ARCHAEOLOGICAL DESK BASED ASSESSMENT

Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU

794-PLN-HER-01236
Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU
Planning Issue
August 2025

rpsgroup.com

Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Review date
1	Draft	Richard von Kalinowski-Meager & Alex Slater	RvKM	RvKM	January 2024
2	Revised Draft	RvKM	RvKM	RvKM	March 2025
3	Revised Draft	RvKM	RvKM	RvKM	March 2025
4	Revised Draft	RvKM	RvKM	RvKM	April 2025
5	Revised Draft	RvKM	RvKM	RvKM	May 2025
6	Revised Draft	RvKM	RvKM	RvKM	June 2025
7	Planning Issue	RvKM	RvKM	RvKM	August 2025

Approval for issue

Richard von Kalinowski-Meager	RvKM	11 August 2025

File/Model Location

Document location: 794-PLN-HER-01236

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EXECUTIVE SUMMARY

An element of the Heathrow Flightpath Car Park Site, Bath Road, Sipson, UB7 0DU, has been reviewed for its below ground archaeological potential.

In terms of relevant, nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Protected Wreck Sites or Registered Battlefields lie within the Site or its immediate vicinity.

In terms of relevant local designations, the Site lies within the Heathrow Archaeological Priority Zone as defined by the London Borough of Hillingdon and their archaeological planning advisors at the Greater London Archaeological Advisory Service (GLAAS).

The Site is considered likely to have a moderate potential for archaeological remains dating from the Neolithic, Bronze Age, Iron Age, Roman and Saxon periods; Medieval and Post Medieval remains evidencing agricultural activity, of limited archaeological interest and significance, are also considered likely to be present, where they may have survived post depositional impacts.

Past post-depositional impacts within the Site are considered likely to have had a negative archaeological impact. The construction of a school in the late 19th century and earthworks associated with the construction of the cutting for the M4 motorway in the 1960s is considered likely to have had a severe negative archaeological impact within the southern part of the Site.

This DBA has been prepared in support of a hybrid application consisting of full planning permission for the creation of a mixed use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access.

Advice from the archaeological planning advisor to the London Borough of Hillingdon for a previous planning application for the redevelopment of the Site confirmed that a two-stage archaeological condition would be required, comprising a stage 1 trial trench evaluation, with any subsequent stage 2 mitigation determined on the results of the evaluation.

It is anticipated that a similar programme of archaeological works will be required to mitigate the impact of the new redevelopment proposals at the Site, dependant upon the impact of the proposals.

Remains of national significance which might preclude development are not anticipated at the Site, so it is therefore suggested that if further archaeological investigation is required, this could be attached to the granting of consent secured by an appropriately worded planning condition.

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1 INTRODUCTION AND SCOPE OF STUDY

1.1 This below ground archaeological desk based assessment has been prepared by RPS on behalf of LPH UK 1 Ltd (Lysara).

1.2 The subject of this Assessment comprises the Heathrow site, also referred to as the Site, comprising the southern part of the existing Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU, c.7000 square metres in extent.

1.3 The Site is located approximately 100m to the north of Heathrow Airport, on the northern side of the A4 (Bath Road) and on the western side of the M4 spur leading to the airport.

1.4 The Site is centred at National Grid Reference (NGR) TQ07438 77065 within the administrative boundaries of the London Borough of Hillingdon (see Figures 1-2 and 11-12).

1.5 In terms of relevant nationally designated heritage assets, as defined below in Section 2 and as shown on Figure 2a, no World Heritage sites, Scheduled Monuments, Protected Wreck Sites or Registered Battlefields have been identified either within the Site itself, or within the vicinity of the Site.

1.6 The Site is located within the Heathrow Archaeological Priority Zone (APZ), identified as a potential prehistoric archaeological resource by Hillingdon Borough Council and their archaeological planning advisors at the Greater London Archaeological Advisory Service (GLAAS).

1.7 LPH UK 1 Ltd (Lysara) have therefore commissioned RPS to establish the archaeological potential of the Site, and to provide guidance on ways to accommodate any archaeological constraints identified.

1.8 In accordance with relevant government policy and guidance on archaeology and planning, and in accordance with the ‘Standard and Guidance for Historic Environment Desk-Based Assessments’ (Chartered Institute for Archaeologists, October 2020) this assessment draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the Site.

1.9 This desk-based assessment comprises an examination of evidence on the Greater London Historic Environmental Record (GLHER) and other sources, including the results of a comprehensive map regression exercise, and a review of existing site investigation data (see Sections 3 and 4 below, Figures, also Appendices 2-4).

1.10 Built Heritage issues are not within the scope of this report and therefore the potential impact of the proposed development on built heritage assets is not considered here.

1.11 This document draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the Site, together with its likely significance, and to consider the need for design, civil engineering, and archaeological solutions to any constraints identified.

2 PLANNING BACKGROUND AND DEVELOPMENT PLAN FRAMEWORK

2.1 National legislation regarding archaeology, including scheduled monuments, is contained in the Ancient Monuments and Archaeological Areas Act 1979, amended by the National Heritage Act 1983 and 2002, and updated in April 2014.

2.2 In March 2012, the government published the National Planning Policy Framework (NPPF), and it was most recently updated 12 December 2024.

2.3 Amendments published in September 2023 focussed solely on planning for onshore wind development (https://www.gov.uk/government/publications/national-planning-policy-framework--2#full-publication-update-history).

2.4 The NPPF was revised in response to the Proposed reforms to the NPPF and other changes to the Planning system consultation on 12 December and sets out the government's planning policies for England and how these are expected to be applied. This revised Framework replaces the previous NPPF published in March 2012, revised in July 2018, updated in February 2019, revised in July 2021, updated in September 2023 and revised in December 2023.

2.5 For the December 2024 iteration, policy wording relevant to archaeology remain unchanged, with just the paragraph and footnote numbering referencing amended.

2.6 The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014 and is periodically updated (https://www.gov.uk/ guidance/conserving-and-enhancing-the-historic-environment).

2.7 The NPPF and NPPG are additionally supported by three Good Practice Advice (GPA) documents published by Historic England: GPA 1: The Historic Environment in Local Plans; GPA 2: Managing Significance in Decision-Taking in the Historic Environment (both published March 2015). The second edition of GPA3: The Setting of Heritage Assets was published in December 2017.

National Planning Policy

2.8 Section 16 of the NPPF, entitled Conserving and enhancing the historic environment provides guidance for planning authorities, property owners, developers and others on the conservation and investigation of heritage assets. Overall, the objectives of Section 16 of the NPPF can be summarised as seeking the:

- Delivery of sustainable development;
- Understanding the wider social, cultural, economic and environmental benefits brought by the conservation of the historic environment;
- Conservation of England's heritage assets in a manner appropriate to their significance; and
- Recognition that heritage makes to our knowledge and understanding of the past.

2.9 Section 16 of the NPPF recognises that intelligently managed change may sometimes be necessary if heritage assets are to be maintained for the long term. Paragraph 207 states that planning decisions should be based on the significance of the heritage asset and that level of detail supplied by an applicant should be proportionate to the importance of the asset and should be no more than sufficient to review the potential impact of the proposal upon the significance of that asset.

2.10 *Heritage Assets* are defined in Annex 2 of the NPPF as: a building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. They include designated heritage assets (as defined in the NPPF) and assets identified by the local planning authority during the process of decision-making or through the plan-making process.

2.11 Annex 2 also defines *Archaeological Interest* as a heritage asset which holds or potentially could hold evidence of past human activity worthy of expert investigation at some point.

2.12 A *Nationally Important Designated Heritage Asset* comprises a: World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area.

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

2.14 *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. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral.

2.15 In short, government policy provides a framework which:

- Protects nationally important designated Heritage Assets;
- Protects the settings of such designations;
- In appropriate circumstances seeks adequate information (from desk based assessment and field evaluation where necessary) to enable informed decisions;
- Provides for the excavation and investigation of sites not significant enough to merit *in-situ* preservation.

2.16 The NPPG reiterates that the conservation of heritage assets in a manner appropriate to their significance is a core planning principle, 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. 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 publicly available. Key elements of the guidance relate to assessing harm. An important consideration should be whether

the proposed works adversely affect a key element of the heritage asset's special architectural or historic interest. Additionally, it is the degree of harm, rather than the scale of development, that is to be assessed. The level of 'substantial harm' is considered 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. Importantly, 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.

2.17 In considering any planning application for development, the planning authority will be mindful of the framework set by government policy, in this instance the NPPF, by current Development Plan Policy and by other material considerations.

2.18 A planning application for the redevelopment of the Site was previously submitted in July 2022 (Planning Application Ref: 41632/APP/2022/2301). Advice on this application from the GLAAS Archaeology Advisor for the London Borough of Hillingdon confirmed a two-stage archaeological condition would be required, with the archaeological work comprising a stage 1 trial trench evaluation, and any subsequent stage 2 mitigation determined on the basis of results of the evaluation (Appendix 1). This planning application was withdrawn in November 2023.

Regional Planning Policy

2.19 The relevant Strategic Development Plan framework is provided by the March 2021 London Plan. Within Chapter 7 'Heritage and Culture', policy HC1 is of most relevance to archaeology at the Site:

HC1 Heritage and Conservation Growth

A. Boroughs should, in consultation with Historic England, local communities and other statutory and relevant 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, and interpretation of, 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 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 set out strategies for their repair and re-use.

Local Planning Policy

2.20 The relevant Development Plan framework is provided by the London Borough of Hillingdon's Local Plan. The Local Plan Part 1: Strategic Policies document was adopted in November 2012, and contains the following policy relevant to the historic environment:

POLICY HE1: HERITAGE

THE COUNCIL WILL:

1. **CONSERVE AND ENHANCE HILLINGDON'S DISTINCT AND VARIED ENVIRONMENT, ITS SETTINGS AND THE WIDER HISTORIC LANDSCAPE, WHICH INCLUDES:**
    - **HISTORIC VILLAGE CORES, METRO-LAND SUBURBS, PLANNED RESIDENTIAL ESTATES AND 19TH AND 20TH CENTURY INDUSTRIAL AREAS, INCLUDING THE GRAND UNION CANAL AND ITS FEATURES;**
    - **DESIGNATED HERITAGE ASSETS SUCH AS STATUTORILY LISTED BUILDINGS, CONSERVATION AREAS AND SCHEDULED ANCIENT MONUMENTS;**
    - **REGISTERED PARKS AND GARDENS AND HISTORIC LANDSCAPES, BOTH NATURAL AND DESIGNED;**
    - **LOCALLY RECOGNISED HISTORIC FEATURES, SUCH AS AREAS OF SPECIAL LOCAL CHARACTER AND LOCALLY LISTED BUILDINGS; AND**
    - **ARCHAEOLOGICALLY SIGNIFICANT AREAS, INCLUDING ARCHAEOLOGICAL PRIORITY ZONES AND AREAS.**
2. **ACTIVELY ENCOURAGE THE REGENERATION OF HERITAGE ASSETS, PARTICULARLY THOSE WHICH HAVE BEEN INCLUDED IN ENGLISH HERITAGE'S 'HERITAGE AT RISK' REGISTER OR ARE CURRENTLY VACANT.**
3. **PROMOTE INCREASED PUBLIC AWARENESS, UNDERSTANDING OF AND ACCESS TO THE BOROUGH'S HERITAGE ASSETS AND WIDER HISTORIC ENVIRONMENT, THROUGH SECTION 106 AGREEMENTS AND VIA COMMUNITY ENGAGEMENT AND OUTREACH ACTIVITIES.**
4. **ENCOURAGE THE REUSE AND MODIFICATION OF HERITAGE ASSETS, WHERE APPROPRIATE, WHEN CONSIDERING PROPOSALS TO MITIGATE OR ADAPT TO THE EFFECTS OF CLIMATE CHANGE. WHERE NEGATIVE IMPACT ON A HERITAGE ASSET IS IDENTIFIED, SEEK ALTERNATIVE APPROACHES TO ACHIEVE SIMILAR CLIMATE CHANGE MITIGATION OUTCOMES WITHOUT DAMAGE TO THE ASSET.**

2.21 The Local Plan Part 2: Development Management Policies document was adopted in January 2020. This contains the following relevant policy:

POLICY DMHB 1: HERITAGE ASSETS

A) THE COUNCIL WILL EXPECT DEVELOPMENT PROPOSALS TO AVOID HARM TO THE HISTORIC ENVIRONMENT. DEVELOPMENT THAT HAS AN EFFECT ON HERITAGE ASSETS WILL ONLY BE SUPPORTED WHERE:

I) IT SUSTAINS AND ENHANCES THE SIGNIFICANCE OF THE HERITAGE ASSET AND PUTS THEM INTO VIABLE USES CONSISTENT WITH THEIR CONSERVATION;

II) IT WILL NOT LEAD TO A LOSS OF SIGNIFICANCE OR HARM TO AN ASSET, UNLESS IT CAN BE DEMONSTRATED THAT IT WILL PROVIDE PUBLIC BENEFIT THAT WOULD OUTWEIGH THE HARM OR LOSS, IN ACCORDANCE WITH THE NPPF;

III) IT MAKES A POSITIVE CONTRIBUTION TO THE LOCAL CHARACTER AND DISTINCTIVENESS OF THE AREA;

IV) ANY EXTENSIONS OR ALTERATIONS ARE DESIGNED IN SYMPATHY, WITHOUT DETRACTING FROM OR COMPETING WITH THE HERITAGE ASSET;

V) THE PROPOSAL WOULD RELATE APPROPRIATELY IN TERMS OF SITING, STYLE, SCALE, MASSING, HEIGHT, DESIGN AND MATERIALS;

VI) BUILDINGS AND STRUCTURES WITHIN THE CURTILAGE OF A HERITAGE ASSET, OR IN CLOSE PROXIMITY TO IT, DO NOT COMPROMISE ITS SETTING; AND

VII) OPPORTUNITIES ARE TAKEN TO CONSERVE OR ENHANCE THE SETTING, SO THAT THE SIGNIFICANCE OF THE ASSET CAN BE APPRECIATED MORE READILY.

B) DEVELOPMENT PROPOSALS AFFECTING DESIGNATED HERITAGE ASSETS NEED TO TAKE ACCOUNT OF THE EFFECTS OF CLIMATE CHANGE AND RENEWABLE ENERGY WITHOUT IMPACTING NEGATIVELY ON THE HERITAGE ASSET. THE COUNCIL MAY REQUIRE AN ALTERNATIVE SOLUTION WHICH WILL PROTECT THE ASSET YET MEET THE SUSTAINABILITY OBJECTIVES OF THE LOCAL PLAN.

C) THE COUNCIL WILL SEEK TO SECURE THE REPAIR AND REUSE OF LISTED BUILDINGS AND MONUMENTS AND IMPROVEMENTS TO CONSERVATION AREAS ON THE HERITAGE AT RISK REGISTER, THROUGH NEGOTIATIONS WITH OWNERS, THE PROVISION OF ADVICE AND GUIDANCE, THE USE OF APPROPRIATE LEGAL ACTION, AND THROUGH BIDS FOR EXTERNAL FUNDING FOR IMPROVEMENT WORKS.

POLICY DMHB 7: ARCHAEOLOGICAL PRIORITY AREAS AND ARCHAEOLOGICAL PRIORITY ZONES

THE COUNCIL, AS ADVISED BY THE GREATER LONDON ARCHAEOLOGICAL ADVISORY SERVICE, WILL ENSURE THAT SITES OF ARCHAEOLOGICAL INTEREST WITHIN OR, WHERE APPROPRIATE, OUTSIDE, DESIGNATED AREAS ARE NOT DISTURBED. IF THAT CANNOT BE AVOIDED, SATISFACTORY MEASURES MUST BE TAKEN TO MITIGATE THE IMPACTS OF THE PROPOSALS THROUGH ARCHAEOLOGICAL FIELDWORK TO INVESTIGATE AND RECORD REMAINS IN ADVANCE OF DEVELOPMENT WORKS. THIS SHOULD INCLUDE PROPOSALS FOR THE RECORDING, ARCHIVING AND REPORTING OF ANY ARCHAEOLOGICAL FINDS.

Relevant Designations

2.22 In terms of relevant designated heritage assets, as defined above and as shown on Figure 2a, no nationally designated World Heritage Sites, Scheduled Monuments, Registered Battlefields or Protected Wreck Sites lie within the vicinity of the Site.

2.23 The Site is located within the Heathrow Archaeological Priority Zone (APZ), identified as a potential prehistoric archaeological resource by Hillingdon Council and their archaeological planning advisors at GLAAS.

2.24 In line with relevant planning policy and guidance, this desk-based assessment seeks to clarify the Site's archaeological potential, and the significance and value of any potential archaeological remains, together with the need or otherwise for additional mitigation measures.

3 GEOLOGY AND TOPOGRAPHY

Geology

3.1 The bedrock solid geology of the Site is shown by the British Geological Survey website (BGS Online 2024) to comprise as London Clay Formation – Clay, Silt and Sand – having formed approximately 48 to 56 million years ago in the Palaeogene Period.

3.2 Superficial deposits of Langley Silt Member – Clay and Silt - are recorded as overlying the bedrock geology, having formed up to 2 million years ago in the Quaternary Period.

3.3 The Site is situated within the Pleistocene alluvial floodplain of the Thames, relatively close to the interface between the Langley Silt and Taplow Gravel Terrace, mapped c. 400m south of the Site.

3.4 The wider carpark Site was subject to geotechnical investigation in November 2021 (see Appendix 2). The majority of the boreholes and window samples observed shallow Made Ground deposits (c.400- 600mm thick) over Langley Silts. The Langley Silts within these boreholes were consistently between 5.5m and 6.5m thick, suggesting that truncation had not occurred in these areas. However, Borehole No. 201 within the northern part of the site recorded approx. 1.75m of Made Ground straight onto Taplow Gravels and Borehole No. 203 within the eastern part of the Site recorded 4m of Made Ground onto London Clay formation. The depth of the Made Ground and the absence of the anticipated Langley Silts suggests truncation within these parts of the Site.

3.5 Within the southern part of the Site, Borehole No. 204 recorded 2.4m of Made Ground over Langley Slits (see Appendix 2). However, a significant depth of clay containing organic material was observed and recorded within the Made Ground deposit suggesting the possibility of a palaeochannel or former water-filled feature.

3.6 The wider carpark site was subject to soakaway testing undertaken during March 2025 (see Appendix 4). Three interventions were opened through the centre of the Site on a north-south axis. The northernmost intervention recorded 1.2m of made ground above natural sands and gravels; the central intervention revealed 1m of made ground above natural sands and gravels, and the southernmost intervention revealed 0.35m of made ground above natural deposits.

Topography

3.7 The general topography of the Site and the wider carpark comprises a slight east-facing slope, dropping from c.26.8m AOD (above Ordnance Datum) at the western boundary to c.25m AOD at the eastern boundary. Beyond the eastern boundary, the topography level drops significantly to the eastward, falling towards the M4 motorway.

3.8 No watercourses or naturally occurring bodies of water are mapped as present within the Site or are known within the immediate vicinity.

3.9 The course of the Colne River runs north/south c.3km west of the Site, and the course of the Cranford River runs north/south c.3km east of the Site.

4 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND WITH ASSESSMENT OF SIGNIFICANCE

Timescales used in this report

Prehistoric

Palaeolithic	900,000	-	12,000 BC
Mesolithic	12,000	-	4,000 BC
Neolithic	4,000	-	2,500 BC
Bronze Age	2,500	-	800 BC
Iron Age	800 BC	-	AD 43

Historic

Roman	AD 43	-	410
Saxon & Early Medieval	AD 410	-	1066
Medieval	AD 1066	-	1485
Post Medieval	AD 1486	-	1799
Modern	AD 1800	-	Present

Introduction

4.1 What follows comprises a review of archaeological findspots within a 1km radius of the Site, also referred to as the study area, held on the Greater London Historic Environment Record (GLHER), together with a historic map regression exercise charting the development of the study area from the 18th century onwards until the present day.

4.2 In terms of relevant nationally significant designated heritage assets, as defined above and as shown on Figure 2a, no World Heritage Sites, Scheduled Monuments, Protected Wreck Sites or Registered Battlefield have been identified within the vicinity of the Site.

4.3 In terms of relevant local designations, the Site is located within the Heathrow Archaeological Priority Zone, identified as a potential prehistoric archaeological resource by Hillingdon Council and GLAAS (77820, TQ0719376187).

4.4 In general, the GLHER findspots relate to significant occupation and settlement activity within the study area, dating from the Neolithic, Bronze Age, Iron Age and Anglo-Saxon (early medieval) periods, and reduced agricultural activity from the Roman, later Medieval and Post Medieval periods.

4.5 The map regression demonstrates that the Site lay within an agricultural landscape throughout the 18th and 19th centuries - predominantly occupied by orchards. The southern and central areas were cleared for the construction of a school in the 1870s. The construction of Heathrow Airport to the south of the site in the mid-20th century resulted in the site to being developed as an area of car parking.

4.6 The available Historic Landscape Characterisation (HLC) data provided by the GLHER shows the area of the Site to be classified as 'settlements' (Figure 2b).

4.7 Chapter 5 subsequently considers the site conditions and whether the proposed development will impact the theoretical archaeological potential identified below.

Previous Archaeological Investigations identified within 500m of the Site

4.8 The GLHER does not record that any archaeological work had previously been undertaken within the Site, besides a previous desk-based assessment produced by RPS in 2022 (214305, TQ0745177067).

4.9 In February 2019, as part of the Heathrow Airport Expansion Project (HEP), an analysis and transcription activity was undertaken across a total area of 50km², which plotted the form and extent of archaeological features visible as cropmarks, soilmarks, or structures. The project included the use of modern and historic aerial photographs and LiDAR data. The results of the project within the 1km study area were provided by the GLHER, and are mapped on Figure 2a. Surveyed aerial photographs from the 1940s showed faint cropmark traces of levelled Medieval or Post Medieval ridge and furrow immediately north of the Site, and to the east, west and north (HEP Refs: 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33). Possible Medieval or Post Medieval field boundaries are recorded to the west of the Site (HEP Refs: 3, 6, 24).

4.10 An archaeological evaluation in 2010 at 276–278 Bath Road, Sipson, comprising 22 evaluation trenches, revealed that widespread horizontal truncation of deposits had occurred, with no archaeological remains or artefacts were recorded (169793, TQ0693077050).

4.11 An archaeological evaluation took place at Home Farm in 1991, comprising the excavation of 15 trial trenches. A number of Bronze Age pits and post holes were found in association with cooking pits. Iron Age utilisation of this site was represented by pits and a ditch. A large number of unstratified finds of a Roman to medieval date were also recovered (159954, TQ0705577525).

4.12 An archaeological watching brief took place at Bath Road in 1997/1998 to monitor the construction of a perimeter wall. No archaeological remains were recorded (167517, TQ0700977082).

4.13 An archaeological evaluation undertaken at 625-635 Sipson Road in 1995 recorded natural brickearth covered by topsoil and modern dump deposits, which had been cut by modern features. Finds comprised three residual fragments of burnt flint (157839 and 136081, TQ0780477115).

4.14 An archaeological evaluation took place at Custom House, Nettleton Road in 1993, comprising excavation of one trench which revealed no archaeological finds or features (158148, TQ0771477751).

4.15 An archaeological evaluation was carried out to the east of Sipson Road in 2005. This investigation recorded a Bronze Age field system and activity associated with a late Iron Age and Roman settlement. Limited activity was also identified dating from the Neolithic, Medieval and Post Medieval periods (156643, TQ0768877399).

4.16 An archaeological excavation was undertaken in 2011 on the Phase Two area of Sipson Farm. Ninety-five archaeological features were recorded in the Phase Two area, of which, most were prehistoric in date. The features comprised twenty-five ditches, two wells, around twenty-eight pits, seventeen post/stakeholes, and a number of natural features. The ditches are thought to be part of a middle to late Bronze Age field system. Later features were of a medieval to modern date and mainly comprised of ditches and associated field boundaries/systems (165141, TQ0786177443).

4.17 A archaeological watching brief was conducted along the Northern Perimeter Road at Heathrow Airport during 1997. Twelve features were observed including pits and ditches of uncertain date (161357, TQ0710476722).

4.18 An archaeological watching brief at the 33KV Central Terminal Area, Heathrow Airport, was undertaken in 2000 in advance of the placement of electricity cables. No significant archaeological features or remains were identified (172546, TQ0637576660).

4.19 An archaeological evaluation took place at the Norman Hay Site off Bath Road in 1997, comprising excavation of nine trial trenches which revealed a probable prehistoric ditch, a medieval gully and postholes, and a possible Roman or Saxon ditch. Three Saxon pits were also identified (165632, TQ0700877082).

4.20 An archaeological watching brief was undertaken at 234 Bath Road, Harlington in 2024, and recorded a possible Prehistoric land surface which had been cut into by two pits (224806, TQ0807876996).

Prehistoric: Palaeolithic and Mesolithic

4.21 The Palaeolithic period represents the period of human activity leading up to the end of the last Ice Age, and the emergence of anatomically modern human beings. Little is known about the lifestyles and activities of these people, as the bulk of survivable direct evidence comes from stone tools that have been recovered, often relocated from their original deposition locations by erosion and water movement, and from rare skeletal fragments and faunal remains.

4.22 The presence of brickearth (Langley Silt Member) across the Site presents a potential for encountering Palaeolithic remains, from the findspots of relevant evidence within this geological horizon elsewhere within the Thames Valley (Juby, 2011; Wymer, 1999).

4.23 A scatter of various Palaeolithic and Mesolithic flints are recorded from Home Farm, Harmondsworth (118842, TQ0699777543), c.450m north-west of the Site.

4.24 Gravel extraction around West Drayton, Yiewsley and Sipson, has revealed small quantities of Mousterian and Levallois flint tools and flakes, dating from the Palaeolithic period (Cotton et al, 1986: 16, 24). The documented presence of brickearth in these locations also suggests a potential for further evidence from this period (Ibid; Bolton et al, 1971). Brickearth in general is recognised as a well-documented source of Palaeolithic evidence.

4.25 The presence of Palaeolithic material can be notoriously difficult to predict. However, the few finds within the vicinity of the Site, and the presence of brickearth, suggests a low to moderate archaeological potential for Palaeolithic evidence to be present at the Site.

4.26 The Colne River Valley, located c.2.5 km west of the Site, has produced palaeo-environmental evidence dating from the Mesolithic period, from the riverine alluvial silts laid down during periods of flooding (Lewis et al, 1992). However, the location of the Site further up the river valley closer to the gravel terraces, in addition to the paucity of Mesolithic evidence in the study area GLHER, suggests a low potential for archaeological evidence of this period at the Site.

Neolithic

4.27 From around 4000 BC, the mobile hunter-gathering economy of the Mesolithic period gradually gave way to a more settled agriculture-based subsistence. The pace of woodland clearance to create arable and pasture-based agricultural land varied regionally and locally, depending on a wide variety of climatic, topographic, social and other factors. The trend was one of a slow, but gradually increasing, pace of forest clearance.

4.28 Extensive evidence for Neolithic settlement activity, including a large enclosure (118146, TQ0836977621) is recorded from numerous archaeological excavations south of the M4 at Sipson Lane and Victoria Lane (121296, TQ0809578202), between 950m and 1.4km north-east of the Site. Neolithic pits and ditches are recorded from an archaeological excavation at Home Farm, Harmondsworth (151553, TQ0697577701; 156637, TQ0697577702), c.500m north-west from the Site. Evidence for Neolithic activity is also recorded from Sipson Road, Harlington, c.200m north-east from the Site (127324, TQ0768977400).

4.29 A Neolithic bowl was recovered during excavations on a Bronze Age settlement and field system, c.500m north-west of the Site (95370, TQ0694377491), and Neolithic flint fragments were recovered from an assemblage comprising finds dating from the Palaeolithic to the Neolithic (118842, TQ0699777543). An unstratified Neolithic flint arrowhead was recovered during an evaluation in close proximity to Bronze Age, and other undated prehistoric, features, c.1km east of the site (106804, TQ0842376981).

4.30 During expansion of Heathrow Airport in 1969, a Neolithic segmented ditch was discovered, associated with a cursus monument discovered on the western edge of the airport, c.2.5km south-west of the Site. The latter was formed of two parallel ditches either side of a 20m wide raised platform, stretching for 4km, and dated to 3800 BC (Sherwood, 2009: 23-24). In addition, 80,000 artefacts dating from the Mesolithic and Neolithic were recovered.

4.31 The evidence indicates that the Site lay within a wider landscape of Neolithic occupation and activity, involving settlement, tool production and hunting. In addition to the Site's location on the higher, drier ground above the Colne River during this period, the potential for further Neolithic archaeological evidence can be considered moderate.

Bronze Age

4.32 By 1000 BC, the landscape was probably a mix of extensive tracts of open farmland, punctuated by earthwork burial and ceremonial monuments from distant generations, with settlements, ritual areas and defended locations reflecting an increasingly hierarchical society.

4.33 An extensive Bronze Age field system is recorded between 500m and 970m north-west of the Site at Home Farm, Harmondsworth (156637, TQ0697577702; 162262, TQ0670977487), together with settlement evidence (95370, TQ0694377491; 159954, TQ0705577525; 162665, TQ0670777484; HEP Refs: 25, 36, 37, 43, 44, 45). Archaeological investigations at Sipson Farm, Sipson Road revealed widespread evidence for Bronze Age settlement and activity, including structures, field systems and cremation burials (125128, TQ0768977400; 171384, TQ0768977400; 156643, TQ0768877399). A Bronze Age settlement and field system is recorded at Wall Garden Farm/Nine Elms Farm, Harlington, between 900m and 1.4km north-east of the site (132797, TQ0811578203; 165228, TQ0769378107). The Neolithic enclosure recorded at Sipson Lane was recut in the Bronze Age and a small enclosed cremation cemetery established. Further enclosures, field systems and buildings were also established in this site during the Bronze Age (146846, TQ0827777708; 171757, TQ0812277774).

4.34 In the wider landscape, ploughed-down barrows have been identified within the vicinity of Heathrow, to the south of the Site in unknown exact locations (Cotton et al, 1986). In addition, gravel extraction at Yiewsley, c.3km north-west of the site, revealed a Bronze Age cremation cemetery, and pottery sherds discovered near Sipson showed a very similar fabric to those of the urns (Ibid).

4.35 The presence of Bronze Age settlement and field systems in close proximity to the Site suggests a moderate potential for the site itself. The foci of settlement appear to build on those established in the Neolithic, indicating an intensification of activity in the surrounding area.

Iron Age

4.36 Archaeological investigations at Home Farm, Harmondsworth Lane, between 350m and 500m north-west of the Site, revealed Iron Age pits and a ditch (159954, TQ0705577525; 98016, TQ0705577526), with the site apparently being abandoned in the late Iron Age. Iron Age occupation is recorded at Wall Garden Farm, Sipson Lane, Harlington, c.870m north of the site, in the form of pits and gullies (165228, TQ0769378107). An Iron Age settlement is recorded at Sipson Road, c.250m north-east of the site (156643, TQ0768877399; 123108, TQ0764177382). Residual Iron Age pottery is recorded from c.720m north of the site (101011, TQ0787177847).

4.37 Several undated features, primarily pits, were encountered during a watching brief c.350m south of the Site, some provisionally attributed to the Iron Age by small fragments of iron slag (141526, TQ0721376698).

4.38 Archaeological investigations at Combined Operations Centre, c.1km to the west of the Site, recorded a large, shallow dish-shaped hollow measuring containing a small quantity of pottery of possible Iron Age date (155778, TQ0639976855; 95780, TQ0639976855).

4.39 Evidence of Iron Age occupation at Imperial College Sports Ground, c.970m north-east of the Site, included an enclosure, gullies and three roundhouses (135670, TQ0829377626).

4.40 Further evidence of Iron Age occupation was encountered, continuing on from that of the Bronze Age at Victoria Lane/Sipson Lane (132797, TQ0811578203), and preceding significant Roman occupation at the same location and at Sipson Road, c.870m north-west of the Site (117815, TQ0833277642).

4.41 During construction of Heathrow Airport in the 1944, an extensive Iron Age settlement was encountered and hastily documented, c.1.2km south-east of the Site. This consisted of a banked enclosure (previously thought to be Roman, and named “Caesar’s Camp”), containing numerous roundhouses within a defined occupation area, and a square, wooden temple structure (Sherwood, 2009: 22). The site is marked on a map from 1960 as Celtic Temple (site of) (not reproduced).

4.42 The Site appears to be situated within an occupied landscape during the Iron Age, continuing on from settlement activity of the preceding Neolithic and Bronze Age periods, often in the same locations. Although the centres of settlement appear to be to the north-east, east and south-east of the Site, the proximity of these areas suggests the potential for further Iron Age archaeological evidence at the Site itself to be moderate.

Roman

4.43 During the Roman period, the site lay near to the route of the London to Silchester Road (Margary, 1955: 77-78). A branch road leading south from Verulamium (St Albans) is believed to have run along the east bank of the Colne River, to the west of the site. The roadside settlement at Pontes (Staines), c.6.5km south-west of the Site, took its name from the road bridges here crossing the Thames (Latin pontes: “bridges”).

4.44 Several areas of prehistoric occupation within the study area continued and expanded in the Roman period, comprising enclosures, roundhouses, cremations and inhumations, with a focus of activity at Wall Garden Farm/Nine Elms Farm, c.1km to the north-east of the Site (117815, TQ0833277642; 121296, TQ0809578202; 123108, TQ0764177382; 156643, TQ0768877399; 171384, TQ0782877456).

4.45 Further evidence of field systems may have been identified at Imperial College Sports Ground, c.600m north-east of the Site (100977, TQ0774477851).

4.46 Unstratified Roman finds are recorded from Home Farm, Harmondsworth (105014, TQ0705577525; 159954, TQ0705577525), Bath Road (116935, TQ0697777096), Blunts Field (135736, TQ0721476975) and Sipson Lane (101011, TQ0787177847).

4.47 A Roman farmstead excavated at Sipson Lane in the 1980s revealed a waterlogged gravel quarry, containing several timber artefacts, including a ladder, structural beams, a stool and a fishing net float. Corn-drying or malting ovens were also encountered (Cotton et al, 1986: 65). The exact location of this site is unknown, as is its relationship to the other nearby Roman sites.

4.48 From the evidence, it is clear that the Site lay within an active Roman landscape, although a reduction of settlement intensity suggests nucleation at other, nearby locations, such as Pontes and the settlement discovered at Wall Garden Farm/Nine Elms Farm. The Site itself likely lay within an agricultural landscape, suggesting a moderate potential for archaeological evidence of field systems and artefact scatters.

Saxon & Early Medieval

4.49 Harmondsworth is first mentioned in an Anglo-Saxon charter of AD 780, documenting the granting of land named *Hermonds* to a servant of King Offa of Mercia (Sherwood, 2009).

4.50 A possible Anglo Saxon sunken featured building is recorded at Home Farm, Harmondsworth, c.650m north-west of the Site (121369, TQ0710477705; 156637, TQ0697577702; 162262, TQ0670977487). A number of Saxon pits are recorded from Bath Road, Harmondsworth, c.440m west of the Site (110840, TQ0697777096; 96252, TQ0702977089; 165632, TQ0700877082). A further Anglo Saxon building is recorded at Imperial College Sports Ground, c.700m north of the Site (97313, TQ0760777844; 156935, TQ0769077784).

4.51 The Site is situated between the settlements of *Hermodesworde* (Harmondsworth), *Herdintone* (Harlington) and *Draitone* (West Drayton), all of which appear in the Domesday Survey of AD 1086, as large settlements with extensive ploughlands and meadows.

4.52 Evidence for Medieval or Post Medieval ridge and furrow is recorded across the Site, and areas to the east, north and west, as faint cropmark traces on aerial photographs from the 1940s (HEP Refs: 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33). Possible Medieval or Post Medieval field boundaries are also recorded as cropmarks to the west of the Site (HEP Refs: 3, 6, 24). Further evidence of Medieval ploughing and enclosure between 600m and 1km north-east of the site (150114, TQ0832577584; 171384, TQ0782877456; 165141, TQ0786177443).

4.53 Scatters of Medieval pottery are recorded c.400m north-west of the site (105014, TQ0705577525; 159954, TQ0705577525).

4.54 The village of Sipson is first mentioned in 1150 as Sibwineston, meaning ‘farmstead of a man called Sibwine’ (Mills, 2010: 227). Sipson is further mentioned in 1214 along with Harmondsworth, Longford and Southcote, and is recorded as having only 14 houses in 1337 (Bolton, 1971).

4.55 The King William IV public house in Sipson, c.820m north-west of the Site, is listed as being of late medieval date (1080164 LB; Sherwood, 2009: 111).

4.56 The Site appears to be situated within an agricultural landscape occupied throughout the Medieval period, likely continuing on from Roman settlement, with evidence for ridge and furrow agricultural activity recorded within the Site. Although the foci of Anglo-Saxon settlement appear to be to the west in Harmondsworth, and to a lesser extent at Wall Garden Farm/Nine Elms Farm, and the later medieval settlement in Sipson, the site itself has a moderate potential for archaeological evidence, likely in the form of field enclosure, agricultural or drainage ditches, and scatters of artefacts.

Post Medieval & Modern (including map regression exercise)

4.57 Harmondsworth occupied a strategic location in the Post Medieval and early modern periods on the coaching route between London and the west, prompting many inns to be built both here and in nearby Sipson (Weinreb *et al* 2008: 385).

4.58 Evidence for Medieval or Post Medieval ridge and furrow is recorded immediately to the north of the Site, and areas to the east, north and west, as faint cropmark traces on aerial photographs from the 1940s (HEP Refs: 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33). Possible Medieval or Post Medieval field boundaries are also recorded as cropmarks to the west of the Site (HEP Refs: 3, 6, 24).

4.59 Evidence of Post Medieval occupation, including the remains of walls, wells and rubbish pits has been recorded around Sipson, c.850m north-west of the Site (146302, TQ0713877934; 137740, TQ0843176981; 171477, TQ0751478065). Post Medieval field systems and evidence of enclosure have been recorded c.1km west of the site (119980, TQ0646477001; 98967, TQ0670677486, 162091, TQ0646477001; 109816 and 155778, TQ0639976855; 129243, TQ0639976855; HEP Refs: 36, 37, 43, 44, 45), c.900m north (127987, TQ0732578124) and c.1km north-east (142135, TQ0835177619).

4.60 John Rocque's Survey of Middlesex (Figure 3, 1754) shows the Site within open fields to the north of Bath Road. Following enclosure in the early 19th century, the Site lay within parts of three fields owned by Samuel Wells Esq and John Grove, likely used for agricultural purposes (Figure 4: 1819 Enclosure Map).

4.61 Maps from the late 19th and early 20th centuries place the Site within an area of orchards and pasture (see Figure 5: 1866 First Edition Ordnance Survey). The Heathrow School was founded in 1875 on the north side of Bath Road within the southern area of the Site. The land for Heathrow School was donated by George Stevens Byng, 2nd Earl of Strafford. The school opened in 1877. The school was intended in 1891 and soon after it was renamed 'Sipson and Heathrow School'.

4.62 The 1896 Second Edition Ordnance Survey shows the layout of the school within the southern part of the Site (Figure 6), with an area of orchard to the north. The 1935 Revised Ordnance Survey (Figure 7) shows no significant changes within the Site.

4.63 The surrounding landscape was significantly altered in the mid-1940s with the construction of Heathrow Airport. The village of Heathrow was removed, and by 1960 the corridor for the M4 branch road to Heathrow Airport had been excavated, the top of the western bank located to the east of the Site. The 1962-1966 (Figure 8) shows the Site remaining as a school facility, with orchards planted towards the centre.

4.64 After the building of Heathrow Airport, the Sipson and Heathrow School was severely affected by aircraft noise from the North Runway. In 1966 the school moved to Harmondsworth Lane in Sipson and the school buildings on Bath Road were demolished. The 1988-92 Ordnance Survey (Figure 9) shows the Site empty of school buildings and was understood to form part of the wider car park facility.

4.65 Figures 10-12 reproduce the 1999 and 2014 aerial photographs, and the current site survey, showing the Site in use as a carpark.

4.66 The Post Medieval and modern agricultural activity recorded on the Site has a moderate to high potential to have left associated evidence, comprising irrigation and drainage ditches, and remains of enclosure. The remains of the demolished late 19th century school buildings may survive within the southern and central parts of the Site, however, overall, these remains are considered likely to have limited archaeological interest and significance.

Assessment of Significance

4.67 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.

Designated Archaeological Heritage Assets

4.68 In terms of relevant nationally significant designated heritage assets, the study site does not lie within the vicinity of a World Heritage Site, Scheduled Monument, Historic Battlefield or Historic Wreck.

4.69 In view of the above it is concluded that the redevelopment proposals will have no direct archaeological impact upon relevant designated heritage assets.

Non-Designated Archaeological Heritage Assets

4.70 In terms of local designations, the Site is located within the Heathrow Archaeological Priority Zone (77820, TQ0719376187), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.2).

4.71 Overall it would appear that while it is possible that archaeological remains of Neolithic, Bronze Age, Iron Age, Roman and Saxon date may be present within the Site boundary, the balance of probability is that these will be of local significance only.

4.72 In the event of significant Neolithic archaeological evidence being encountered, this could be considered of regional significance.

4.73 As identified by desk-based work, archaeological potential by period and the likely significance of any archaeological remains which may be present is summarised in table form below and mapped where possible on Figure 2:

Period:	Identified Archaeological Potential	Identified Archaeological Significance
Prehistoric (Palaeolithic and Mesolithic)	**Low potential**	**Low (Local)**
Prehistoric (Neolithic and Bronze Age)	**Moderate potential** for archaeological remains associated with late prehistoric settlement and activity.	**Low (Local) to Medium (Regional)** depending on nature of the findings, if encountered

Iron Age and Roman	**Moderate potential** for archaeological remains associated with settlement and/or agricultural activity.	**Low (Local)**
Saxon-Early Medieval/Late Medieval	**Moderate potential** for archaeological remains associated with settlement and/or agricultural activity	**Low (Local)**
Post Medieval-Modern	**Moderate to High potential** for archaeological remains of agricultural activity and the remains of a late 19th century school and built-up deposits associated with its demolition. These remains would be of low archaeological interest and significance.	**Low (Local)**

5 SITE CONDITIONS, THE PROPOSED DEVELOPMENT & REVIEW OF POTENTIAL DEVELOPMENT IMPACTS ON ARCHAEOLOGICAL ASSETS

Site Conditions

5.1 The Site currently comprises an area of carparking within a wider carparking facility, together with an area of hardstanding to the northwest projecting to Sipson Way (see Figures 11 and 12).

5.2 Excavations for foundations for school buildings in the late 19th century will have caused a severe but localised impact on archaeological horizons within the southern and central parts of the Site (Figure 6).

5.3 Excavations for services within the car park will have caused localised impacts on archaeological horizons across the site (see Appendix 3: Plan showing utilities).

5.4 Agricultural/horticultural use of the Site prior to development can be considered likely to have had a moderate, widespread negative archaeological impact.

Proposed Development

5.5 A hybrid application is to be submitted for the Proposed Development, consisting of full planning permission for the creation of a mixed use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access.

5.6 The proposed ground level plan is reproduced at Figure 13.

Review of Potential Development Impacts on Archaeological Assets

5.7 The Proposed Development will not impact on any below ground designated or known non-designated archaeological assets.

5.8 The Site is located within the Heathrow Archaeological Priority Zone (77820, TQ0719376187), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.22).

5.9 The Site can be considered to have a moderate potential for archaeological remains dating to the Neolithic, Bronze Age, Iron Age, Roman and Saxon periods. Medieval and Post Medieval remains evidencing agricultural activity, of limited archaeological interest and significance, are also anticipated.

5.10 Past post-depositional impacts within the Site are considered to have had a severe negative archaeological impact.

6 SUMMARY AND CONCLUSIONS

6.1 An element of the Heathrow Flightpath Car Park, Bath Road, Sipson, UB7 0DU, has been reviewed for its below ground archaeological potential.

6.2 In accordance with relevant government planning policy and guidance, a desk-based assessment has been undertaken to clarify the archaeological potential of the Site.

6.3 In terms of relevant nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Protected Wreck Sites or Registered Battlefields have been identified within the vicinity of the Site.

6.4 The Site is located within the Heathrow Archaeological Priority Zone (77820, TQ0719376187), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.22).

6.5 The site can be considered to have a moderate potential for archaeological remains dating from the Neolithic, Bronze Age, Iron Age, Roman, Saxon periods; Medieval and Post Medieval remains evidencing agricultural activity of limited archaeological interest and significance are also anticipated.

6.6 Past post-depositional impacts within parts of the Site are considered to have had a severe negative archaeological impact. These impacts are expected to be more significant within the southern and central parts of the area, associated with the construction and demolition of the former school facility.

6.7 A hybrid application is to be submitted for the Proposed Development, consisting of full planning permission for the creation of a mixed use sustainable vehicle parking facility (Sui Generis) and food and beverage unit (Class E), alongside ancillary welfare and staff buildings, and other supporting infrastructure and site levelling, and outline planning permission for a future extension to the facility, with all associated matters reserved except for access.

6.8 Excavations for foundations have the potential to impact archaeological remains of probable local or regional significance.

6.9 Advice from the archaeological planning advisor to the London Borough of Hillingdon for a previous planning application for the redevelopment of the Site confirmed that a two-stage archaeological condition would be required, comprising a stage 1 trial trench evaluation, with any subsequent stage 2 mitigation determined on the results of the evaluation.

6.10 It has been anticipated that a similar programme of archaeological works will be required to mitigate the impact of the new redevelopment proposals within the Site, dependant upon the impact of the proposals.

6.11 Remains of national significance which might preclude development are not anticipated at the Site, so it is therefore suggested that if further archaeological investigation is required, this could be attached to the granting of consent secured by an appropriately worded planning condition.

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Cartographic

1754 John Rocque's Map of Middlesex

1819 Parish of Harmondsworth Enclosure Map

1866 Ordnance Survey

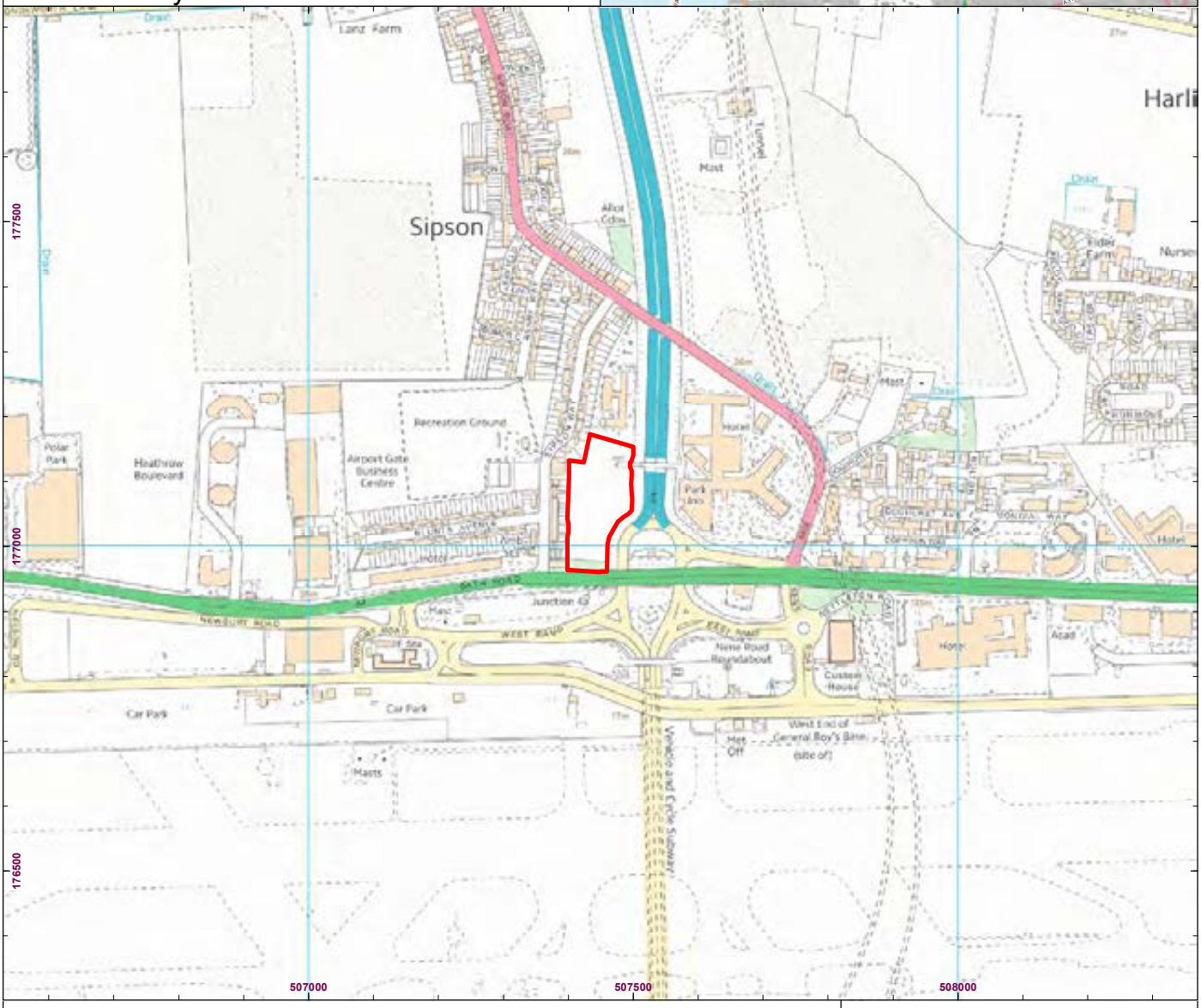
1896 Ordnance Survey

1935 Ordnance Survey

1962-66 Ordnance Survey

1988-92 Ordnance Survey

FIGURES



Site Boundary

N

0 100 200 m

Scale at A4: 1:10,000

rps
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Figure 1

Site Location

DM 16/12/2024

Legend

- Site Boundary
- 1km Search Radius

Non-designated Heritage Assets:

- HER Monument Points
- HER Monument Polygons

Archaeological Priority Areas

- 77820, Heathrow Area
- 78393, Sipson

Heathrow Airport Expansion Project (HEP) Shapefiles

- CROPMARK
- CROPMARK / DESTROYED MONUMENT
- EARTHWORK
- EARTHWORK / DESTROYED MONUMENT
- EARTHWORK / LEVELLED EARTHWORK / DESTROYED MONUMENT
- STRUCTURE / DEMOLISHED STRUCTURE
- Ridge and Furrow

Previous Archaeological Work:

- HER Event Lines
- HER Event Points
- HER Event Polygons

N

0 100 200m

Scale at A3: 1:8,000

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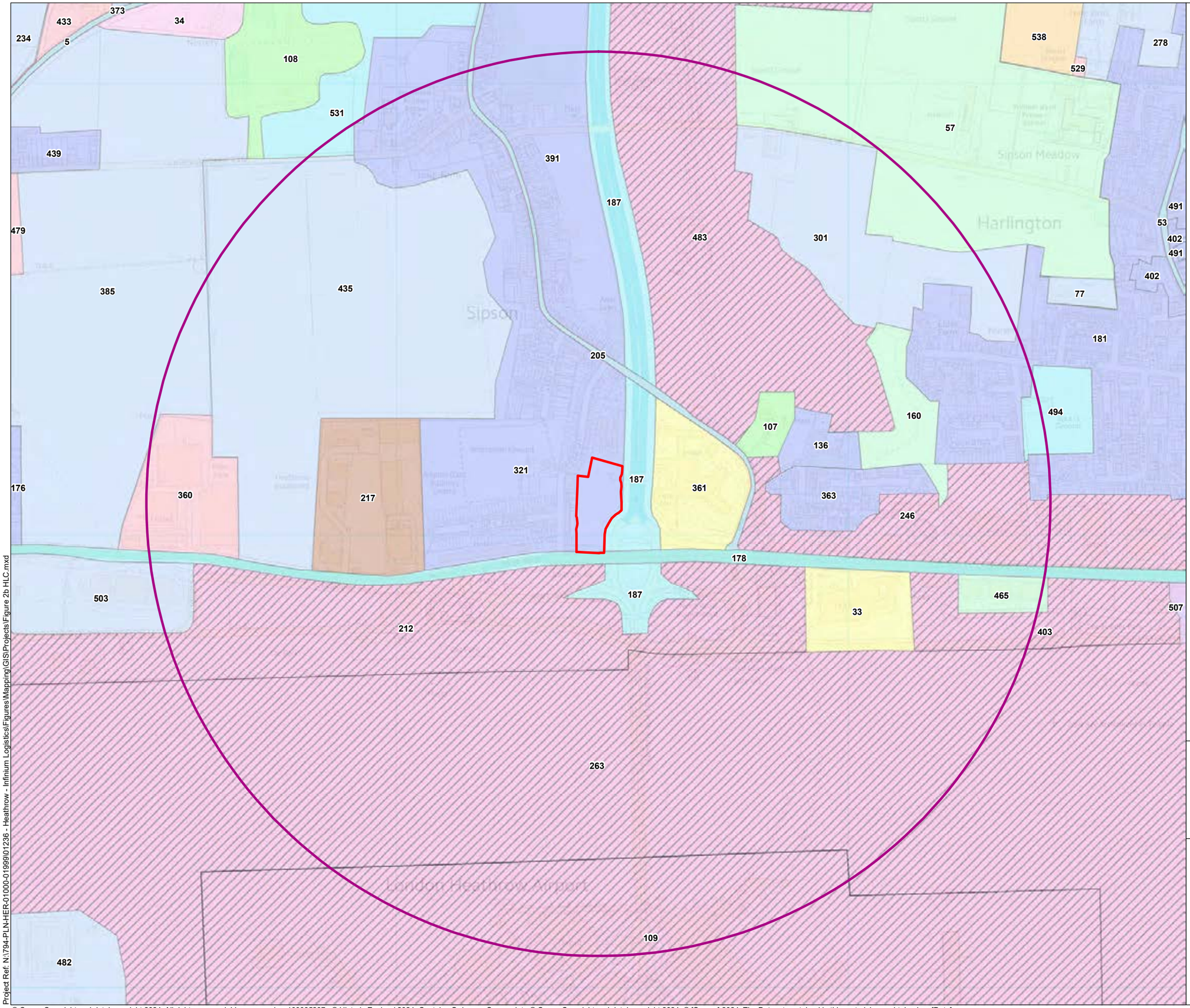
Figure 2a

Summary of heritage designations and archaeological findspots (source: GLHER)

Project Ref: N:\794-PLN\HER-01000-01999\01236 - Heathrow - Infinium Logistics\Figures\Mapping\GIS\Projects\Figure 2a HER.mxd

DM 12/12/2024



Legend

- Site Boundary
- 1km Search Radius

Historic Landscape Characterisation:

- 01 Unenclosed or unimproved land
- 02 Enclosed land
- 03 Woodland
- 04 Industrial land
- 05 International Airport
- 07 Ornamental
- 08 Settlements
- 09 Orchards and Horticulture
- 10 Communications
- 11 Valley floor and water management
- 12 Civic
- 13 Commercial
- 14 Extractive Industries
- 15 Recreational
- 16 Services

N

0 100 200m

Scale at A3: 1:8,000

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Figure 2b

Historic Landscape Characterisation (source: GLHER)

Project Ref: N:\794-PLN-HER-01000-01999\01236 - Heathrow - Infinium Logistics\Figures\Mapping\GIS\Projects\Figure 2b HLC.mxd

Site Boundary (approximate)

N

Not to Scale:
Illustrative Only

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Figure 3

1754 John Rocque's Map of Middlesex

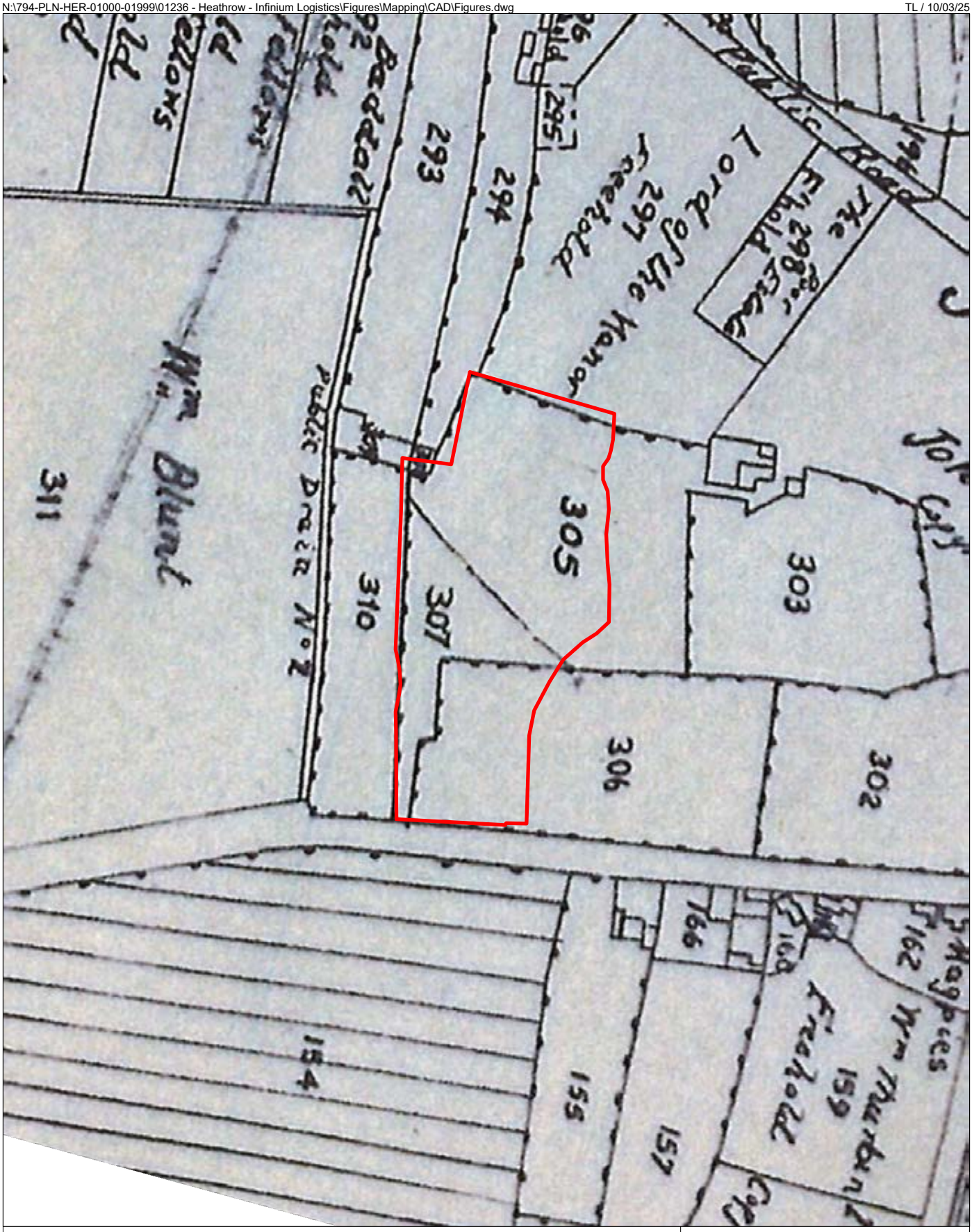

Figure 4

1819 Parish of Harmondsworth Enclosure Map

Site Boundary

N

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Scale at A4: 1:2,000

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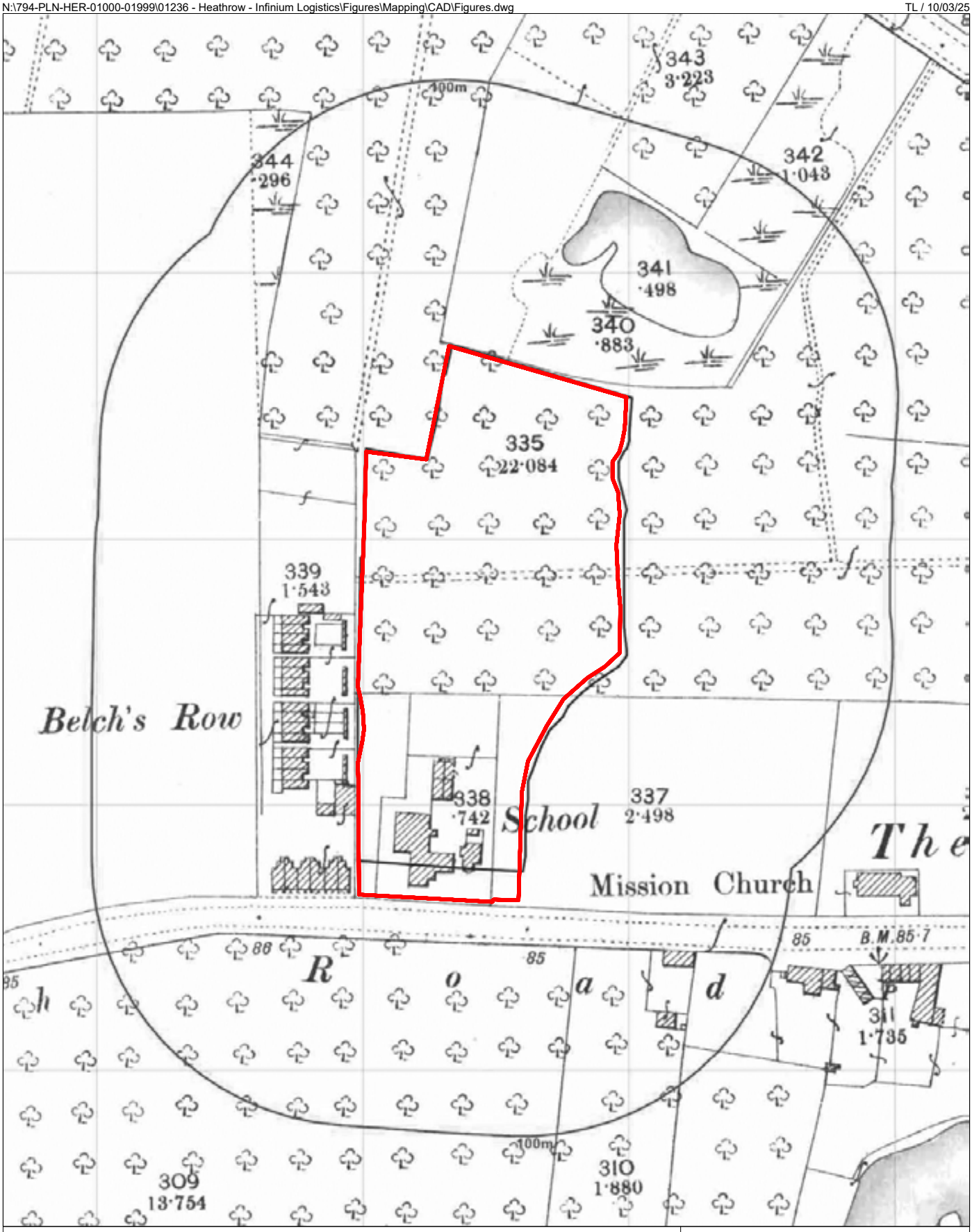
Figure 5

1866 Ordnance Survey Map



Site Boundary

N

0 10 20 30 40 50m

Scale at A4: 1:2,000

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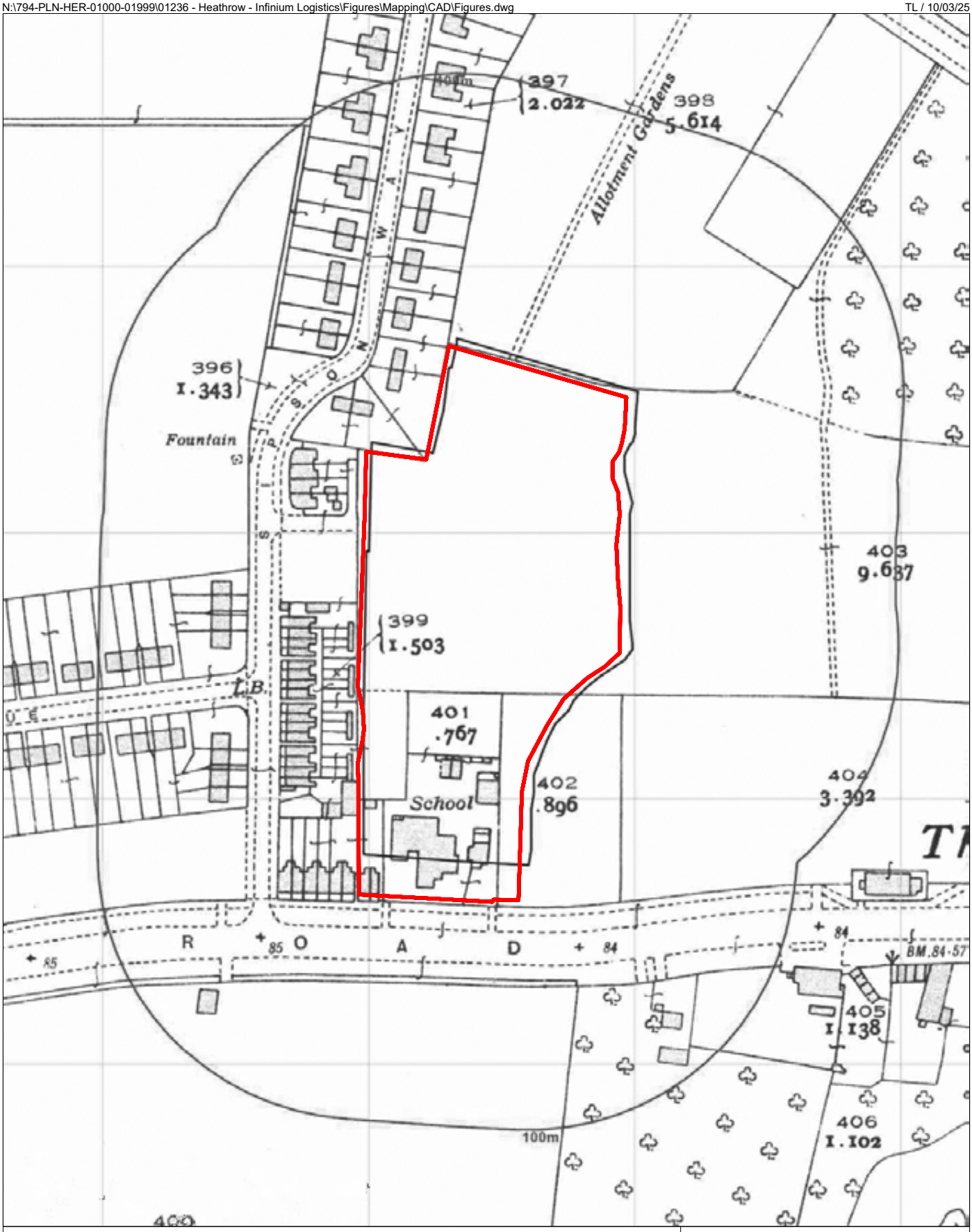
Figure 6

1896 Ordnance Survey Map



Site Boundary

N

0 10 20 30 40 50m

Scale at A4: 1:2,000

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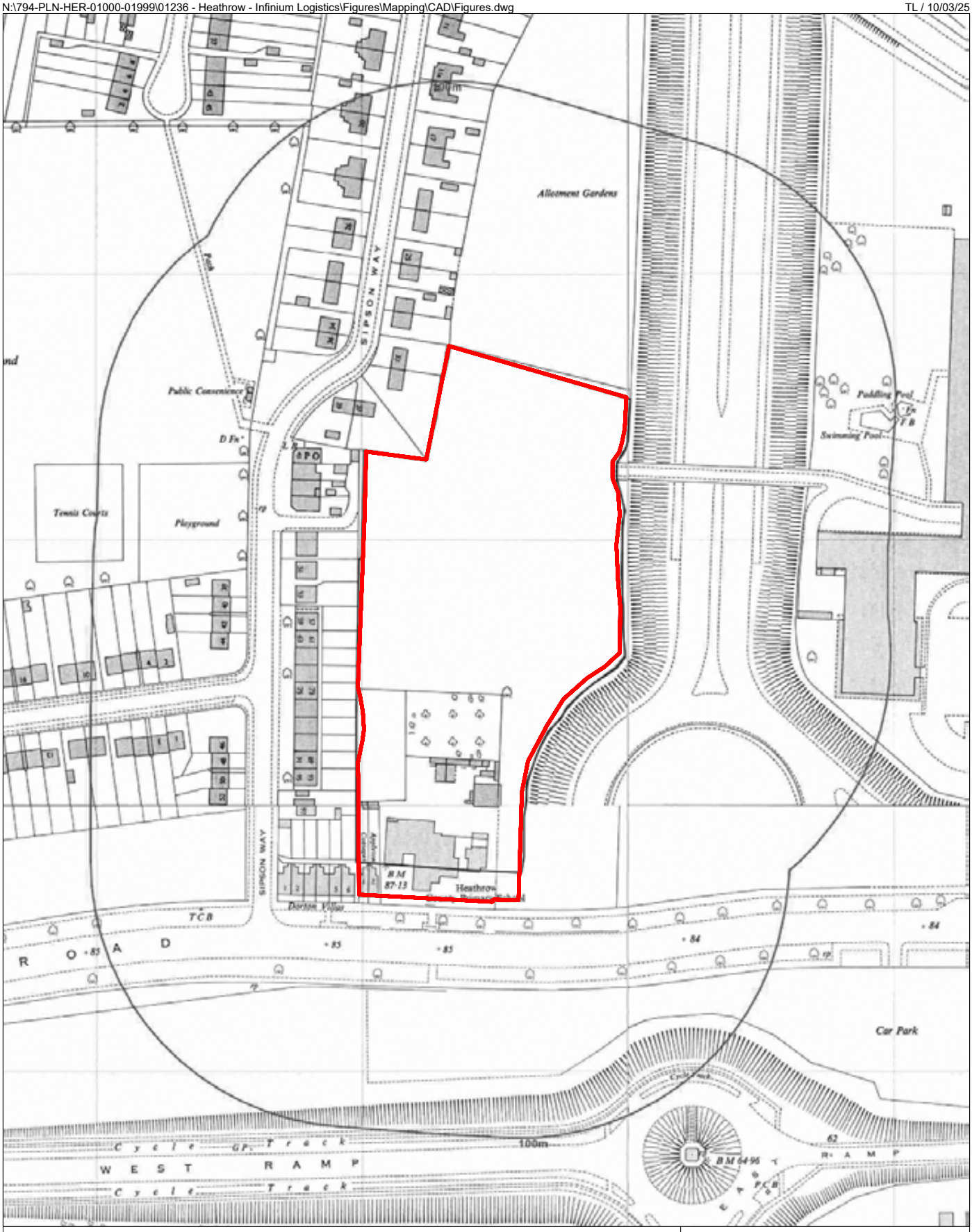
Figure 7

1935 Ordnance Survey Map



Site Boundary

N

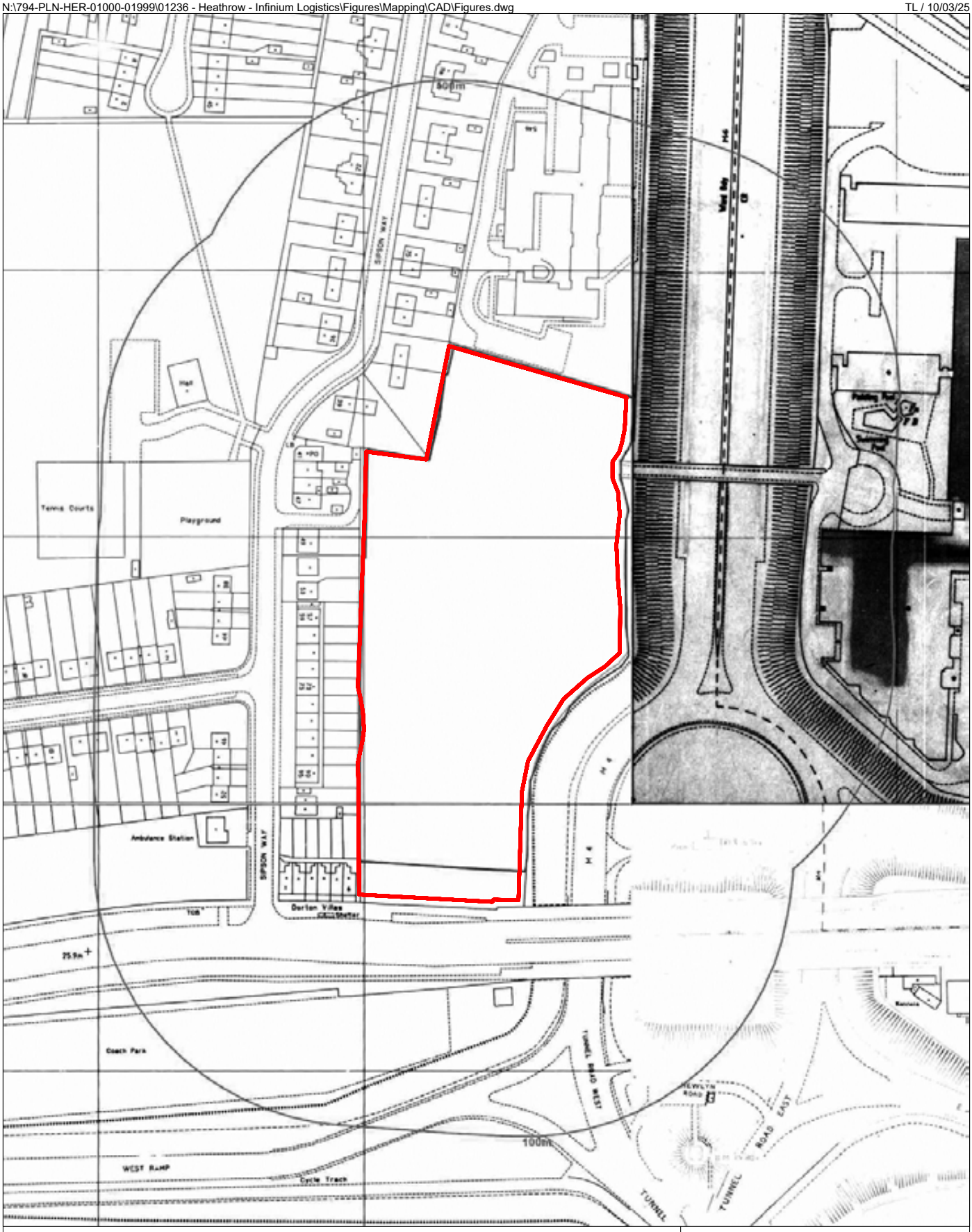
0 10 20 30 40 50m

Scale at A4: 1:2,000

A TETRA TECH COMPANY

Figure 8

1962-66 Ordnance Survey Map



Site Boundary

N

0 10 20 30 40 50m

Scale at A4: 1:2,000

A TETRA TECH COMPANY

Figure 9

1988-92 Ordnance Survey Map

Site Boundary

N

Not to Scale:
Illustrative Only

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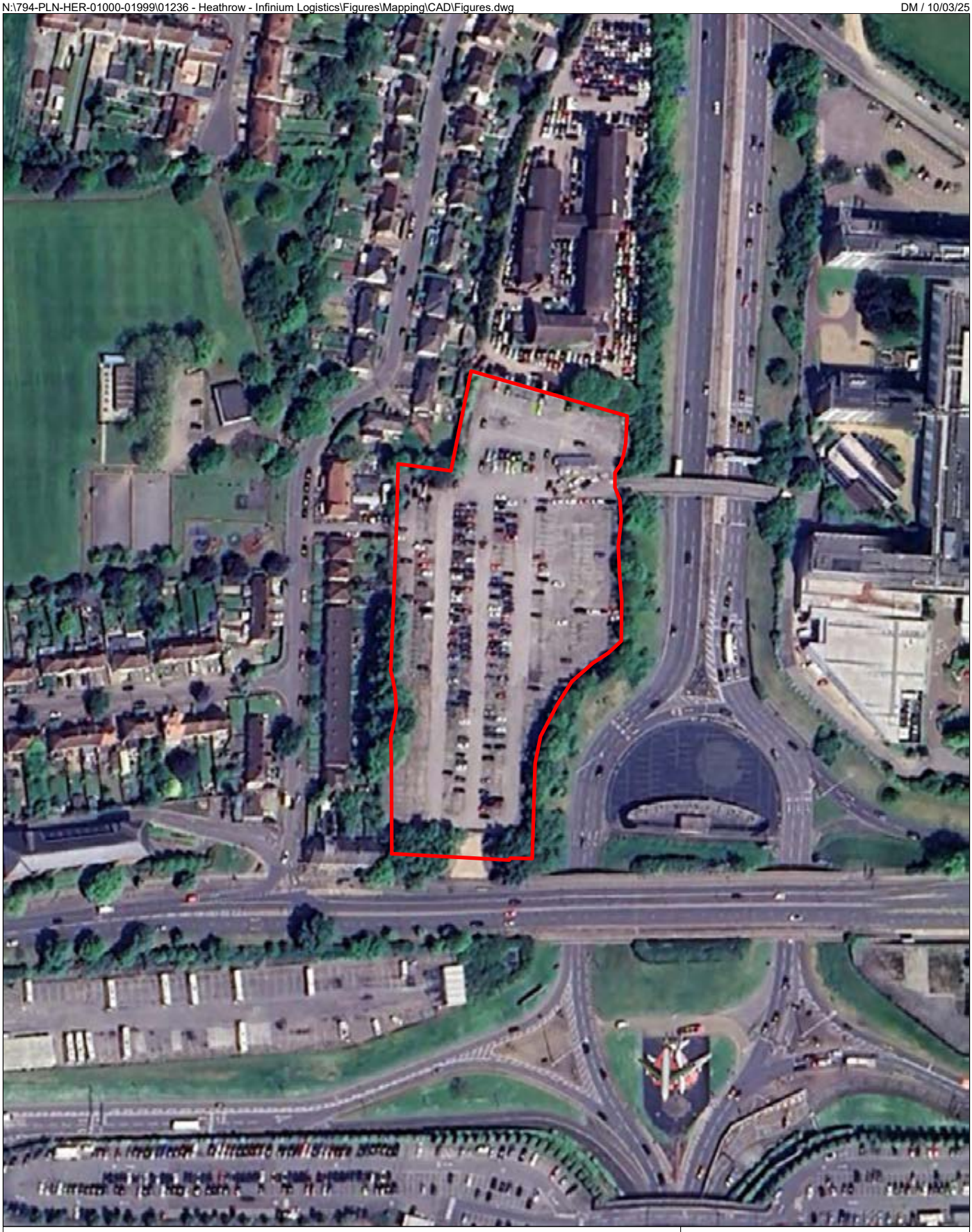
Figure 10

1999 Aerial Photograph



Site Boundary

N

Not to Scale:
Illustrative Only

A TETRA TECH COMPANY

Figure 11

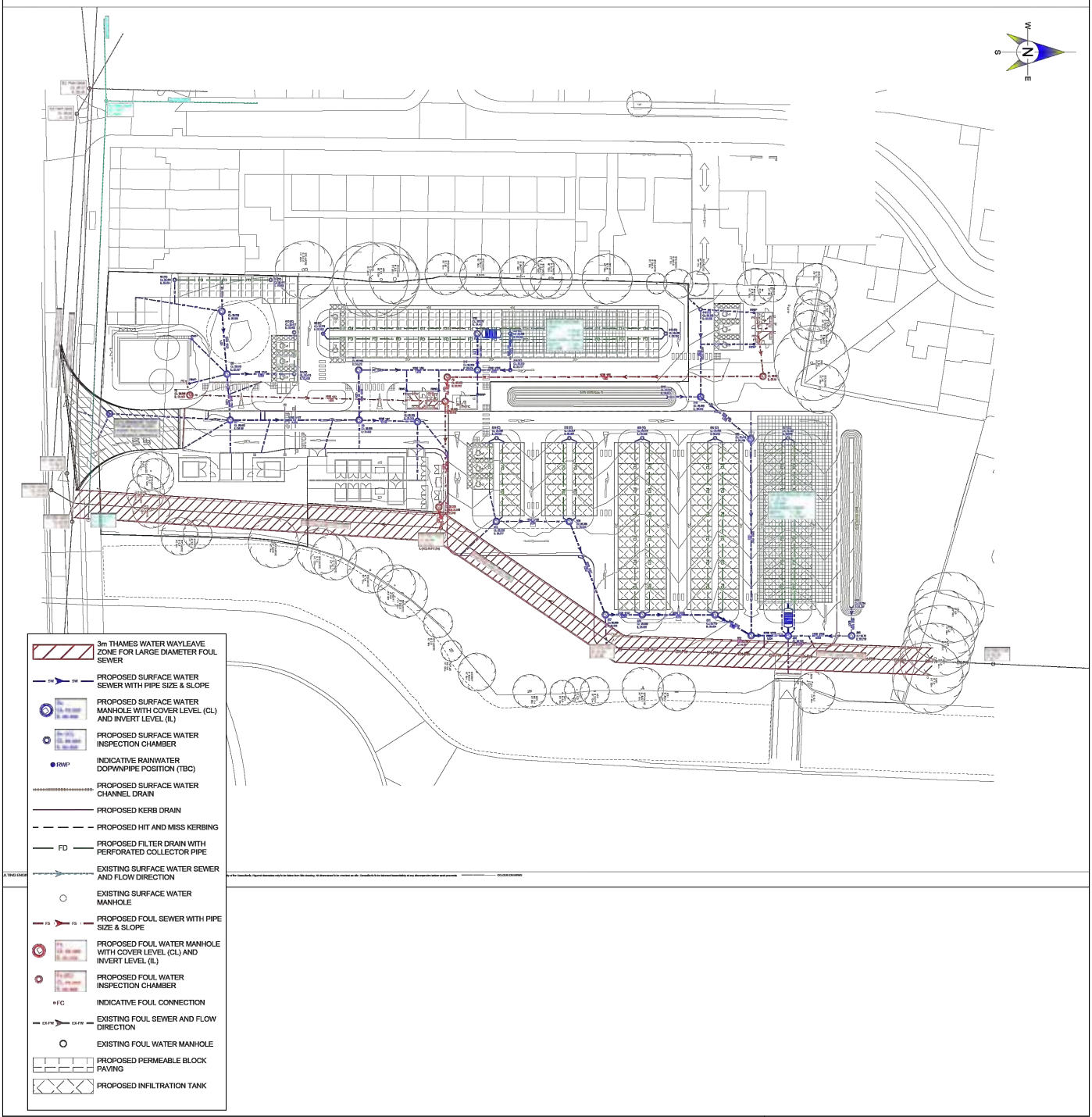
2024 Aerial Photograph

Not to Scale:
Illustrative Only

A TETRA TECH COMPANY

Figure 12

Redevelopment proposals plan site wide (March 2025)



Not to Scale:
Illustrative Only

A TETRA TECH COMPANY

Figure 13

Redevelopment proposals plan: drainage site wide (March 2025)

APPENDICES

Appendix 1

Archaeological advice letter from the GLAAS Archaeology Advisor in relation to planning application reference 41632/APP/2022/2301 (October 2022)

Historic England

Mr Christopher Brady
London Borough of Hillingdon
Civic Centre
High Street
Uxbridge
UB8 1UW

Your Ref: 41632/APP/2022/2301
Our Ref: 209057

Contact:
Sandy Kidd
02079733215
sandy.kidd@historicengland.org.uk

2022-08-11

Dear Mr Brady,

TOWN & COUNTRY PLANNING ACT 1990 (AS AMENDED)
NATIONAL PLANNING POLICY FRAMEWORK 2021

HEATHROW FLIGHTPATH NCP CAR PARK BATH ROAD SIPSON UB7 0DU
Demolition of existing car park and redevelopment for industrial (Use Class B2); storage or distribution (Use Class B8); and/or light industrial (Use Class E(g)(iii)) purposes, with ancillary office space, landscaping, car parking, servicing and access arrangements.

Recommend Archaeological Condition

Thank you for your re-consultation received on 07/10/22.

The Greater London Archaeological Advisory Service (GLAAS) gives advice on archaeology and planning. Our advice follows the National Planning Policy Framework (NPPF) and the GLAAS Charter.

Assessment of Significance and Impact
The planning application lies in an area of archaeological interest (Archaeological Priority Area) identified in the Local Plan: [77820] Heathrow Area

I have reviewed the RPS archaeological desk-based assessment and broadly agree with its conclusions. The site lies within a landscape of well documented intensive prehistoric and Roman occupation which has been the subject of ongoing archaeological research since the mid-twentieth century. The density of remains encountered on the Heathrow plateau and in

the vicinity of this site is such that it was likely utilised at least for some of this long time period. The DBA notes geotechnical and map evidence for modern disturbance on the southern, eastern and northern margins of the site, although the extent of such disturbance is unclear. Geotechnical records of the larger central area indicate that the modern made ground of the car park lies immediately above the natural Langley Silt into which archaeological features such as ditches or pits would be cut. Some truncation of such features such features during car park construction seems likely but it is unclear how severe that will prove to be. Overall the evidence presented in the DBA indicates a moderate potential for buried non-designated heritage assets of archaeological interest.

The proposed construction of large industrial and storage buildings plus associated groundworks would likely cause extensive loss of any surviving archaeological remains.

Planning Policies

NPPF Section 16 and the London Plan (2021 Policy HC1) recognise the positive contribution of heritage assets of all kinds and make the conservation of archaeological interest a material planning consideration. NPPF paragraph 194 says applicants should provide an archaeological assessment if their development could affect a heritage asset of archaeological interest.

NPPF paragraphs 190 and 197 and London Plan Policy HC1 emphasise the positive contributions heritage assets can make to sustainable communities and places. Where appropriate, applicants should therefore also expect to identify enhancement opportunities.

If you grant planning consent, paragraph 205 of the NPPF says that applicants should record the significance of any heritage assets that the development harms. Applicants should also improve knowledge of assets and make this public.

Recommendations

I advise that the development could cause harm to archaeological remains and field evaluation is needed to determine appropriate mitigation. However, although the NPPF envisages evaluation being undertaken prior to determination, in this case consideration of the nature of the development, the archaeological interest and/or practical constraints are such that I consider a two-stage archaeological condition could provide an acceptable safeguard. This would comprise firstly, evaluation to clarify the nature and extent of surviving remains, followed, if necessary, by a full investigation.

I therefore recommend attaching a condition as follows:

Condition No demolition or development shall take place until a stage 1 written scheme of investigation (WSI) has been submitted to and approved by the local planning authority in writing. For land that is included within the 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 the site which have archaeological interest a stage 2 WSI shall be submitted to and approved by the local planning authority 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. Where appropriate, details of a programme for delivering related positive public benefits
C. 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 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.

This pre-commencement condition is necessary to safeguard the archaeological interest on this site. Approval of the WSI before works begin on site provides clarity on what investigations are required, and their timing in relation to the development programme. If the applicant does not agree to this pre-commencement condition, please let us know their reasons and any alternatives suggested. Without this pre-commencement condition being imposed the application should be refused as it would not comply with NPPF paragraph 205.

I envisage that the archaeological fieldwork would comprise the following:

Evaluation

Stage 1 of the condition would involve excavating trial trenches evenly distributed across the site with a coverage of about 4% of site area to establish if archaeological remains survive and, if so, their character and extent. If stage 1 identifies significant remains then archaeological excavation prior to construction would be necessary as stage 2. The

developer should seek advice on potential time and resource implications and is strongly urged to undertake stage 1 at the earliest available opportunity.

An archaeological field evaluation involves exploratory fieldwork to determine if significant remains are present on a site and if so to define their character, extent, quality and preservation. Field evaluation may involve one or more techniques depending on the nature of the site and its archaeological potential. It will normally include excavation of trial trenches. A field evaluation report will usually be used to inform a planning decision (pre-determination evaluation) but can also be required by condition to refine a mitigation strategy after permission has been granted.

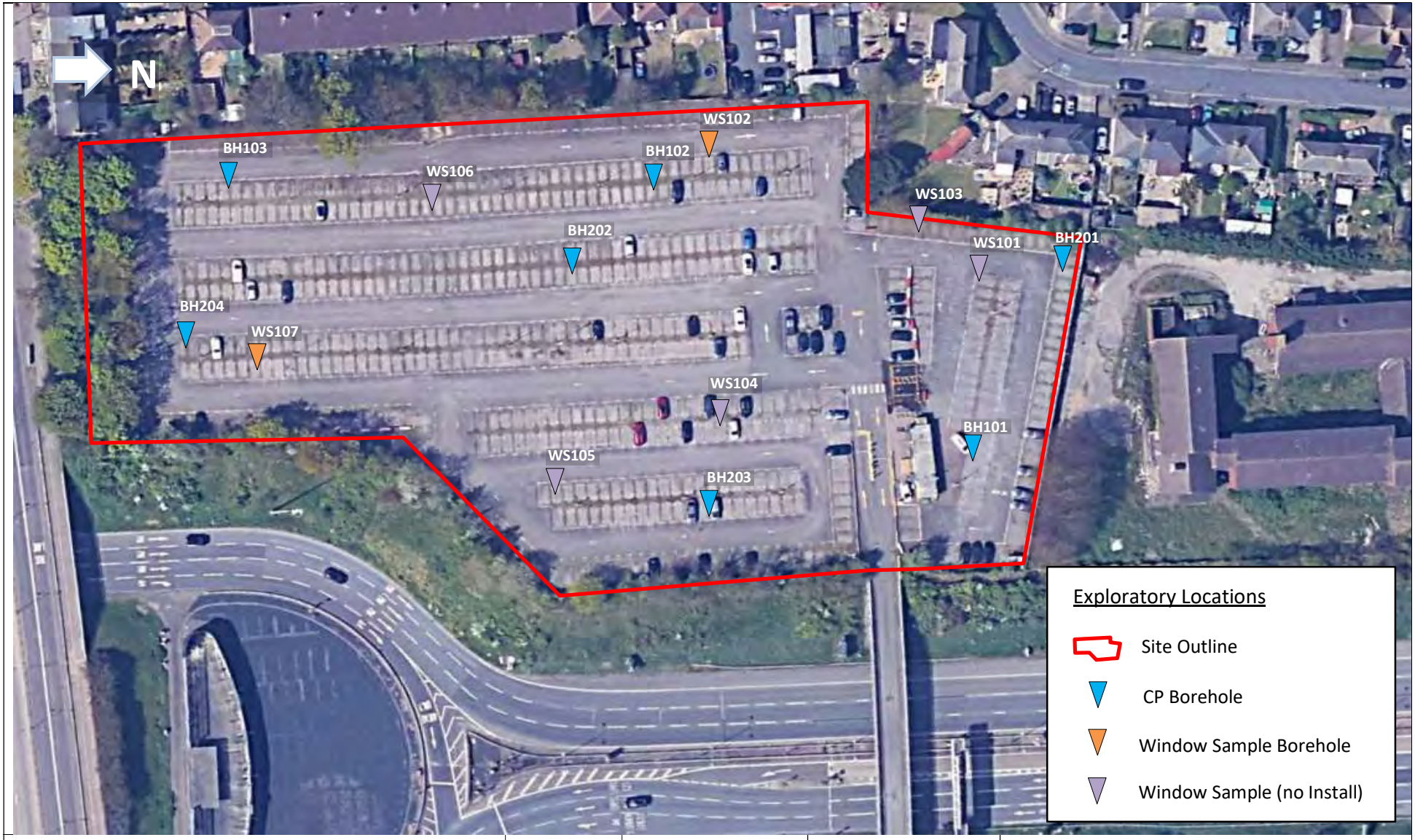
You can find more information on archaeology and planning in Greater London on our website. This response relates solely to archaeological considerations.

Yours sincerely

Sandy Kidd
Archaeology Adviser
Greater London Archaeological Advisory Service
London and South East Region

Appendix 2

NCP Flightpath Heathrow. Phase II Geo-Environmental Site Assessment with Supplementary Groundwater Investigation (TRC November 2021



CLIENT:	DRAWN BY:	PROJECT NO.:	DATE:	ADDRESS:
BRIDGE UK PROPERTIES 5, LP	CM	460336.0001.0000	NOVEMBER 2021	NCP HEATHROW, WEST DRAYTON UB7 0DU

TRC
20 Red Lion Street
London, WC1R 4PQ
http://www.trccompanies.com/

FIGURE: 3

Photographic Log

Client Name:	Site Location:	Project No.:
Bridge Industrial	NCP Flightpath, Heathrow	460366.0000.0000

Photo No.	Date
1	28/07/2021

Description:
The Site is currently utilised for Airport parking. A small temporary building was located immediately to the north of the access road, in the northern part of the site.

Photo No.	Date
2	28/07/2021

Description:
The Site is accessed via a bridge over the M4 motorway from the east near the Radisson Hotel.

Photographic Log

Client Name:	Site Location:	Project No.:
Bridge Industrial	NCP Flightpath, Heathrow	460366.0000.0000

Photo No.	Date
3	28/07/2021

Description:
View of the central part of the Site, Looking south east. The Site predominantly comprises hard standing asphalt and is used as airport parking.

Photo No.	Date
4	28/07/2021

Description:
View of the southerm part of the Site, Looking south east.

Photographic Log

Client Name:	Site Location:	Project No.:
Bridge Industrial	NCP Flightpath, Heathrow	460366.0000.0000

Photo No.	Date
5	28/07/2021

Description:
View of the southern part of the Site, Looking north east.

Photo No.	Date
6	28/07/2021

Description:
View of the central part of the Site, Looking south.

Photographic Log

Client Name:	Site Location:	Project No.:
Bridge Industrial	NCP Flightpath, Heathrow	460366.0000.0000

Photo No.	Date
7	28/07/2021

Description:
Window sample 106

Photo No.	Date
8	28/07/2021

Description:
Window sample 105.

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS101

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4831 E: -0.4541	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				MADE GROUND: Compacted subbase.			
				MADE GROUND: dark brownish grey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete. Cobbles of brick.			
ENV1							
D				Soft dark grey silty CLAY. Rare gravels of flint. Possibly reworked strata. (LANGLEY SILT MEMBER)			
D			1	Firm light greyish brown slightly silty slightly gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (LANGLEY SILT MEMBER)			
D SPT		13					
ENV2				Very dense light brownish grey clayey sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)			
SPT		>50	2				

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS102

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4828 E: -0.4544	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				MADE GROUND: Compacted subbase.				
ENV1				MADE GROUND: dark brownish grey slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete.				
Bulk								
				Soft dark grey silty CLAY. (LANGLEY SILT MEMBER)				
				Soft light greyish brown slightly silty CLAY. (LANGLEY SILT MEMBER)				
			1					
ENV2								
SPT		7		Soft light greyish brown silty slightly sandy CLAY. Sand is fine grained. (LANGLEY SILT MEMBER)				
D								
D				Very dense greyish brown clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)				
			2					
SPT		>50						

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS103

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4830 E: -0.4542	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				MADE GROUND: dark brownish grey slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete.			Very slight seepage of water.
ENV1				Soft greyish brown silty CLAY. (LANGLEY SILT MEMBER)			Slight Hydrocarbon odour.
D							
ENV2			1				
			2				

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS104

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4827 E: -0.4537	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				MADE GROUND: Compacted subbase.			
ENV1				MADE GROUND: dark brownish grey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete.			...Perched water encountered at 0.3m
D			1	Soft grey silty CLAY. (LANGLEY SILT MEMBER)			
ENV2				Soft greyish brown silty slightly gravelly CLAY. Gravel is sub-angular to sub-rounded, fine grained. Gravel consists of flint. Rare gravels. (LANGLEY SILT MEMBER)			
D		6					
D				Very dense greyish brown clayey sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)			
SPT			2				
SPT		>50					

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS105

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4825 E: -0.4536	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				MADE GROUND: Compacted subbase.			
ENV				MADE GROUND: dark brownish grey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick, concrete and flint. Cobbles of brick and concrete			
D				Soft light grey silty CLAY. (LANGLEY SILT MEMBER)			
ENV			1	Very soft light greyish brown slightly silty CLAY. Rare fine gravels of flint. (LANGLEY SILT MEMBER)			
D							
SPT		5					
D			2	Dense, becoming very dense light greyish brown slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to medium grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)			
SPT		45					
SPT		>50	3				

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS106

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4821 E: -0.4545	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	COMMENTS
				MADE GROUND: Compacted subbase.			
				MADE GROUND: dark greyish brown clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick, clinker and concrete. Occasional glass fragments.			
ENV1							
D			1	Very soft light brown slightly silty slightly sandy slightly gravelly CLAY. Sand is fine, Gravel is sub-angular to sub-rounded, fine grained. Gravel consists of flint. (LANGLEY SILT MEMBER)			
SPT		4					
D							
ENV2							
SPT		>50	2	Very dense light brown very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to medium grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)			
Bulk							
SPT		>50	3				

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

WINDOW SAMPLE LOG

WINDOW SAMPLE NO. WS107

Facility/Project Name:	Date Drilling Started:	Date Drilling Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Window Sampling	---	---	5.0	

Window Sample Location:	Personnel	Drilling Equipment:
N: 51.4819 E: -0.4540	Logged By - Colin Morton Driller - Andrew Leek	Dando Terrier

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				MADE GROUND: Compacted subbase.				
				MADE GROUND: dark brownish grey slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete.				
ENV1								
				Very soft light greyish brown silty slightly sandy slightly gravelly CLAY. Sand is fine, Gravel is sub-angular to sub-rounded, fine grained. Gravel consists of flint. (LANGLEY SILT MEMBER)				
			1					
ENV2								
D		4						
SPT								
				Very dense, dense in parts, light greyish brown very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to medium grained. Gravel consists of chert and flint. Band of stiff very sandy clay at 3.4m. (TAPLOW GRAVEL MEMBER)				
			2					
SPT		>50						
Bulk								
			3					
SPT		26						
SPT		>50						

WINDOW SAMPLE LOG (METRIC) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

BOREHOLE LOG

BH NO. BH101

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Carpark Heathrow	2/8/21	2/8/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Cable Percussive	---	---	10.5	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.483 E: -0.453	Logged By - Colin Morton Driller - Andrew Leek	Dando 4000

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				MADE GROUND: Compacted subbase.				
Bulk ENV1				MADE GROUND: Dark brownish grey slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of bituminous material, brick and concrete.				
Bulk				Soft grey very silty CLAY. (LANGLEY SILT MEMBER)				
Bulk			1					
U100								
Bulk ENV2				Very dense light greyish brown very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)				... Driller added water from 1.6m, masking potential groundwater strikes.
			2					
CPT Bulk		62						
			3					
			4					
Bulk CPT		58						

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

BOREHOLE LOG

BH NO. BH101

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
U100 Bulk				Firm greyish brown slightly silty CLAY. (WEATHERED LONDON CLAY FORMATION)				
D				Firm becoming stiff dark grey slightly silty CLAY. Occasional blueish laminations. (LONDON CLAY FORMATION)				
D			6					
SPT		19						
			7					
U100								
D			8					
D			9					
SPT		24						
			10					
U100								
			11					

BOREHOLE LOG

BH NO. BH102

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Carpark Heathrow	29/7/21	29/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Cable Percussive	---	---	10.5	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.483 E: -0.454	Logged By - Colin Morton Driller - Andrew Leek	Dando 4000

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				MADE GROUND: Compacted subbase.				
Bulk ENV1				MADE GROUND: greyish brown slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of bituminous material, brick and concrete.				
D Bulk			1	Soft grey very silty CLAY. (LANGLEY SILT MEMBER)				
D D SPT Bulk		6		Soft light greyish brown silty CLAY. (LANGLEY SILT MEMBER)				
CPT Bulk		>50	2	Very dense light greyish brown very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)				... Driller added water from 1.8m, masking potential groundwater strikes.
CPT Bulk		>50	3					
CPT		11	4					
Bulk				Firm greyish brown slightly silty CLAY. (WEATHERED LONDON CLAY FORMATION)				
Bulk				Firm becoming stiff dark grey slightly silty CLAY. Occasional blueish laminations. (LONDON CLAY FORMATION)				

METRIC BOREHOLE LOG (NON-U.S) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

BOREHOLE LOG

BH NO. BH102

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
D SPT		13	6					
U100								
D			7					
D SPT		22	8					
U100			9					
D								
D SPT		28	10					
			11					

BOREHOLE LOG

BH NO. BH103

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Carpark Heathrow	30/7/21	30/7/21	453101.0000.0000

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
CC Ground Investigations	Cable Percussive	---	---	10.5	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.482 E: -0.455	Logged By - Colin Morton Driller - Andrew Leek	Dando 4000

Civil Town/City/or Village:	County:	Water Level Observations:
West Drayton	UB7 ODU	While Drilling: Date/Time ▽ Depth (m bgs) 6.1 After Drilling: Date/Time ▼ Depth (m bgs) 3.1

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
				MADE GROUND: Compacted subbase.				
Bulk ENV1				MADE GROUND: Dark brownish grey slightly clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of brick and concrete.				
Bulk				Soft grey very silty CLAY. (LANGLEY SILT MEMBER)				
			1					
Bulk ENV2								
D				Soft light greyish brown silty CLAY. (LANGLEY SILT MEMBER)				
SPT/ Bulk		59		Very dense light greyish brown very sandy GRAVEL. Sand is fine to coarse, Gravel is sub-angular to sub-rounded, fine to coarse grained. Gravel consists of chert and flint. (TAPLOW GRAVEL MEMBER)				
			2					
CPT Bulk		86						
			3	▼				... Groundwater level after 30mins.
Bulk								
			4					
Bulk CPT		52						

METRIC BOREHOLE LOG (NON-U.S) NCP CARPARK, HEATHROW LOGS.GPJ 453101.0000.0000 3/12/21

Signature:	Firm: TRC COMPANIES 20 Red Lion Street, London WC1R 4PS	Fax

BOREHOLE LOG

BH NO. BH103

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
			6					
CPT Bulk		18		Firm greyish brown slightly silty CLAY. (WEATHERED LONDON CLAY FORMATION)				... Groundwater encountered at 6.1m
Bulk								
U100			7	Firm becoming stiff dark grey slightly silty CLAY. Occasional blueish laminations. (LONDON CLAY FORMATION)				
D								
D								
SPT		21						
			8					
			9					
U100								
D								
D			10					
SPT		25						
			11					

BOREHOLE LOG

BH NO. BH201

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Heathrow Supp GW monitoring	15-11-21	15-11-21	460336.0001

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
Direct Drilling	Cable Percussive	---	---	6.0	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.483 E: -0.454	Logged By - Nyemh Johnson Driller - Derick Watts	

Civil Town/City/or Village:	County:	Water Level Observations:
Sipson	West Drayton UB7 0DU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
ENV1			0	MADE GROUND: Compacted hardcore. Consists of dark brown brick, flint and Type 1 Gravel.				
SPT		12	1	MADE GROUND: dark brown silty gravelly CLAY. Gravel is angular to rounded, fine to coarse grained. Gravel consists of brick, flint and sandstone. Frequent gravel from 1.4m.				
ENV2			2	Very dense light brownish orange slightly silty very gravelly SAND. Sand is fine to coarse, Gravel is angular to rounded, fine to coarse grained. Gravel consists of flint, mudstone and sandstone. (TAPLOW GRAVEL MEMBER)				
SPT		50						
SPT		50	3					
SPT		18	4	Firm light grey silty CLAY. (LONDON CLAY FORMATION)				
SPT		15	5					
			6					

METRIC BOREHOLE LOG (NON-U.S) NCP CARPARK GW MONITORING.GPJ 460336.0001 2-12-21

Signature:	Firm: TRC Companies
	Fax

BOREHOLE LOG

BH NO. BH202

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Heathrow Supp GW monitoring	15-11-21	15-11-21	460336.0001

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
Direct Drilling	Cable Percussive	---	---	6.0	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.482 E: -0.454	Logged By - Nyemh Johnson Driller - Derick Watts	

Civil Town/City/or Village:	County:	Water Level Observations:
Sipson	West Drayton UB7 0DU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
ENV1			0	MADE GROUND: Compacted hardcore. Consists of dark brown brick, flint and Type 1 Gravel.				
				Firm dark grey slightly silty CLAY. (LANGLEY SILT MEMBER)				
SPT		13	1	Firm light brownish orange silty CLAY. (LANGLEY SILT MEMBER)				
SPT		50	2	Very dense light brownish orange slightly silty sandy GRAVEL. Sand is fine to coarse, Gravel is angular to rounded, fine to coarse grained. Gravel consists of flint and sandstone. (TAPLOW GRAVEL MEMBER)				
SPT		50	3					
SPT		50	4					
SPT		50	5					
ENV2				Firm light brownish orange silty CLAY. (LONDON CLAY FORMATION)				
			6					

METRIC BOREHOLE LOG (NON-US) NCP CARPARK GW MONITORING.GPJ 460336.0001 2-12-21

Signature:	Firm: TRC Companies
	Fax

BOREHOLE LOG

BH NO. BH203

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Heathrow Supp GW monitoring	15-11-21	15-11-21	460336.0001

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
Direct Drilling	Cable Percussive	---	---	6.0	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.483 E: -0.453	Logged By - Nyemh Johnson Driller - Derick Watts	

Civil Town/City/or Village:	County:	Water Level Observations:
Sipson	West Drayton UB7 0DU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
ENV1			0	MADE GROUND: Compacted hardcore. Consists of dark brown brick, flint and Type 1 Gravel.				
				MADE GROUND: dark brown clayey very sandy GRAVEL. Sand is fine to coarse, Gravel is angular to rounded, fine to coarse grained. Gravel consists of brick.				
			1	MADE GROUND: light brownish orange silty slightly gravelly CLAY. Gravel is angular to rounded, fine to coarse grained. Gravel consists of brick and flint.				
			2					
ENV2			3					
			4	Firm light brownish orange silty CLAY. (LONDON CLAY FORMATION)				
SPT		11		Firm light grey silty CLAY. (LONDON CLAY FORMATION)				
			5					
SPT		13						
			6					

METRIC BOREHOLE LOG (NON-U.S) NCP CARPARK GW MONITORING.GPJ 460336.0001 2-12-21

Signature:	Firm: TRC Companies
	Fax

BOREHOLE LOG

BH NO. BH204

Facility/Project Name:	Date Borehole Started:	Date Borehole Completed:	Project Number:
NCP Heathrow Supp GW monitoring	15-11-21	15-11-21	460336.0001

Drilling Firm:	Drilling Method:	Surface Elev. (m)	TOC Elevation (m)	Total Depth (m bgs)	Borehole Dia. (cm)
Direct Drilling	Cable Percussive	---	---	6.0	

Boring Location Plant Coordinates:	Personnel	Drilling Equipment:
N: 51.482 E: -0.454	Logged By - Nyemh Johnson Driller - Derick Watts	

Civil Town/City/or Village:	County:	Water Level Observations:
Sipson	West Drayton UB7 0DU	While Drilling: Date/Time Depth (m bgs) After Drilling: Date/Time Depth (m bgs)

SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
ENV1			0	MADE GROUND: Compacted hardcore. Consists of dark brown brick, flint and Type 1 Gravel.				
				MADE GROUND: light brown silty sandy GRAVEL. Sand is fine to coarse, Gravel is angular to rounded, fine to coarse grained. Gravel consists of brick.				
			1	MADE GROUND: light brownish orange silty CLAY.Frequent organic matter				
SPT		1						
			2					
SPT		1						
				Soft dark greyish black silty CLAY. (LANGLEY SILT MEMBER)				
			3	Stiff light greenish orange silty CLAY. (LANGLEY SILT MEMBER)				
SPT		30		Very dense light brownish orange silty sandy GRAVEL. Sand is fine to coarse, Gravel is angular to rounded, fine to coarse grained. Gravel consists of flint and sandstone. (TAPLOW GRAVEL MEMBER)				
ENV2			4					
SPT		47						
				Firm light brownish orange silty CLAY. (LONDON CLAY FORMATION)				
			5	Firm light grey silty CLAY. (LONDON CLAY FORMATION)				
SPT		17						
			6					

METRIC BOREHOLE LOG (NON-U.S) NCP CARPARK GW MONITORING.GPJ 460336.0001 2-12-21

Signature:	Firm: TRC Companies
	Fax

Appendix 3

Plan showing utilities and plan showing interpretation of TRC Geotechnical Investigations (Extract from Hydrock Phase 1 Desk Study Report July 2022)

KEY

TOPOGRAPHICAL KEY

SURVEY STATION 5
BANKING (TOP / BOTTOM)
HEDGE SPREADS
WOODLAND CANOPY
ARROW ON STEPS / RAMPS INDICATES DIRECTION UPWARDS
TREES — SPREAD & GIRTH SHOWN TO SCALE
GATE
KERB CHANNEL
ROAD UNKERBED
FENCE
WALL
BUILDING
OPEN SIDED BUILDING
OVERHANG / CANOPY
GLASSHOUSE
CONTOUR 25.50
SPOT LEVEL + 127.13 SONAR LEVEL O 127.13
BORE HOLE BH
TRIAL HOLE TH
FOOTPATH
CHANGE IN SURFACE

GENERAL

Av.	AVERAGE
COW	CABLE ON WALL
CW	COMBINED WATER
DIS	DISUSED
DK	DROP KERB
EML	ELECTROMAGNETIC LOCATOR
EOT	END OF TRACE
FO	FIBRE OPTIC
FP	FOOTPATH
FW	FOUL WATER
GP	GATE POST
GPR	GROUND PENETRATING RADAR
HB	HARD BED
H/P	HIGH PRESSURE
HV	HIGH VOLTAGE
KV	KILO VOLT
I/P	INTERMEDIATE PRESSURE
L/P	LOW PRESSURE
LV	LOW VOLTAGE
M/P	MEDIUM PRESSURE
NDI	NO DEPTH INFORMATION
NFI	NO FURTHER INFORMATION
NDV	NO DUCTS VISIBLE
NPV	NO PIPES VISIBLE
OSBM	ORDNANCE SURVEY BENCHMARK
POW	PIPE ON WALL
P.BOX	POST BOX
RED	REDUNDANT SERVICE
RW	RETAINING WALL
SB	SOFT BED
SNP	STREET NAME PLATE
SW	SURFACE WATER
TAC	TACTILE PAVING
TOW	TOP OF WALL
TW	TRADE EFFLUENT WATER
UTL	UNABLE TO LOCATE
UTR	UNABLE TO RAISE
UTS	UNABLE TO SURVEY

APPARATUS

ACU	AIR CONDITIONING UNIT
AV	AIR VALVE
BB	BELISHA BEACON
BO	BOLLARD
BOL	BOLLARD LIGHT
BS	BUS STOP
CATV	CABLE TELEVISION
CB	CONTROL BOX
CCB	CROSSING CONTROL BUTTON
CP	CATCH PIT
CR	CABLE RISER
DCH	DRAINAGE CHANNEL
EB	ELECTRIC CONTROL BOX
EP	ELECTRIC POLE
ER	EARTH ROD
FD	FILTER DRAIN
FFP	FUEL TANK FILL POINT
FH	FIRE HYDRANT
GR	GAS RISER
GV	GAS VALVE
GY	GULLY
IC	INSPECTION COVER
INT	INTERCEPTOR
IT	INLET
KO	KERB OUTLET
LD	LOOP DETECTOR
LH	LAMP HOLE
LP	LAMP POST
MH	MANHOLE
MK	MARKER POST / PLATE
MT	METER
MW	MONITORING WELL
OL	OUTLET
OU	OUTFALL
PO	POST
PTG	PIPE TO GROUND
PTS	PIPE TO SURFACE
PU	PUMP
RE	RODDING EYE
RS	ROAD SIGN
RM	RISING MAIN
RWP	RAIN WATER PIPE
SC	STOP COCK
SO	SOAKAWAY
SP	SOIL PIPE
ST	STAY CABLE
SV	STOP / SLUICE VALVE
SVP	SOIL VENT PIPE
TCB	TELEPHONE CALL BOX
TEL	TELECOM INSPECTION COVER
TL	TRAFFIC LIGHT
TLC	TRAFFIC LIGHT COVER
TM	TICKET MACHINE
TP	TELECOM POLE
VP	VENT PIPE
WM	WATER METER
WO	WASH OUT
WR	WATER RISER
WT	WATER TAP
WW	WET WELL

DEPTHS

d	ELECTRONICALLY DERIVED
Pd	PASSIVELY DERIVED
Bd	BASE DEPTH
Cd	DEPTH TO CROWN
Id	DEPTH TO INVERT
Sd	DEPTH TO SOFFIT
STd	DEPTH TO SILT

PIPE MATERIALS

AC	ASBESTOS CEMENT
ALK	ALKATHENE
BK	BRICK
CI	CAST IRON
CO	CONCRETE
DI	DUCTILE IRON
HDPE	HIGH DENSITY PE
MDPE	MEDIUM DENSITY PE
PE	POLYETHYLENE
PF	PITCH FIBRE
PP	POLYPROPYLENE
PVC	POLYVINYL CHLORIDE
PVC-U	ULTRA RIB (PVC)
SI	SPUN IRON
ST	STEEL
VC	VITRIFIED CLAY

FENCES

B/W	BARBED WIRE FENCE
C/B	CLOSED BOARDED FENCE
CPL	CONCRETE PANEL FENCE
C/I	CORRUGATED IRON FENCE
CNP	CHESTNUT PAILING
C/L	CHAIN LINK FENCE
I/R	IRON RAILINGS
L/L	LARCH LAP FENCE
P/R	POST AND RAIL FENCE
P/W	POST AND WIRE FENCE
W/M	WIRE MESH FENCE

LEVELS

BD	BACKDROP LEVEL
BL	BASE LEVEL
CL	COVER LEVEL
CWL	CROWN LEVEL
DPC	DAMP PROOF COURSE
FL	FLOOR LEVEL
IL	INVERT LEVEL
PT	P TRAP LEVEL
RL	ROOF LEVEL
SL	SILT LEVEL
SOF	SOFFIT LEVEL
THL	THRESHOLD LEVEL
WL	WATER LEVEL

LINESTYLE

INTERNAL METER (MT)
POT ENDED SERVICE
SEWER CAPPED RUN
SURVEY ABANDONED
INTERNAL VALVE
UNKNOWN UNDERGROUND ANOMALY
UNDERGROUND CHAMBERS
VERIFICATION TRIAL HOLE/EXCAVATION
ABOVE GROUND (AG)
ASSUMED ROUTE QB4(AR)
EMPTY DUCTS (E)
OVERHEAD (OH)
BACK DROP
P TRAP
UTILITY CROSSOVER
SURVEY BOUNDARY
VERBAL INFORMATION QB4(VI)
RECORD INFORMATION QB4(R)
REDUNDANT SERVICE
RISING MAIN
CCTV SECTION 4 AND 5 FAULTS ARE SHOWN IN RED

SERVICE TYPE

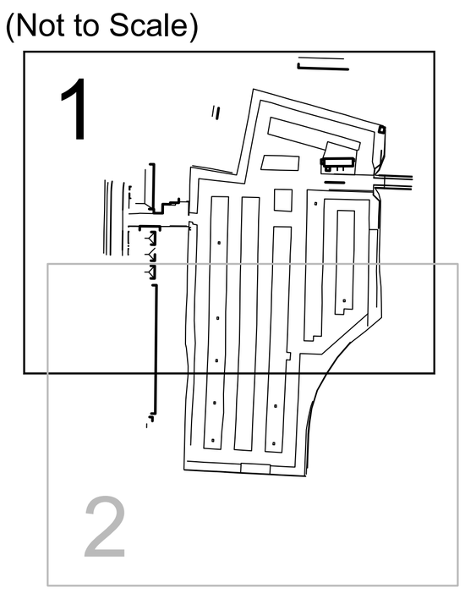
CATV / DATA
ELECTRICITY (HV)
ELECTRICITY (LV)
FUEL
GAS
HEATING
OVERHEAD ELECTRIC
OVERHEAD TELECOM
COMBINED SEWER
FOUL SEWER
SURFACE SEWER
TRADE EFFLUENT
UNIDENTIFIED SEWER
TELECOM
UNKNOWN SERVICE
WATER
SERVICES SURVEY WARNING

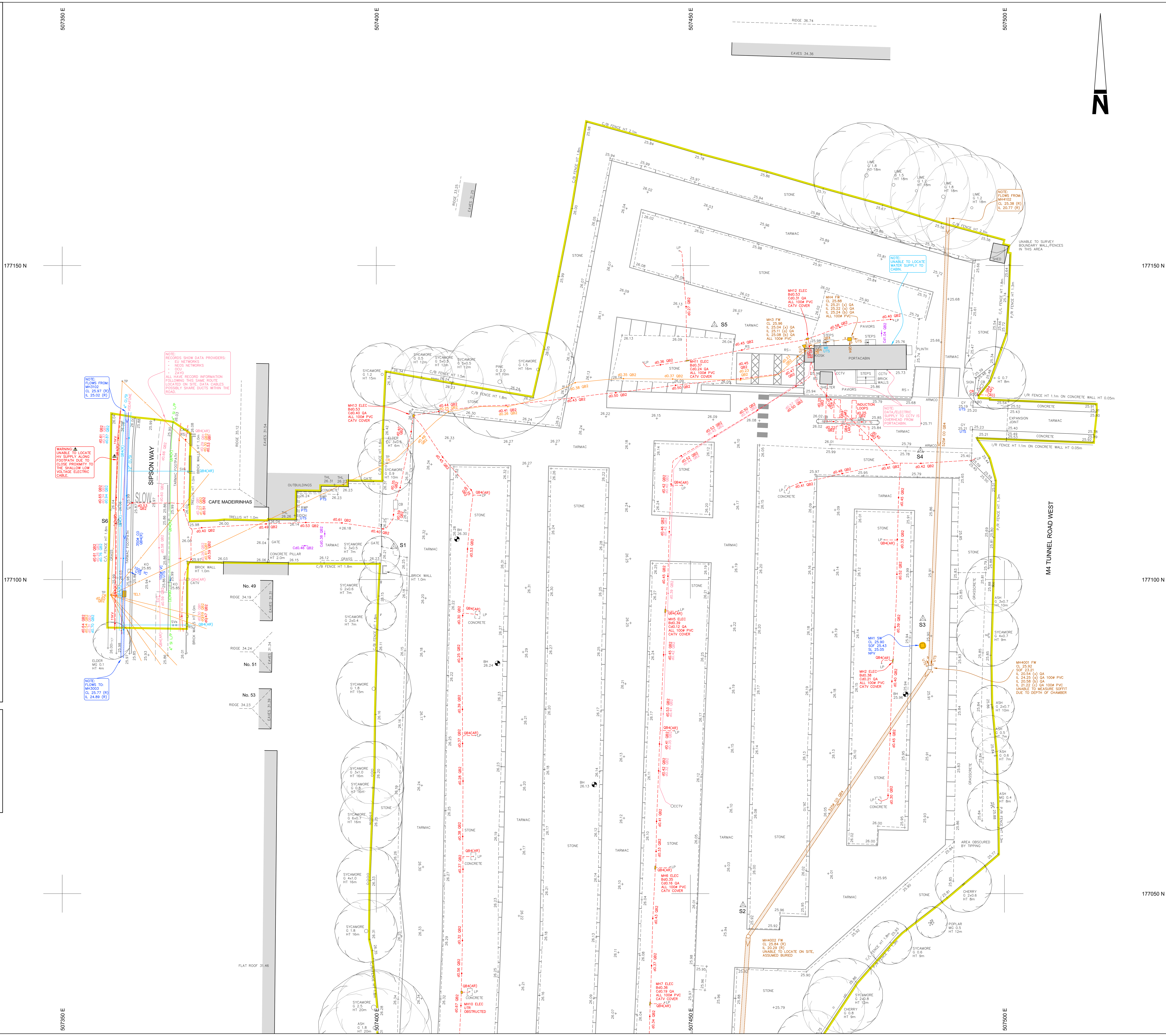
CAUTIONARY NOTES

1. EML techniques have been used in the detection of underground utilities as outlined in Table 2 of PAS 128:2022, the results are not infallible and trial excavations must be carried out in order to confirm identification, position and in particular depth of the utility.
2. GPR techniques has been used in the detection of non-metallic utilities as outlined in Table 2 of PAS 128:2022. The interpretation of these results is not infallible and success will depend on a number of factors including soil type, ground water levels and surface conditions, hence trial excavations must be carried out in order to confirm identification, position and in particular depth of the utility.
3. Depths derived via EML are taken to the centre of the conductor (cable, metallic pipe) and those derived via GPR are usually to the crown of the utility unless otherwise indicated.
4. Where cables cannot be detected individually an average depth has been obtained and trial excavations are recommended to confirm number and depths of cables banded together.
5. 'Pot-ended' cables are often difficult to detect and although we have made all reasonable efforts to locate or transpose this information from records, we cannot guarantee that all 'pot-ended' cables have been located.
6. Fibre optic cables are often difficult to detect, and commonly access chambers can be locked and thereby made inaccessible by the utility provider. All reasonable efforts have been made to locate these ducts using GPR. Cables not located have been transposed from records.
7. Within close proximity of electric substations and similar structures results using EML may become distorted. All reasonable efforts have been made to verify our results using GPR wherever conditions permitted.
8. Underneath overhead power lines results using EML may become distorted. All reasonable efforts have been made to verify our results using GPR wherever conditions permitted.
9. Drainage information has been obtained without man entry into the chamber.
10. Wherever possible we have attempted to locate the route of the sewer. Issues such as blockages, surcharging, flooding, sedimentation, sewer collapse, root ingress, excessive depth, obstructions or heavy traffic flow may have affected our ability to obtain meaningful results. In these cases recommendations have been made for further survey or maintenance work.
11. Pipe / duct sizes have been recorded from surface inspection or taken from record information. Pipe sizes have been recorded in millimetres and depths in metres, except in instances where sizes are indicated in imperial units on the record information.
12. Water and Gas utilities to individual properties are often of a size that cannot be detected using EML or GPR investigation, whenever possible the route has been added from surface evidence (pipe risers, valves, etc), but this should be viewed as a guide only.
13. All utilities detected by MK Surveys should be considered live unless confirmed otherwise by client or service provider.
14. MK Surveys cannot confirm when utilities are redundant unless there is visual or record evidence to indicate this. In addition MK Surveys cannot guarantee being able to detect all redundant utilities.
15. Wherever available the results of our investigations have been cross referenced with record information. If a utility shown on the records cannot be detected on site, the information has been added to the drawing and indicated as QB4 (R). However it should be noted that the completeness and accuracy of the records cannot be guaranteed.
16. The utility information has been obtained from non-intrusive survey techniques; it always remains possible that there are additional utilities within the survey boundary that we have not been able to detect. We recommend that care is taken on site and that all utility records are used in conjunction with this survey.
17. The responsibility for avoiding damage to assets and utilities on site shall be that of the persons proposing to excavate within the surveyed area, who shall be liable to the asset owner and any third party who may be affected in any way for any loss or damage.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING.

Sheet Layout: (Not to Scale)





Notes :

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR 0.99974 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.
3. THIS SURVEY SHOULD ALWAYS BE READ IN CONJUNCTION WITH THE DESKTOP UTILITY REPORT, THAT WAS CARRIED OUT AS A PREREQUISITE TO THIS DETECTION SURVEY.

Coordinate Table

Station	Description	Easting	Northing	Level
S1	Road Nail	507402.775	177105.247	26.204
S2	Road Nail	507458.371	177048.166	25.965
S3	Road Nail	507487.016	177093.775	25.942
S4	Road Nail	507486.639	177120.541	25.726
S5	Road Nail	507453.820	177140.543	26.067
S6	Road Nail	507358.951	177109.134	26.049

Equipment Information

Equipment	Manufacturer	Model	Serial Number	MKS REF	Date of Calibration
EML Tx Transmitter	SPX Radiodetection	RD8100	10/TX-3-15652	RD4	02/10/2024
EML Rx Receiver	SPX Radiodetection	RD8200	10/82-GB-628	RD27	02/10/2024
GPR	IDS Georadar	OPERA DUO	SN 010-17-000374	GPR10	20/12/2024
GPS	Leica Geosystems	CS10/GS14	2885708	GNSS 23	N/A

DETECTION SURVEY REPORT

GENERAL
This survey was carried out in accordance with PAS 128:2022 (Publicly Available Specification from BSI) by an experienced surveyor qualified to a minimum of QCF Level 3. After a pre-survey consultation with the client it was agreed to carry out the detection survey using methodology M1 as per Table 2 of the PAS 128:2022. The survey boundary has been shown on the drawing; please see linestyle section of the key for reference.

DESKTOP UTILITY REPORT
Prior to the survey commencing record information was gathered and compiled in a separate desktop utility report. This report should be read in conjunction with the information contained in this utility detection survey. Record information was at the time of the survey the most recent available in accordance with the requirements of the PAS 128:2022. For a full list of the providers searched, records received and the dates the information was obtained, please refer to the attachments page of the desktop utility report.

DETECTION SURVEY

DRAINAGE
Drainage was lifted with pipe sizes and invert levels recorded from surface level, no allowance has been made for confined space entry unless otherwise stated. Wherever possible the chamber sizes have been recorded and positioned on the drawing. All connections from gullies, external rainwater pipes and external soil stacks have been proven wherever possible into manholes and sewer runs by radio sonde location and/or GPR. Where a saddle connection is present the position is assumed only until proven to QB2 or above. In instances where other detection methods were unsuccessful connections between manholes have been assumed to be straight and labelled as QB4. All drainage should be cross checked in critical areas by CCTV survey or verification survey type A. Unable to locate MH4002, assumed to be buried or removed.

WATER
Water utilities have been located using EML methodologies. Where water utilities were unable to be located, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

GAS
Gas utilities were unable to be located using EML or GPR methodologies. Record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

ELECTRICITY
Electric cables within the survey area have been located using EML methods with electronically derived depths recorded.Where GPR results confirmed EML findings the quality level has been increased to QB1. Where electric cables were unable to be detected, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

TELECOM
Telecom ducts have been located using EML methodologies to a quality level of QB2.Where GPR confirms position the quality level has been improved to QB1. Where telecom ducts were unable to be located, record information has been added to the drawing to a quality level of QB4. Due to laws protecting British Telecom apparatus all ducts have been located using remote detection techniques only and compared with record information. Chamber sizes have been recorded using GPR techniques wherever possible. For further information regarding BT apparatus please contact Openreach directly.

CATV/DATA
CATV and data ducts have been located using EML methodologies to a quality level of QB2. Where GPR confirms position the quality level has been improved to QB1. Where CATV and data ducts were unable to be located, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

UNKNOWNS
Some unknown targets identified on the drawing using GPR are classified as “non-linear targets”. These are not consistent with what we expect to see when identifying a buried utility, and appear on the drawing as single targets with depths (i.e. not linking two or more depth readings). This does not mean they are not utilities, we are just unable to positively identify them as a utility. We would strongly recommend that further verification surveys (PAS 128:2022 survey type A) are carried out to identify these targets in critical areas.

SEE CAUTIONARY NOTES WITHIN THE UTILITY KEY

PAS 128:2022 Quality Level Guide

Quality Level	Description	Accuracy
QB4 (QL-B4)	A utility is expected to exist but cannot be detected - (AR), (R), (VI)	Undefined
QB3 (QL-B3) QB3P (QL-B3P)	Horizontal location only using one geophysical technique. No depth information - NDI.	+/- 500mm Horizontal Undefined Vertical
QB2 (QL-B2) QB2P (QL-B2P)	Horizontal and vertical location only using one geophysical technique.	+/- 250mm or +/- 40% of depth whichever is greater
QB1 (QL-B1) QB1P (QB-1P)	Horizontal and vertical location only using two geophysical techniques.	+/- 150mm or +/- 15% of depth whichever is greater
QA (QL-A)	Service verified in an open excavation, inside an inspection chamber / draw pit, or at the point the service enters / exits the ground.	+/- 50mm Horizontal +/- 50mm Vertical

Desktop Utility Records

Utility Type	Provider Details	Date Acquired
Drainage	Thames Water	29/11/2024
Water	Affinity Water	02/12/2024
Gas	Cadent	02/12/2024
Electricity	Scottish & Southern Electricity Networks	02/12/2024
Telecom	Openreach	02/12/2024
CATV	Virgin Media	02/12/2024
Communications	EU Networks	02/12/2024
Communications	Neos	02/12/2024
Communications	OCU	04/12/2024
Communications	Vodafone Ltd	03/12/2024
Communications	Zayo	02/12/2024
Tunnels & Pipelines	LinesearchbeforeUdig	02/12/2024

Survey Information

Fieldwork dates	19/12	20/12							
Weather conditions									
Ground conditions	Wet	Wet							

Revision	Description	Surv. by	Check. by	Appr. by	Date

0m 2 4 6 8 10 12 14 16 18 20 22

Topographical and PAS 128:2022 Utility Survey

Lysander

Bath Road
West Drayton
Heathrow
Greater London

Scale:	Sheet Size:	Sheet Number:	Date:	
1:200	A0	1	January 2025	
Project Number:	Rev:	Surveyed by:	Checked by:	Approved by:
35225	-	NL/MK	AG/AC	CP/NF

mksurveys

www.mksurveys.com www.surveys4bim.co.uk
Head Office: Milton Keynes t: 01908 565561 e: mail@mksurveys.co.uk

KEY

TOPOGRAPHICAL KEY

SURVEY STATION — 5
FENCE
WALL
BANKING — TOP / BOTTOM
BUILDING
HEDGE SPREADS
OPEN SIDED BUILDING
WOODLAND CANOPY
OVERHANG / CANOPY
ARROW ON STEPS / RAMPS INDICATES DIRECTION UPWARDS
GLASSHOUSE
CONTOUR — 25.50
TREES — SPREAD & GIRTH SHOWN TO SCALE
SPOT LEVEL + 127.13
SONAR LEVEL O 127.13
BORE HOLE — BH
GATE
TRIAL HOLE — TH
KERB CHANNEL
FOOTPATH
ROAD UNKERBED
CHANGE IN SURFACE

GENERAL

Av.	AVERAGE
COW	CABLE ON WALL
CW	COMBINED WATER
DIS	DISUSED
DK	DROP KERB
EML	ELECTROMAGNETIC LOCATOR
EOT	END OF TRACE
FO	FIBRE OPTIC
FP	FOOTPATH
FW	FOUL WATER
GP	GATE POST
GPR	GROUND PENETRATING RADAR
HB	HARD BED
H/P	HIGH PRESSURE
HV	HIGH VOLTAGE
KV	KILO VOLT
I/P	INTERMEDIATE PRESSURE
L/P	LOW PRESSURE
LV	LOW VOLTAGE
M/P	MEDIUM PRESSURE
NDI	NO DEPTH INFORMATION
NFI	NO FURTHER INFORMATION
NDV	NO DUCTS VISIBLE
NPV	NO PIPES VISIBLE
OSBM	ORDNANCE SURVEY BENCHMARK
POW	PIPE ON WALL
P.BOX	POST BOX
RED	REDUNDANT SERVICE
RW	RETAINING WALL
SB	SOFT BED
SNP	STREET NAME PLATE
SW	SURFACE WATER
TAC	TACTILE PAVING
TOW	TOP OF WALL
TW	TRADE EFFLUENT WATER
UTL	UNABLE TO LOCATE
UTR	UNABLE TO RAISE
UTS	UNABLE TO SURVEY

PIPE MATERIALS

AC	ASBESTOS CEMENT
ALK	ALKATHENE
BK	BRICK
CI	CAST IRON
CO	CONCRETE
DI	DUCTILE IRON
HDPE	HIGH DENSITY PE
MDPE	MEDIUM DENSITY PE
PE	POLYETHYLENE
PF	PITCH FIBRE
PP	POLYPROPYLENE
PVC	POLYVINYL CHLORIDE
PVC-U	ULTRA RIB (PVC)
SI	SPUN IRON
ST	STEEL
VC	VITRIFIED CLAY

FENCES

B/W	BARBED WIRE FENCE
C/B	CLOSED BOARDED FENCE
CPL	CONCRETE PANEL FENCE
C/I	CORRUGATED IRON FENCE
CNP	CHESTNUT PAILING
C/L	CHAIN LINK FENCE
I/R	IRON RAILINGS
L/L	LARCH LAP FENCE
P/R	POST AND RAIL FENCE
P/W	POST AND WIRE FENCE
W/M	WIRE MESH FENCE

LEVELS

BD	BACKDROP LEVEL
BL	BASE LEVEL
CL	COVER LEVEL
CWL	CROWN LEVEL
DPC	DAMP PROOF COURSE
FL	FLOOR LEVEL
IL	INVERT LEVEL
PT	P TRAP LEVEL
RL	ROOF LEVEL
SL	SILT LEVEL
SOF	SOFFIT LEVEL
THL	THRESHOLD LEVEL
WL	WATER LEVEL

APPARATUS

ACU	AIR CONDITIONING UNIT
AV	AIR VALVE
BB	BELISHA BEACON
BO	BOLLARD
BOL	BOLLARD LIGHT
BS	BUS STOP
CATV	CABLE TELEVISION
CB	CONTROL BOX
CCB	CROSSING CONTROL BUTTON
CP	CATCH PIT
CR	CABLE RISER
DCH	DRAINAGE CHANNEL
EB	ELECTRIC CONTROL BOX
EP	ELECTRIC POLE
ER	EARTH ROD
FD	FILTER DRAIN
FFP	FUEL TANK FILL POINT
FH	FIRE HYDRANT
GR	GAS RISER
GV	GAS VALVE
GY	GULLY
IC	INSPECTION COVER
INT	INTERCEPTOR
IT	INLET
KO	KERB OUTLET
LD	LOOP DETECTOR
LH	LAMP HOLE
LP	LAMP POST
MH	MANHOLE
MK	MARKER POST / PLATE
MT	METER
MW	MONITORING WELL
OL	OUTLET
OU	OUTFALL
PO	POST
PTG	PIPE TO GROUND
PTS	PIPE TO SURFACE
PU	PUMP
RE	RODDING EYE
RS	ROAD SIGN
RM	RISING MAIN
RWP	RAIN WATER PIPE
SC	STOP COCK
SO	SOAKAWAY
SP	SOIL PIPE
ST	STAY CABLE
SV	STOP / SLUICE VALVE
SVP	SOIL VENT PIPE
TCB	TELEPHONE CALL BOX
TEL	TELECOM INSPECTION COVER
TL	TRAFFIC LIGHT
TLC	TRAFFIC LIGHT COVER
TM	TICKET MACHINE
TP	TELECOM POLE
VP	VENT PIPE
WM	WATER METER
WO	WASH OUT
WR	WATER RISER
WT	WATER TAP
WW	WET WELL

LINESTYLE

INTERNAL METER — (MT)
POT ENDED SERVICE
SEWER CAPPED RUN
SURVEY ABANDONED
INTERNAL VALVE
UNKNOWN UNDERGROUND ANOMALY
UNDERGROUND CHAMBERS
VERIFICATION TRIAL HOLE/EXCAVATION
ABOVE GROUND — (AG)
ASSUMED ROUTE — QB4(AR)
EMPTY DUCTS — (E)
OVERHEAD — (OH)
BACK DROP
P TRAP
UTILITY CROSSOVER
SURVEY BOUNDARY
VERBAL INFORMATION — QB4(VI)
RECORD INFORMATION — QB4(R)
REDUNDANT SERVICE
RISING MAIN

CCTV SECTION 4 AND 5 FAULTS ARE SHOWN IN RED

SERVICE TYPE

CATV / DATA
ELECTRICITY (HV)
ELECTRICITY (LV)
FUEL
GAS
HEATING
OVERHEAD ELECTRIC
OVERHEAD TELECOM
COMBINED SEWER
FOUL SEWER
SURFACE SEWER
TRADE EFFLUENT
UNIDENTIFIED SEWER
TELECOM
UNKNOWN SERVICE
WATER

SERVICES SURVEY WARNING

DEPTHS

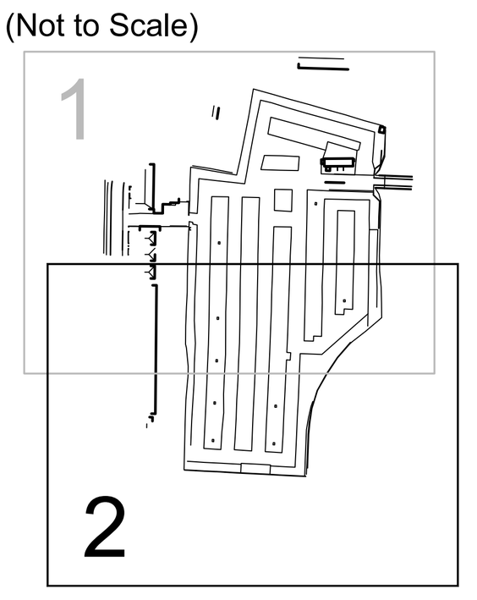
d	ELECTRONICALLY DERIVED
Pd	PASSIVELY DERIVED
Bd	BASE DEPTH
Cd	DEPTH TO CROWN
Id	DEPTH TO INVERT
Sd	DEPTH TO SOFFIT
STd	DEPTH TO SILT

CAUTIONARY NOTES

1. EML techniques have been used in the detection of underground utilities as outlined in Table 2 of PAS 128:2022, the results are not infallible and trial excavations must be carried out in order to confirm identification, position and in particular depth of the utility.
2. GPR techniques has been used in the detection of non-metallic utilities as outlined in Table 2 of PAS 128:2022. The interpretation of these results is not infallible and success will depend on a number of factors including soil type, ground water levels and surface conditions, hence trial excavations must be carried out in order to confirm identification, position and in particular depth of the utility.
3. Depths derived via EML are taken to the centre of the conductor (cable, metallic pipe) and those derived via GPR are usually to the crown of the utility unless otherwise indicated.
4. Where cables cannot be detected individually an average depth has been obtained and trial excavations are recommended to confirm number and depths of cables banded together.
5. 'Pot-ended' cables are often difficult to detect and although we have made all reasonable efforts to locate or transpose this information from records, we cannot guarantee that all 'pot-ended' cables have been located.
6. Fibre optic cables are often difficult to detect, and commonly access chambers can be locked and thereby made inaccessible by the utility provider. All reasonable efforts have been made to locate these ducts using GPR. Cables not located have been transposed from records.
7. Within close proximity of electric substations and similar structures results using EML may become distorted. All reasonable efforts have been made to verify our results using GPR wherever conditions permitted.
8. Underneath overhead power lines results using EML may become distorted. All reasonable efforts have been made to verify our results using GPR wherever conditions permitted.
9. Drainage information has been obtained without man entry into the chamber.
10. Wherever possible we have attempted to locate the route of the sewer. Issues such as blockages, surcharging, flooding, sedimentation, sewer collapse, root ingress, excessive depth, obstructions or heavy traffic flow may have affected our ability to obtain meaningful results. In these cases recommendations have been made for further survey or maintenance work.
11. Pipe / duct sizes have been recorded from surface inspection or taken from record information. Pipe sizes have been recorded in millimetres and depths in metres, except in instances where sizes are indicated in imperial units on the record information.
12. Water and Gas utilities to individual properties are often of a size that cannot be detected using EML or GPR investigation, whenever possible the route has been added from surface evidence (pipe risers, valves, etc), but this should be viewed as a guide only.
13. All utilities detected by MK Surveys should be considered live unless confirmed otherwise by client or service provider.
14. MK Surveys cannot confirm when utilities are redundant unless there is visual or record evidence to indicate this. In addition MK Surveys cannot guarantee being able to detect all redundant utilities.
15. Wherever available the results of our investigations have been cross referenced with record information. If a utility shown on the records cannot be detected on site, the information has been added to the drawing and indicated as QB4 (R). However it should be noted that the completeness and accuracy of the records cannot be guaranteed.
16. The utility information has been obtained from non-intrusive survey techniques; it always remains possible that there are additional utilities within the survey boundary that we have not been able to detect. We recommend that care is taken on site and that all utility records are used in conjunction with this survey.
17. The responsibility for avoiding damage to assets and utilities on site shall be that of the persons proposing to excavate within the surveyed area, who shall be liable to the asset owner and any third party who may be affected in any way for any loss or damage.

ALWAYS EXERCISE CAUTION WHEN EXCAVATING.

Sheet Layout: (Not to Scale)



Notes :

1. GRID AND LEVELS BASED ON ORDNANCE DATUM, DERIVED FROM THE NATIONAL GNSS NETWORK. LOCAL SCALE FACTOR 0.99974 APPLIED.
2. TREE AND HEDGE SPECIES HAVE BEEN IDENTIFIED AS ACCURATELY AS POSSIBLE BUT SHOULD BE CROSS CHECKED IN CRITICAL AREAS.
3. THIS SURVEY SHOULD ALWAYS BE READ IN CONJUNCTION WITH THE DESKTOP UTILITY REPORT, THAT WAS CARRIED OUT AS A PREREQUISITE TO THIS DETECTION SURVEY.

Coordinate Table

Station	Description	Easting	Northing	Level
S1	Road Nail	507402.775	177105.247	26.204
S2	Road Nail	507458.371	177048.166	25.965
S3	Road Nail	507487.016	177093.775	25.942
S4	Road Nail	507486.639	177120.541	25.726
S5	Road Nail	507453.820	177140.543	26.067
S6	Road Nail	507358.951	177109.134	26.049

Equipment Information

Equipment	Manufacturer	Model	Serial Number	MKS REF	Date of Calibration
EML Tx Transmitter	SPX Radiodetection	RD8100	10/TX-3-15652	RD4	02/10/2024
EML Rx Receiver	SPX Radiodetection	RD8200	10/82-GB-628	RD27	02/10/2024
GPR	IDS Georadar	OPERA DUO	SN 010-17-000374	GPR10	20/12/2024
GPS	Leica Geosystems	CS10/GS14	2885708	GNSS 23	N/A

DETECTION SURVEY REPORT

GENERAL
This survey was carried out in accordance with PAS 128:2022 (Publicly Available Specification from BSI) by an experienced surveyor qualified to a minimum of QCF Level 3. After a pre-survey consultation with the client it was agreed to carry out the detection survey using methodology M1 as per Table 2 of the PAS 128:2022. The survey boundary has been shown on the drawing; please see linestyle section of the key for reference.

DESKTOP UTILITY REPORT
Prior to the survey commencing record information was gathered and compiled in a separate desktop utility report. This report should be read in conjunction with the information contained in this utility detection survey. Record information was at the time of the survey the most recent available in accordance with the requirements of the PAS 128:2022. For a full list of the providers searched, records received and the dates the information was obtained, please refer to the attachments page of the desktop utility report.

DETECTION SURVEY

DRAINAGE
Drainage was lifted with pipe sizes and invert levels recorded from surface level, no allowance has been made for confined space entry unless otherwise stated. Wherever possible the chamber sizes have been recorded and positioned on the drawing. All connections from gullies, external rainwater pipes and external soil stacks have been proven wherever possible into manholes and sewer runs by radio sonde location and/or GPR. Where a saddle connection is present the position is assumed only until proven to QB2 or above. In instances where other detection methods were unsuccessful connections between manholes have been assumed to be straight and labelled as QB4. All drainage should be cross checked in critical areas by CCTV survey or verification survey type A. Unable to locate MH4002, assumed to be buried or removed.

WATER
Water utilities have been located using EML methodologies. Where water utilities were unable to be located, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

GAS
Gas utilities were unable to be located using EML or GPR methodologies. Record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

ELECTRICITY
Electric cables within the survey area have been located using EML methods with electronically derived depths recorded.Where GPR results confirmed EML findings the quality level has been increased to QB1. Where electric cables were unable to be detected, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

TELECOM
Telecom ducts have been located using EML methodologies to a quality level of QB2.Where GPR confirms position the quality level has been improved to QB1. Where telecom ducts were unable to be located, record information has been added to the drawing to a quality level of QB4. Due to laws protecting British Telecom apparatus all ducts have been located using remote detection techniques only and compared with record information. Chamber sizes have been recorded using GPR techniques wherever possible. For further information regarding BT apparatus please contact Openreach directly.

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CATV and data ducts have been located using EML methodologies to a quality level of QB2. Where GPR confirms position the quality level has been improved to QB1. Where CATV and data ducts were unable to be located, record information has been added to the drawing to a quality level of QB4. Recommend trial excavations to confirm depth and position in critical areas.

UNKNOWNS
Some unknown targets identified on the drawing using GPR are classified as “non-linear targets”. These are not consistent with what we expect to see when identifying a buried utility, and appear on the drawing as single targets with depths (i.e. not linking two or more depth readings). This does not mean they are not utilities, we are just unable to positively identify them as a utility. We would strongly recommend that further verification surveys (PAS 128:2022 survey type A) are carried out to identify these targets in critical areas.

SEE CAUTIONARY NOTES WITHIN THE UTILITY KEY

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QB1 (QL-B1) QB1P (QB-1P)	Horizontal and vertical location only using two geophysical techniques.	+/- 150mm or +/- 15% of depth whichever is greater
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CATV	Virgin Media	02/12/2024
Communications	EU Networks	02/12/2024
Communications	Neos	02/12/2024
Communications	OCU	04/12/2024
Communications	Vodafone Ltd	03/12/2024
Communications	Zayo	02/12/2024
Tunnels & Pipelines	LinesearchbeforeUdig	02/12/2024

Survey Information

Fieldwork dates	19/12	20/12							
Weather conditions									
Ground conditions	Wet	Wet							

Revision	Description	Surv. by	Check. by	Appr. by	Date

0m 2 4 6 8 10 12 14 16 18 20 22

Topographical and PAS 128:2022 Utility Survey

Lysander

Bath Road
West Drayton
Heathrow
Greater London

Scale:	Sheet Size:	Sheet Number:	Date:
1:200	A0	2	January 2025

Project Number:	Rev:	Surveyed by:	Checked by:	Approved by:
35225	-	NL/MK	AG/AC	CP/NF

mksurveys
www.mksurveys.com www.surveys4bim.co.uk
Head Office: Milton Keynes t: 01908 565561 e: mail@mksurveys.co.uk

Appendix 4
site investigation information from soakaway testing (source: Tetra Tech 2025)

TETRA TECH

Project: **Heathrow Flightpath**

Location: **Heathrow**

Client: **LPH UK 1 Ltd**

Location Details

Easting: 507450.77 Northing: 177165.31

Level: 0.00mAOD Depth: 2.00m

Logger: GB Type: TP

Status: DRAFT

Pit Number: **SK101**

Sheet 1 of 1

Hole Information

Pit Dimensions: 0.50m x 2.00m

Orientation: 0°

Shoring: None

Stability: Stable

Plant: Kubota U20

Groundwater

Strike (m)	Rose To (m)	After (mins)	Remarks

Scale: 1:50

Checked By: JE

Approved By: OS

Start Date: 18/03/2025

Finish Date: 18/03/2025

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Multicoloured sandy GRAVELof subangular to subrounded fine to coarse of chert sandstone and frequent brick fragments. Sand is orange and brown fine to coarse *@ 0.10 to 0.25m bgl. Small lenses of reddish brown SAND (north wall)*		0.20	-0.20					
MADE GROUND: Greyish brown and orangish brown fine to coarse very gravelly SAND. Gravel is multicoloured subangular to subroundedfine yo coarse of chert, flint, sandstone, clinker with occasional brick fragments.								
Orangish brown fine to coarse slightly gravelly SAND. Gravel is light yellow, brown, and greyish black, subrounded fine to medium of sandstone. *@ 1.80 to 2.00m bgl. Gravelly SAND becomes clayey gravelly SAND.*		1.20	-1.20					
EOH at 2.00m -		2.00	-2.00					

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

11th Floor,
Angel Court,
London
EC2R 7HJ
020 7250 7500

Project Number: **784-B070271**

TETRA TECH

Project: **Heathrow Flightpath**

Location: **Heathrow**

Client: **LPH UK 1 Ltd**

Location Details

Easting: 507467.14 Northing: 177097.88

Level: 0.00mAOD Depth: 2.30m

Logger: GB Type: TP

Status: DRAFT

Pit Number: **SK102**

Sheet 1 of 1

Hole Information

Pit Dimensions: 0.50m x 2.00m

Orientation: 0°

Shoring: None

Stability: Stable

Plant: Kubota U20

Groundwater

Strike (m)	Rose To (m)	After (mins)	Remarks

Scale: 1:50

Checked By: JE

Approved By: OS

Start Date: 18/03/2025

Finish Date: 18/03/2025

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grey and light to dark brown sandy GRAVEL subangular fine to coarse chert sandstone and granite with stick fragments. *@ GL to 0.06m bgl. GRAVEL is reddish pink and greyish white.* *@ 0.27 to 0.56m bgl. - SAND is greyish black.*								
MADE GROUND: Greyish black fine to coarse slightly clayey gravelly SAND. GRAVEL is dark brown and orangish brown subangular of chert and sandstone with occasional flint and occasional brick fragments. *@ 0.65 to 0.70m bgl. Occasional bituminous material encountered.* *@ 0.65 to 0.90m bgl. Mild hydrocarbon olfactory odour.*		0.56	-0.56					
Light brown and reddish pink fine to coarse clayey gravelly SAND. Gravel is light brown subangular to subrounded fine to coarse of sandstone.		1.00	-1.00					
Light to dark brown fine to coarse clayey slightly gravelly SAND. Gravel is fine subangular of sandstone.		1.40	-1.40					
Yellowish brown slightly sandy GRAVEL of subangular to subrounded fine to coarse sandstone. SAND is fine to coarse.		1.95	-1.95					
Yellowish brown and grey slightly sandy GRAVEL of subrounded to rounded fine to coarse sandstone. Sand is fine to coarse.		2.20	-2.20					
EOH at 2.30m -		2.30	-2.30					

Observations / Remarks

11th Floor,
Angel Court,
London
EC2R 7HJ
020 7250 7500

Project Number: **784-B070271**

TETRA TECH

Project:	**Heathrow Flightpath**	Location Details	Status
Location:	**Heathrow**	Easting: 507428.90 Northing: 177041.62	DRAFT
Client:	**LPH UK 1 Ltd**	Level: 0.00mAOD Depth: 2.00m	Pit Number **SK103**
		Logger: GB Type: TP	Sheet 1 of 1

Hole Information

Pit Dimensions: 2.00m × 0.50m

Orientation: 0°
Shoring: None
Stability: Stable
Plant: Katubo U20

Groundwater

Strike (m)	Rose To (m)	After (mins)	Remarks

Scale: 1:50
Checked By: JE
Approved By: OS
Start Date: 18/03/2025
Finish Date: 18/03/2025

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Dark brown, brownish yellow and orangish sandy cobbley GRAVEL of angular to subangular fine to coarse chert sandstone and frequent brick fragments. Cobbles between 64mm and 128mm		0.35	-0.35					
Orangish brown fine to coarse clayey gravelly SAND. Gravel is black and orange subangular fine to coarse of sandstone and chert.								
EOH at 2.00m -		2.00	-2.00					

Observations / Remarks

11th Floor,
Angel Court,
London
EC2R 7HJ
020 7250 7500

Project Number
784-B070271

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