intervening years by Framework Archaeology in 2000[13], 2002[14], 2004[15], and 2006[16].

4.4.6 In 2010, Framework Archaeology published another preliminary assessment report for the potential survival of archaeological deposits in the area of proposed runway alterations associated with the Heathrow Resilience Scheme[17]. A part of this Study Area overlapped with the combined Study Area of the present desk study.

4.4.7 The results of these investigations, along with other known sites and finds within the combined Study Area, are discussed by period, below. The date ranges below are approximate.

4.5 Archaeological and historical background

4.5.1 The following Section presents a brief outline of the historical and archaeological background related to the Proposed Development drawing on information within the combined Study Area. It focusses on heritage assets within and in the immediate vicinity of each of the sites that may provide information about the potential archaeological remains within the respective sites.

Prehistoric 800,000 Before Common Era (BCE) –AD 43

4.5.2 The Palaeolithic Period (800,000 - 10,000 BCE) saw intermittent, perhaps seasonal Hominin occupation of Britain as the climate alternated between long cold (glacial) and short warm (interglacial) stages, along with the usage of a variety of tools and implements. Six Palaeolithic flint tools were recovered during excavations on the site of Perry Oakes Sludge Works and Heathrow Airport Terminal Five, 205m south of the Site of the new airfield infrastructure (**A14**).

4.5.3 The Mesolithic hunter-gatherer communities of the postglacial period (10,000 – 4000 BCE) inhabited a still largely wooded environment. The river valleys and coast would have been favoured in providing a predictable source of food (from hunting and fishing) and water, as well as a means of transport and communication. Evidence of activity is characterised by flint tools rather than structural remains. A pit cluster filled with burnt flints, along with a palaeochannel in the vicinity, were identified 40m south of the Site of the new airfield infrastructure, during excavations (**A25**). These indicate a general level of human presence and land use in the landscape during this period.

[13] Framework Archaeology, (2000). *Strategic Cultural Heritage Audit of Heathrow Airport* (vols 1 and 2). Unpublished client report, ref. 47127
[14] Framework Archaeology, (2002). *Perry Oaks Sludge Works, Heathrow Historic landscape and Aerial Photograph Assessment*. Unpublished client report, ref. 48492.01.
[15] Framework Archaeology, (2004). *Sites 90a &b, 91,93, 94,95: Terminal 5 Concourse C*. Unpublished client report, ref. 95013.
[16] Framework Archaeology, (2006). *Landscape Evolution in the Middle Thames Valley. Heathrow Terminal 5 Excavations,* Volume 1, Perry Oaks. Framework Archaeology Monograph No.1. Salisbury and Oxford.
[17] Framework Archaeology, (2010). *Heathrow Resilience: Heathrow Airport: Assessment of Potential Survival of Archaeological Deposits*, London.

4.5.4 The Neolithic (4000 – 2200 BCE), Bronze Age (2200 – 800 BCE) and Iron Age (800 BCE–AD 43) are traditionally seen as the time of technological change, settled communities and the construction of communal monuments. Farming was established and forest cleared for cultivation. An expanding population put pressure on available resources and necessitated the utilisation of previously marginal land.

4.5.5 The Stanwell Cursus is the most notable Neolithic feature from the combined Study Area (**A30**). This linear monument formed two parallel ditches with a central bank, running from Colne Valley in the north-west to Stanwell in the south-west. Different sections of the monument had been excavated and identified at different times, although the entire cursus monument may not have survived owing to development in the Airport area. This feature crosses the southern part of the Site of new airfield infrastructure and is located 20m west of the Site of the proposed noise barrier. The Neolithic landscape also consisted of enclosures, pits and postholes, dispersed across the area. This indicates use of the combined Study Area by the Neolithic inhabitants for ritual as well as agricultural purposes. An evaluation in advance of construction of the current Terminal 5 business car park in 2006-8 (referred to at the time as the N3 Car Park Extension) identified residual finds of Mesolithic or Neolithic struck flints present in later features.

4.5.6 Archaeological evaluation and excavation revealed remains dating to the Bronze Age in advance of construction of the current Terminal 5 business car park in 2006 - 2008. This was located 295m north of the Site of the new airfield infrastructure and crossing the central portion of the site of the proposed noise barrier (**A36**). These indicate settlement systems of the Bronze Age in the combined Study Area, often reusing the same land as that of the Neolithic inhabitants. An initial evaluation identified evidence of a known Bronze Age field system in the form of pits, post holes, field boundary ditches, middle Bronze Age pottery, struck flint flakes and tools and burnt flint flakes in the southern and eastern part of the Site and in the southern and central parts of the Site there was evidence for a field system originating in the Middle Bronze Age. The quantity of Bronze Age pottery, flints, as well as possible post holes indicated that the focus of Middle or later Bronze Age settlement may be in the immediate vicinity. A watching brief within the car park Site in 2008 identified further Middle Bronze Age ditches in the south-western part of the Site, also indicating the existence of a Middle Bronze Age settlement in the immediate vicinity.

4.5.7 The Iron Age evidence from the combined Study Area also consist of field systems and ditches, located 490m north-east of the Site of the new airfield infrastructure, and 350m north-east of the Site of the noise barrier (**A24**). These mostly indicate continuities in land use and settlement with the earlier Bronze Age and the later Roman Period.

Roman (AD 43–410)

4.5.8 Within approximately a decade of the arrival of the Romans in Anno Domini (AD) 43, the town of *Londinium* had been established on the north bank of the Thames, where the City of London now stands, 25km to the east of the combined Study Area. *Londinium* quickly

rose to prominence, becoming a major commercial centre and the hub of the Roman road system in Britain[18].

4.5.9 Small, nucleated settlements and an organised system of the larger villa estates typically located along the major roads radiating out from Londinium, acted both as markets and as producers supplying the city, particularly with agricultural produce (ibid). The prosperity of these settlements appears to have followed the general socio-economic patterns that characterise the Roman period, with prosperity in the early 2nd century followed by a general decline in the late 2nd and early 3rd century and a brief revival in the 4th century.

4.5.10 The evidence from the Roman Period within the Study Area comprises of systems of ditches, gullies, drainage networks, and enclosures (passes through the southern and eastern part of the Site of the new airfield infrastructure and is located 230m south-east of the Site of the noise barrier) (**A21**), along with some evidence of burial practices in a gravel pit (located 135m north-east of the Site of the noise barrier (**A18**).

Early medieval (AD 410 – 1066)

4.5.11 The Study Area lies in the historic Hundred of Elthorne, within which the manor of Harmondsworth belonged to Earl Harold prior to the Norman Conquest of AD 1066[19]. A number of small settlements are attested in the area (Harlington and Hatton) prior to the Norman Conquest, and according to an Anglo-Saxon charter of AD 780, land in Hermonds had been granted by Offa, King of Mercia, to his servant Aeldred[20].

4.5.12 Heathrow appears to have been the last of the post-Roman settlements to be formed in the Harmondsworth Parish.

4.5.13 The Longford village also probably developed as a small Saxon settlement in between the 5th and 7th century AD.

4.5.14 It is possible that some of the more significant elements of the later Roman landscape may have continued in use in the early medieval period. This includes the evidence of a cremation burial in a gravel pit, found along with grave goods. This is located 135m north-east of the Site of the noise barrier (**A18**).

Medieval (AD 1066 – 1540)

4.5.15 William I took over the manor of the Harmondsworth, in the aftermath of the Norman conquest. He in turn granted it to the Abbot of the Benedictine Abbey of La Trinite, Rouen. The *Domesday Book* records mills, fishponds, meadow, pasture, vineyard and woodland as existing in this area[17].

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[18] Museum of London, (2000). *The archaeology of Greater London: an assessment of archaeological evidence for human presence in the area covered by modern Greater London,* London: Museum of London Archaeological Service.

[19] Williams, A. & Martin, G.H. (eds) (1992). *Domesday Book*, London: Penguin/Alecto Historical Editions.

[20] Pugh, R.B. (1971). *The Victoria History of the County of Middlesex volume 4*, London: Oxford University Press.

4.5.16 Heathrow is first attested in the early 15th century[18]. The Site of the new airfield infrastructure lay to the south of the village of Longford, within arable and open lands. The Site of the noise barrier lay within the village of Longford, which had come to existence by 1337 AD[21]. Evidence from the Medieval Period consists of ditches and field-systems (passes through the southern part of the Site of the new airfield infrastructure and is located 70m north of the Site of the proposed noise barrier (**A22**). Potsherds were found in the pits and ditches. Two possible stakeholders were also identified, located within the site of the proposed noise barrier, and located 360m north of the Site of new airfield infrastructure (**A15**). These indicate settlement as well as land use by the medieval inhabitants of the combined Study Area.

Post-medieval (AD 1540 – 1900)

4.5.17 Through this period, the area of Heathrow remained as the rural hinterland of London, with small villages and town specialising in market gardening[22]. Small groups of houses had developed at Longford, lining both sides of the Bath Road from the east bank of the Longford River up to and across the Duke of Northumberland's River.

4.5.18 The Ordnance Survey 1st edition 6" map of 1881 shows that the Site of the new airfield infrastructure lay in the arable land to the south of the village of Longford, within the parish of Harmondsworth. The Site of the noise barrier lay within the village of Longford, again falling within arable lands.

4.5.19 The archaeological evidence consists of ditches, field-systems and water channels, most of which were continued from the medieval period. These lay either within, or in a minimum distance of 295m from, the Site of the new airfield infrastructure (**A23, A27, A31** and **A38**). These lay either within, or in a minimum distance of 70m from, the site of the noise barrier (**A23, A27, A31** and **A38**).

4.5.20 Several listed buildings pertaining to this period were located within the combined Study Area. These include public houses, bridges, cottages and other residential structures. These are situated at a minimum distance of 40m north of the Site of the noise barrier, and 270m north-west of the Site of the new airfield infrastructure (**A1**-**A11**).

Modern (1901 – present)

4.5.21 The Ordnance Survey 2nd edition 6" map of 1915 shows similar pattern of land use as depicted in the previous map.

4.5.22 In 1943, the War Office compulsorily purchased land at Heathrow for the construction of an airport[15]. Work began in 1944 and was released to the Ministry of Civil Aviation in 1946. This led to significant change in the land use patterns of the Study Area of the proposed RATs[15].

4.5.23 Construction of the Airport involved a considerable degree of site clearance and levelling, with the excavation of topsoils and subsoils. Framework Archaeology[15] notes that this would

[21] Victoria County History, 1971, *A History of the County of Middlesex: Volume IV*, London.

[22] Sherwood, P. 2009. *Heathrow: 2000 years of History*, The History Press.

have involved ground reduction in many areas, as well as build up in others, with the overall impact of levelling being ill defined. Construction of the Airport also involved hard-surfaced areas as aprons, taxiways and runways, as well as the built development and associated underground services.

4.5.24 There was no major infrastructural or industrial development in Longford.

4.5.25 The Ordnance Survey 1:25,000 scale map of 1961 shows the presence of the Perry oaks Sludge Disposal Works, overlapping with the southern part of the Site of the new airfield infrastructure, and located 420m south of the Site of the noise barrier (**A20**). The new airport infrastructure is also indicated in the map. However, no major infrastructure development is visible within the Site of the noise barrier.

4.6 Factors affecting archaeological survival

New Airfield Infrastructure

4.6.1 Framework Archaeology[15] notes a high potential for archaeological survival across the Site of the new airfield infrastructure, should any remains be present. Possible ploughing and tree-root damage in the past would have damaged archaeology across the Site, although it is possible that deep cut features such as pits, ditches, wells and possibly building foundations may survive partially intact. The area of the Site would have undergone clearance and levelling as part of the construction of the Airport, thereby adversely impacting the survival of archaeological remains. However, whilst the extent and nature of these activities is not clearly known Framework Archaeology[15] notes that the Site of the new airfield infrastructure is believed to have experienced an overall level of truncation of up to 1m and that this may have meant that some archaeological deposits may survive.

4.6.2 Construction of the sections of the existing taxiways (Code D, E and F) within the Site may be expected to have removed any archaeological deposits, mostly within the footprint of the taxiways. Airport pavement is exceptionally thick and laid over a sub-base up to a further 600mm deep. Service trenches and easements would also have damaged or destroyed archaeological deposits, although the density of their configuration and the extent of such features is not clearly known.

4.6.3 Overall, therefore, there is potential for survival of archaeological deposits within the grassed areas, though it is likely that any surviving remains would have been subject to a degree of truncation due to initial site levelling and fragmentation from construction of taxiways and runway, as well as underground services.

Noise barrier

4.6.4 The level of archaeological survival across the Site of the noise barrier is likely to be low. This is due to the excavation required for the cutting of the re-aligned channel of the Duke of Northumberland's River in the late 20th century, with the noise barrier to be built along the southern bank of the new channel. Other disturbance in this area is likely to have been limited. The historic maps indicate that this site area mostly fell within arable and open land in the past. Possible ploughing and tree-root damage in the past would have damaged archaeology across the Site, although it is possible that deep cut features such as pits,

ditches, wells and possibly building foundations may survive partially intact. The extension of the car parking area and construction of roadways connecting with the Wright Way, by 2008, within the noise barrier Proposed Development Site was preceded by a programme of archaeological evaluation and recording, which would have appropriately recorded archaeological remains which were present. The excavation of the channel for the Duke of Northumberland's River was also preceded by archaeological investigations.

5. Buried heritage assets: statement of significance

5.1 Prehistoric

5.1.1 The Site of the new airfield infrastructure has **moderate to high** potential to contain prehistoric remains dated to the Neolithic, Bronze Age and Iron Age periods. Previous archaeological investigations have identified finds of this date, together with cut features comprising ditches and field boundaries of the Bronze Age and the Iron Age from within the Site as well as its immediate vicinity, as noted in the **Section 4**. These are indicative of a settled landscape contained settlement sites as well land management features such as field systems. The major Neolithic Stanwell Cursus was also located to the west. Airport construction from the 1940s, including construction of three taxiways and works associated with Terminal 5, would have adversely impacted the survival potential for prehistoric remains underneath the footprint of construction work. This would have had less impact on deeper cut features such as pits and ditches, which could potentially survive. Survival potential would also be higher for archaeological material and features lying in areas not previously built on.

5.1.2 Investigations have also identified some palaeolithic finds evidence for Mesolithic activity in the form of a pit cluster filled with burnt flints and other flint finds. The evidence for these periods is more sparse and so there is a **low** potential for the presence of material of this date.

5.1.3 The Site of the noise barrier has **negligible** potential to contain prehistoric remains due to the extent of previous disturbance, which has been preceded by archaeological investigations.

5.1.4 If present, the significance of such remains would depend on their nature and extent and as any surviving remains would have been subject to a level of truncation and fragmentation it is considered that they would be of **low** heritage significance.

5.2 Roman

5.2.1 The Site of the new airfield infrastructure has **moderate to high** potential to contain Roman remains. Archaeological investigations have identified evidence of ditches, gullies, enclosures, pits and other land use features from the Roman Period, within the Site as well as the immediate vicinity, as noted in **Section 4.5**, Airport construction from the 1940s, including construction of three taxiways and works associated with Terminal 5, would have adversely impacted the survival potential for Roman remains underneath the footprint of construction work. This would have had less impact on deeper cut features such as pits and ditches, which could potentially survive. Survival potential would also be higher for features lying in areas not previously built in.

5.2.2 The Site of the noise barrier has **negligible** potential to contain Roman remains due to the extent of previous disturbance, which has been preceded by archaeological investigations.

5.2.3 If present, the significance of such remains would depend on their nature and extent and as any surviving remains would have been subject to a level of truncation and fragmentation it is considered that they would be of **low** heritage significance.

5.3 Early medieval / Medieval

5.3.1 The Site of the new airfield infrastructure has **low** potential to contain early medieval or medieval remains. The Site lay outside of areas of known main settlement and the only evidence of human land use from the Site and its immediate vicinity comes in the form of field-systems and ditches, as noted in **Section 4.5**.

5.3.2 The Site of the noise barrier has **negligible** potential to contain medieval or medieval remains due to the extent of previous disturbance, which has been preceded by archaeological investigations.

5.3.3 If present, the significance of such remains would depend on their nature and extent and as any surviving remains would have been subject to a level of truncation and fragmentation it is considered that they would be of **low** heritage significance.

5.4 Post-medieval

5.4.1 The Site of the new airfield infrastructure has **low** potential to contain post-medieval remains. The Site lay outside the main settlement or village. The only signs of human land use from the Site comes in the form of field-systems, water channels and ditches, as noted in **Section 4.5**.

5.4.2 The Site of the noise barrier has **negligible** potential to contain post-medieval remains due to the extent of previous disturbance, which has been preceded by archaeological investigations.

5.4.3 If present, the significance of such remains would depend on their nature and extent and as any surviving remains would have been subject to a level of truncation and fragmentation it is considered that they would be of **low** heritage significance.

5.5 Modern

5.5.1 The Site of the new airfield infrastructure has **low to moderate** potential to contain modern remains. Footings of earlier structures and buildings associated with the Perry Oaks Sludge Disposal Works could have potentially survived in those parts of the Site which lay outside the footprint of construction of the airfield. These would be of **low** heritage significance.

5.5.2 The Site of the noise barrier has **negligible** potential to contain modern remains due to the extent of previous disturbance, which has been preceded by archaeological investigations.

6. Potential impacts

6.1 Introduction

6.1.1 This section assesses the likelihood for the Proposed Development to have an impact on the significance of buried and above ground heritage assets. Below ground impacts include anything that would cause ground disturbance, such as preliminary ground works, site strip, topsoil removal, demolition, remediation, landscaping, planting, excavation for basements, foundations, services, drainage and lighting.

6.1.2 The Proposed Development could have an impact on the significance of above ground heritage assets, due to changes to their setting.

6.1.3 Where appropriate, the terminology of the NPPF is used to assess the impact of the proposals on heritage assets – whether substantial harm to or total loss of significance, less than substantial harm or no harm.

6.2 Outline of the components of the Proposed Development relevant to the impact assessment

6.2.1 The two proposed Runway Access Taxiways (RATs) onto Runway 09L, along with connector taxiways, and changes to the aircraft stands at the western end of Runway 09L, would involve topsoil removal, groundworks including construction of underground services to serve the new infrastructure, removal of redundant areas of airfield pavement and reinstatement to grass areas to accommodate the construction of the new taxiway infrastructure, and regrading of the airfield grass areas (**Chapter 3: Description of the Proposed Development**). The new RATs and aircraft stands would be concrete with an asphalt surface, with inset airfield lighting, drainage (requiring up to 2m of excavations), cable ducts and other services, where necessary, including Fixed Electrical Ground Power (FEGP) (**Chapter 3: Description of the Proposed Development**). Besides, the laying down of service trenches, setting up site fencing and welfare activities can be assumed.

6.2.2 The proposed noise barrier would involve up to 2.5m deep piling (**Chapter 3: Description of the Proposed Development**). Topsoil removal can also be assumed for this purpose.

6.2.3 Associated infrastructure includes an access gate in the eastern section of the wall, to facilitate maintenance to the Duke of Northumberland's River (**Chapter 3: Description of the Proposed Development**).

6.3 Impact on buried heritage assets

6.3.1 Removal of topsoil, for the Site of the new airfield infrastructure as well as the noise barrier, is a potential impact as (in addition to the loss of any residual evidence it contains) it exposes any archaeological remains that may be present immediately beneath the topsoil. These may then be affected by movement of vehicles and plant involved in construction activities, for example through rutting and compaction.

6.3.2 Works carried out as part of the initial site set up, including preliminary site stripping and demolition, the installation of site fencing and welfare facilities, are assumed for the purposes of this assessment to cause ground disturbance to a maximum depth of 0.5mbgl though excavation for the new airfield infrastructure would be to a depth of approximately 1m, with a depth of 2m for drainage connections.

6.3.3 Piling, for the purposes of the noise barrier, would also potentially impact on archaeological survival. Any archaeological remains within the footprint of each pile would be removed as the pile is driven downwards. The severity of the impact would therefore depend on the pile size, type and pile density, details of which are not known at present.

ANNEX A

GAZETTEER

Table A.1 Listed buildings

Asset Ref.	NHLE Reference	Description	Grade	Location
A1	1080296	**King Henry Public House The Stables** Grade II Listed Building. The back part of this building is the former 'King Henry' public house. The front part has been rebuilt, using some old material, after a fire. There is a brick dated 1691 which may be the date of the timber-framed part adjoining. Located 130m north-east of the Site of the noise barrier, and 500m north of the Site of the proposed Runway Access Taxiways (RATs).	II	TQ0530076957
A2	1080297	**Longford Close** Grade II Listed Building. Red-brick house of two storeys. Later additions of gabled porch and rear span in stock brick. Located 125m north of the Site of the noise barrier, and 340m north-west of the Site of the new airfield infrastructure.	II	TQ0486376777
A3	1080298	**Flats 1-3 (Yeomans)** Grade II Listed Building. Building with central range and gabled cross-wings, tiled roof and exposed timber framing. Located 80m north-west of the Site of the noise barrier, and 405m north of the Site of the new airfield infrastructure.	II	TQ0496576853
A4	1080299	**King's Bridge** Grade II Listed Building. Cast iron elliptical arched bridge, with a central plaque having a raised crown and lettering. Located 40m north of the Site of the noise barrier, and 270m north-west of the Site of the new airfield infrastructure	II	TQ0475876660
A5	1192507	**The White Horse Public House** Grade II Listed Building. Medieval timber framed building with post-medieval brick elevations. Located 190m north of the Site of the noise barrier, and 410m north of the Site of the new airfield infrastructure.	II	TQ0493476857
A6	1192588	**Weekly House** Grade II Listed Building. Red brick house with high pitched tile roof and coved cornice. Most windows have glazing bars and sashes, along with some modern casements. Located 110m north of the Site of the noise barrier, and 325m north of the Site of the new airfield infrastructure.	II	TQ0489976767
A7	1286544	**Barn to West of Weekly House** Grade II Listed Building. Weather-boarded barn with tile roof. Located 95m north of the Site of the noise barrier, and 310m north-west of the Site of the new airfield infrastructure.	II	TQ0488276747

Asset Ref.	NHLE Reference	Description	Grade	Location
A8	1286577	**Longford Cottage** Grade II Listed Building. Timber-framed cottage with logging of old narrow bricks. Building has a modern porch. Located 85m north-east of the Site of the noise barrier, and 450m north of the Site of the new airfield infrastructure.	II	TQ0529476903
A9	1358336	**Queen River Cottage and Willow Tree Cottage** Grade II Listed Building. These are two or three storey white rendered cottages. Located 135m north of the Site of the noise barrier, and 445m north of the Site of the new airfield infrastructure.	II	TQ0493676892
A10	1358337	**Orchard Cottage** Grade II Listed Building. Two-storey small cottage of painted brick with slated roof. Interior shows a 16th century front bay. Probably part of a larger building the rest of which has disappeared. Located 95m north of the Site of the noise barrier, and 475m north of the Site of the new airfield infrastructure.	II	TQ0506976926
A11	1358338	**Wall to North West of Weekly House** Grade II Listed Building. Red brick wall with sloped and rounded coping. Located 115m north of the Site of the noise barrier, and 325m north of the Site of the new airfield infrastructure.	II	TQ0488976770

Table A.2 Conservation areas

Asset Ref.	Description
A12	**Longford Village Conservation Area** The village of Longford is located on the Bath Road, to the south of the A4 and just north of the Heathrow Western Perimeter Road. The area is characterised by a historic village core and the later development on the 'island' adjoining, defined by the River Colne. The village developed on the site of the ford on the River Colne, which was an important crossing point for travellers on the Old Bath Road. Longford retains its historic linear pattern along the Bath Road. It is believed that Longford developed as a small Saxon settlement dating from the 5th to 7th century AD. Historic buildings still survive from the medieval and post medieval period, many of which are listed. Located 40m north of the Site of the proposed noise barrier, and 265m north of the Site of the new airfield infrastructure.

Table A.3 Non-designated heritage assets

Asset Ref.	HER Reference	Description	Period	Location
A13	122476	**Western Perimeter Road (Ring Ditch of Uncertain Date)** Two ring ditches were identified by cropmarks to the north of the Western Perimeter Road, Heathrow Airport, Hillingdon. Located 20m north of the Site of the noise barrier, and 410m north of the Site of the new airfield infrastructure.	Uncertain	TQ0525576804
A14	139533	**Heathrow Airport (Palaeolithic Findspot)** Six flints were recovered between 1999 to 20005 during excavations on the site of the Perry Oakes Sludge Works and Heathrow Airport Terminal Five, Hillingdon, by Framework Archaeology. Located 835m south of the Site of the noise barrier, and 205m south of the Site of the new airfield infrastructure.	Palaeolithic	TQ0545675836
A15	133779	**Western Perimeter Road (Medieval Stake Hole)** Two possible stakeholes have been identified north of the Western Perimeter Road, Longford. One of the features contained 12th Century pottery. Located within the Site of the noise barrier, and 360m north of the Site of the new airfield infrastructure.	Medieval	TQ0525576755
A16	144998	**Heathrow Airport Staff Car Park (Prehistoric Pit)** A pit was located during an evaluation by the Museum of London Archaeology Service in 1994.The pit was oval in plan. Located 445m north-east of the Site of the noise barrier, and 505m north-east of the Site of the new airfield infrastructure.	Prehistoric	TQ0577176896
A17	115757	**Duke of Northumberland River (Gravel Pit & Quarry of Uncertain Date)** Gravel pits or quarries were visible as cropmarks to the south of Bath Road, Longford in 1985. Located 30m north of the Site of the noise barrier, and 410m north of the Site of the new airfield infrastructure.	Uncertain	TQ0520476804
A18	107736	**Kings Head Inn (Late Antique Burial)** A 31-bead necklace and urn were found a gravel pit in 1780 near Bath Road, Longford. It is thought that they may have been associated with a burial. Located 135m north-east of the Site of the noise barrier, and 505m north of the Site of the new airfield infrastructure.	Roman to Early Medieval	TQ0540476904
A19	107904	**Bath Road (Prehistoric Findspot – flint blade)**	Prehistoric	TQ0531476894

Asset Ref.	HER Reference	Description	Period	Location
		A flint blade was recovered in 1977, located within a spoil heap in a back garden during building works. Located 105m north of the Site of the noise barrier, and 495m north of the Site of the new airfield infrastructure.		
A20	175763	**Perry Oaks Sludge Disposal Works (Mid 20th Century Sewage Works)** Construction subjected to a photographic survey by Framework Archaeology in 2000. During the survey, many of the redundant features were being removed, yet still showed the site to be an industrial plant which had evolved to meet new demands and technologies. The features identified three phases in treatment, handling and transportation technologies. It crosses the southern part of the Site of the new airfield infrastructure, and is located 420m south of the Site of the noise barrier.	Modern	TQ0550075700
A21	143999	**Heathrow Airport (Late Iron Age Boundary Ditch, Pit, Round House (Domestic) & Rectilinear Enclosure)** A farmstead and associated features were located at Perry Oaks Sludge Works by successive excavations on the Site from 1969 to 1999. The site was found to comprise several buildings of multiple periods. A 'ladder' enclosure was also identified along with two drove ways. Other features identified at the site include ditches, gullies, field drainage systems and enclosures. The presence for charred plant remains in the soil samples associated with one building suggested a possible use for the building as a threshing barn. A second building in the form of a rectangular arrangement of gullies was present. A number of shallow gullies in the vicinity of this building were thought to represent the remains of two further rectangular buildings. Passes through the southern and eastern part of the Site of the new airfield infrastructure, and is located 230m south-east of the Site of the noise barrier.	Iron Age to Roman	TQ0526275500
A22	144394	**Perry Oaks Sludge Works (Tudor Water Channel)** Ditches and field systems area were revealed in small numbers on the site through excavations in the 1990s. A potential quarry was located on the site, but the evidence for this was uncertain. Numerous sherds of pottery were identified in the fills of several ditches and pits. Numerous modern	Medieval to Post-Medieval	TQ0537975923

Asset Ref.	HER Reference	Description	Period	Location
		deposits consisting mainly in building debris, plough marks and field drains were also identified. Other features include a trackway and field boundary on a north-northeast to south-southwest alignment. The trackway is visible on the John Rocque's map of the area and is the earliest known image of this part of the agricultural landscape. Passes through the southern part of the Site of the new airfield infrastructure, and is located 70m north of the Site of the noise barrier.		
A23	99658	**Longford Bridge Car Park (Post Medieval Sluice)** A channel and its associated watercourse, thought to be the Duke of Northumberland's River, was located during investigations in 1994 by the Museum of London Archaeology Service and in 2002-2005 by Framework Archaeology. The channel probably had a northwest-southeast alignment. The watercourse was also aligned north-south, located within an artificial cut. The Duke of Northumberland's River was constructed to increase the water supply to Isleworth Mill. Passes through the central part of the Site of the new airfield infrastructure, and overlaps with the south-eastern part of the Site of the noise barrier.	Post-Medieval	TQ0820275408
A24	103486	**Heathrow Airport - Staff Carpark (Early Iron Age Field System & Ditch)** Numerous ditches were found during an evaluation by Museum of London Archaeology Service in 1994. The feature indicated a field system which may have been in use over multiple historical periods. Located 490m north-east of the Site of the new airfield infrastructure, and is located 350m north-east of the Site of the noise barrier.	Iron Age to Medieval	TQ0573176910
A25	117245	**Perry Oaks Sludge Works (Mesolithic Pit & Palaeochannel)** A pit cluster was located during excavations between 1999 and 2005 by Framework Archaeology. A number of burnt flints were present in the fills of the pits. A palaeochannel was also identified which was the remains of a former stream on a north-south orientation. It was filled with burnt and worked flint along with some burnt stone and mineralised charcoal. The lack of charcoal in the palaeochannel fill indicates that it had silted up by the middle of the 7th millennium. The flints were all undiagnostic and heavily rolled. The consistency of	Mesolithic	TQ0498975875

Asset Ref.	HER Reference	Description	Period	Location
		the pits suggests that it was over one phase. It is believed that the location of the pits was marked in some way, the density of the pits implies a certain awareness had dictated this structural activity. Located 40m south of the Site of the new airfield infrastructure and c.650m south of the noise barrier.		
A26	116571	**Heathrow Airport - Staff West Car-Park (Mesolithic Pit)** Ditches and pits were located, during investigations by Museum of London Archaeology Service in 1994. The ditches contained two pieces of burnt flint, over two separate ditches and a single piece of unidentified fired clay. The western ditch was aligned northwest-southeast. Another ditch was located parallel to this ditch. Both of these ditches were truncated by a later wider ditch, this was aligned north-south but curved westwards at either end. The ditches were thought to be field boundaries or drainage ditches. Two pits contained flecks of possible pottery and worked flints. Also, during this investigation, more of the later ditch was uncovered along with a short section of truncated ditch. Located 555m north-east of the Site of the new airfield infrastructure and 550m north-east of the Site of the noise barrier.	Mesolithic	TQ0503275617
A27	143026	**Heathrow Airport Staff Car Park (Post Medieval Ditch & Water Channel)** Water channels, potentially former drainage ditches, were identified during an evaluation by Museum of London Archaeology Service in 1994. The water channels were broadly aligned with the field system, suggesting either that these were drainage ditches, or that the field system respected earlier water channels. Located 470m north of the Site of the new airfield infrastructure and 335m north-east of the Site of the noise barrier.	Post-Medieval	TQ0573176909
A28	141526	**Heathrow Airport (Ditch & Post Hole of Uncertain Date)** Pits and ditches were located along the Northern Perimeter Road, during a watching brief by the Museum of London Archaeology Service in 1997. Both the ditches were orientated north-south. A large feature was identified between ditches. This was probably a pit and may indicate a phase of quarrying on the Site. Slightly east of the features was an isolated posthole. The fill contained a single	Unknown	TQ0721376698

Asset Ref.	HER Reference	Description	Period	Location
		sherd of pottery, which may have been derived from the modern layers above it. West of this was a possible line aligned northeast - southwest. A possible quarry pit was also identified, containing burnt flint and daub. Nearby was a north-south aligned ditch. The fill of this ditch contained three small pieces of slag. A further cluster of features was located to the very east of the Site. This included two possible Prehistoric ditches. Located 245m north of the Site of the new airfield infrastructure and 190m south-east of the Site of the noise barrier.		
A29	113786	**Perry Oaks Sludge Works (20th Century Waste Disposal Site)** The area comprised two cursus monuments (associated and contemporary with the larger Stanwell Cursus), horseshoe shaped enclosures and a scattering of pits and postholes, the latter of which were dispersed across the Site. The cursus consisted of two parallel ditches on a north-northeast by south-southwest orientation. This monument would have had a bank running parallel to each of the ditches, and not a central bank. The ditches were constructed in a series of inter-cutting, elongated discontinuous segments, leaving several causeways. These causeways would have functioned as access to the monument and potentially clear lines of site, if the banks were also absent. The Stanwell Cursus served as the southern terminal of this cursus, it was located at the kink in the ditches. The northern ditch at this point cut the eastern ditch of the Stanwell Cursus and probably terminated just short of the central bank. The horseshoe shaped enclosure was initially identified as a cropmark, and was located within the cursus. Covers the southern part of the Site of the new airfield infrastructure and 335m south of the Site of the noise barrier.	Neolithic	TQ0593076002
A30	144525	**Stanwell Cursus (Early Neolithic Cursus)** The cursus was identified over a period of investigations starting in the 1980's and continuing through to 1999. The earliest ritual structure was a timber post lined avenue which was later replaced with a cursus monument with a central bank. Located 45m west of the Site of the new airfield infrastructure and crosses the western edge of the Site of the noise barrier.	Neolithic	TQ0493876029

Asset Ref.	HER Reference	Description	Period	Location
A31	170738	**Trial Trench at Heathrow Airport, Staff West Multi-Storey Car Parks 3, 4, 7** Several boundary or drainage ditches were identified. They may indicate a field system which was datable only to between the Iron Age and the 16th Century. It was superseded by a braided stream channel or channels, dated to the 17th or 18th Century and associated with flood deposits over the entire site. Located 515m north-east of the Site of the new airfield infrastructure, and 400m north-east of the Site of the noise barrier.	Iron Age to Post-Medieval	TQ0588376914
A32	164939	**Watching Brief at Heathrow Airport** No archaeological features were encountered. Located 275m north-east of the Site of the new airfield infrastructure and 205m east of the Site of the noise barrier.	Uncertain	TQ0570976708
A33	168998	**Open Area Excavation at Heathrow Airport - Staff West Car Park** Three boundary or drainage ditches of a Prehistoric date were excavated. Post Medieval activity was visible via bedding trenches. Located 515m north-east of the site of the Site of the new airfield infrastructure, and 490m north-east of the Site of the noise barrier.	Prehistoric and Post-Medieval	TQ0588376914
A34	152592	**Watching Brief at Heathrow Airport - Longford Bridge Car Park** Part of a former channel leading to the Duke of Northumberland's River was identified. Alluvium in the area suggest that the Site was flooded in the 18th Century or later. Located 270m north of the Site of the new airfield infrastructure, and crosses the eastern part of the Site of the noise barrier.	Post-Medieval	TQ0525776770
A35	154412	**Trial Trench at Perry Oaks Sludge Works** The Site revealed a significant amount of archaeology spanning the Palaeolithic to the Post Medieval period. Located 35m south of the Site of the new airfield infrastructure, and 685m south of the Site of the noise barrier.	Palaeolithic to Post-Medieval	TQ0536475813
A36	154974	**Watching Brief at N3 Car Park Extension** Evidence for five Middle Bronze Age ditches and a number of ditches of 18th Century and later date. It lies 295m north of the Site of the new airfield infrastructure, and passes through the central portion of the Site of the noise barrier.	Bronze Age and Post-Medieval	TQ0512276756

Asset Ref.	HER Reference	Description	Period	Location
A37	172546	**Watching Brief at 33KV Central Terminal Area Reinforcement Scheme** No significant archaeological features or remains were found, bar modern disturbance that could have led to the truncation of such remains. Most significant of the modern remains were the four borrows, or gravel pits. The western polygon is located 230m north of the Site of the new airfield infrastructure, and passes through the central part of the site of the noise barrier. The eastern polygon lies 225m north-east of the Site of the new airfield infrastructure, and 475m east of the Site of the noise barrier.	Modern	TQ0637576660
A38	171821	**Open Area Excavation at Proposed N3 Car Park Extension** Revealed limited earlier Prehistoric activity in the form of residual finds of Mesolithic or Neolithic struck flints in later features. In the southern and eastern part of the site, further evidence of a known Bronze Age field system in the form of pits, post holes, field boundary ditches, middle Bronze Age pottery, struck flint flakes and tools and burnt flint flakes was recorded. Additionally, boundary ditches and other features of Post Medieval date were recorded. It lies 295m north of the Site of the new airfield infrastructure, and passes through the central portion of the Site of the noise barrier.	Prehistoric to Post-Medieval	TQ0511176756
A39	169321	**Open Area Excavation at Heathrow Airport - Perry Oaks Sludge Works** The site uncovered a semi-formalised Neolithic monumental avenue which was cut by a cursus monument or a late Neolithic to early Bronze Age date. A settlement was present near to the cursus monument in the middle to late Bronze Age and contained an enclosed field system and associate droveways. Limited evidence in the form of ditches, pits and waterholes, was present for the Roman period. Passes through the Site of the new airfield infrastructure, and is located 380m south of the Site of the noise barrier.	Neolithic to Roman	TQ0542775943
A40	166063	**Trial Trench at Peggy Bedford Public House** No archaeological features were identified. Located 550m north of the site of the Site of the new airfield infrastructure, and 290m north-east of the Site of the noise barrier.	NA	TQ0561076980

Asset Ref.	HER Reference	Description	Period	Location
A41	165395	**Photographic Survey at Perry Oaks Disposal Works** It noted the retainment of a substantial number of industrial features reflecting the different construction phases in treatment, handling and transportation technology. Passes through the southern part of the Site of the new airfield infrastructure, and is located 370m south of the Site of the noise barrier.	Modern	TQ0537875762
A42	159184	**Excavation at Perry Oaks Sludge Works - Heathrow Airport** Evidence of multi-period archaeological occupation was identified. Crosses the Site of the new airfield infrastructure, and crosses the eastern section of the site of the noise barrier.	Prehistoric to Post-Medieval	TQ0558675753
A43	163290	**Trial Trench at Heathrow Airport** Revealed at least two phases of a Prehistoric enclosure or boundary ditches. Two of these ditches may have formed part of a double-ditched enclosure, possibly with circular, interrupted ditches; they may date from the Middle Bronze Age to the Early Iron Age. Loom weight fragments and a hearth suggest occupation in the vicinity. Other features include a series of pits, postholes and stakeholders, and amongst the artefacts recovered were pottery of Bronze or Iron Age date, worked flints and a green glass or faience bead. Located 25m east of the Site of the new airfield infrastructure, and 585m south-east of the Site of the noise barrier.	Prehistoric to Iron Age	TQ0588576230
A44	157793	**Trial Trench at Perry Oaks Sludge Works - Heathrow Airport** Revealed ditches possibly Prehistoric, more specifically Iron Age along with Roman features. Other features included Post Medieval plough marks and post holes and a pit of unknown date. Located 150m south of the Site of the new airfield infrastructure, and 815m south-east of the Site of the noise barrier.	Prehistoric to Post-Medieval	TQ0550875742
A45	161357	**Watching Brief at Heathrow Airport** Twelve features were observed including pits and ditches of uncertain date. These mainly lay to the west and east ends, in the vicinity of Prehistoric activity. Whilst they lack any diagnostic dating material, their locations suggest they may be associated with Prehistoric activity of a Neolithic to	Uncertain	TQ0710476722

Asset Ref.	HER Reference	Description	Period	Location
		Iron Age date. Located 250m north of the Site of the new airfield infrastructure and located 75m south of the Site of the noise barrier.		