ARCHAEOLOGICAL DESK BASED ASSESSMENT

NCP Flightpath, Heathrow, London Borough of Hillingdon

JAC28471
NCP Flightpath,
Heathrow,
London Borough
of Hillingdon
v.1 DRAFT
September 2022

rpsgroup.com

Quality Management

Version	Status	Authored by	Reviewed by	Approved by	Review date
1	Draft	Sally Dicks	Edward Hawkins	Sally Dicks	21.09.2022

Approval for issue

Sally Dicks	Sally Dicks	21 September 2022

File/Model Location

Document location:	JAC28471
Model / Appendices location:	JAC28471

Prepared by:

Sally Dicks

20 Farringdon Street
London, EC4A 4AB

T +44 7743 800950
E sally.dicks@rpsgroup.com

Prepared for:

Heathrow NCP Property Limited

EXECUTIVE SUMMARY

The site of NCP Flightpath, Heathrow in the London Borough of Hillingdon has been reviewed for its below ground archaeological potential.

The site is located within the Heathrow Archaeological Priority Zone (DLO36182).

The site is considered 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 anticipated.

The construction of a school in the late 19th century and earthworks associated with the construction of the cutting for the M4 in the 1960s is considered to have had a severe negative archaeological impact within the southern, northern and eastern parts of the site.

However, based on a review of topographic and geotechnical information, the potential for archaeological survival is considered to be good within the central part of the site.

Development proposals comprise the demolition of the existing car park and the construction of industrial units with associated car parking and access.

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

On this basis, it is considered that if further archaeological investigation is required at the site, this could be attached to the granting of consent secured by an appropriately worded planning condition.

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Figures

1 INTRODUCTION AND SCOPE OF STUDY

1.1 A planning application (Ref. 41632/APP/2022/2301) has been submitted to the London Borough of Hillingdon for the demolition of the existing car park and redevelopment for industrial uses. The archaeological advisor at the Greater London Archaeological Advisory Service (GLAAS) has recommended that an archaeological desk-based assessment is submitted to inform the planning decision.

1.2 This below ground archaeological desk-based assessment has been prepared by RPS on behalf of Heathrow NCP Property Limited. The subject of this Assessment comprises the site, also referred to as the study site, known as NCP Flightpath, Heathrow, Bath Road, Sipson, UB7 0DU. The study site is centred at TQ 07438 77065 (Figs. 1-2).

1.3 In terms of relevant nationally designated heritage assets, as defined below in Section 2 and as shown on Figure 2, no World Heritage sites, Scheduled Monuments, Historic Wreck or Historic Battlefield sites have been identified either within the study site itself, or within the vicinity of the study site.

1.4 The study site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Borough Council.

1.5 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 study site.

1.6 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.

1.7 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.

1.8 This document draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the study 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 last updated in February 2019. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014 and last updated 23 July 2019 (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment).

2.3 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

2.4 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.

2.5 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 189 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.

2.6 *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.

2.7 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.

2.8 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.

2.9 *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.

2.10 *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.

2.11 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.

2.12 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.

2.13 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.

Regional Planning Policy

2.14 The relevant Strategic Development Plan framework is provided by the London Plan - the Spatial Development Strategy for London, Consolidated with Alterations Since 2011 (March 2016). There were no changes to Policy 7.8 Heritage Assets and Archaeology; slight amendments were made to the wording of Policy 7.10 World Heritage Study sites, cross referencing this policy with the Supplementary Planning Guidance document for the setting of World Heritage Study sites prepared in 2012. Recent Minor Alterations to the London Plan (MALP), published 14 March 2016, which was consolidated with the Further Alterations to the London Plan (FALP adopted March 2015), concern housing standards and parking, with no alteration to heritage policies. The MALP is hereafter referred to as the 'London Plan'.

2.15 Policy in the London Plan relevant to archaeology at the study site includes the following:

Policy 7.8 Heritage Assets and Archaeology

Strategic

A. London's heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, Registered Battlefields, Scheduled Monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.

B. Development should incorporate measures that identify, record, interpret, protect and, where appropriate, present the site's archaeology.

Planning Decisions

C. Development should identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate.

D. Development affecting heritage assets and their settings should conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.

E. New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.

Policy 7.9 Heritage-led Regeneration

Strategic

A. Regeneration schemes should identify and make use of heritage assets and reinforce the qualities that make them significant so they can help stimulate environmental, economic and community regeneration. This includes buildings, landscape features, views, blue ribbon network and public realm.

Planning Decisions

B. The significance of heritage assets should be assed when development is proposed and schemes designed so that the heritage significance is recognised both in their own right and as catalysts for regeneration. Wherever possible heritage assets (including buildings at risk) should be repaired, restored and put to a suitable and viable use that is consistent with their conservation and the establishment and maintenance of sustainable communities and economic vitality.

2.16 A new London Plan has been prepared in draft and is due for adoption during 2020. Chapter 7 'Heritage and Culture' contains draft polices HC1 to HC7. Of particular relevance to sites containing non-designated heritage assets is draft policy HC1:

HC1 Heritage and Conservation Growth

A. Boroughs should, in consultation with Historic England 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

2.17 The relevant Development Plan framework is provided by the London Borough of Hillingdon's Local Plan, adopted in November 2012. The Plan contains the following policy which provides a framework for consideration of development proposals affecting 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. **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.**

2.18 In terms of relevant designated heritage assets, as defined above and as shown on Figure 2, no nationally designated World Heritage Sites, Scheduled Monuments, Historic Battlefield or Historic Wreck sites lie within the vicinity of the study site.

2.19 The study site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Council.

2.20 A planning application (Ref. 41632/APP/2022/2301) has been submitted to the London Borough of Hillingdon for the demolition of the existing car park and redevelopment of the study site for industrial uses. The archaeological advisor at the Greater London Archaeological Advisory Service (GLAAS)

has recommended that an archaeological desk-based assessment is submitted to inform the planning decision.

2.21 In line with relevant planning policy and guidance, this desk-based assessment seeks to clarify the study 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 geology of the study site is shown by the British Geological Survey website (accessed on 14th September 2022) 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 (BGS, 2022).

3.3 The study 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 study site was subject to geotechnical investigation in November 2021 (see Appendix 1). 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 consistantly 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 study site.

3.5 Within the southern part of the site **Borehole No. 204** recorded 2.4m of Made Ground over Langley Slits (see Appendix 1). 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.

Topography

3.6 The study site is an irregularly shaped parcel of land that measures c.1.54ha.

3.7 The study site is set on 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 topograpghy level drops significantly to the eastward, falling toward the M4.

3.8 No watercourses or naturally occurring bodies of water are present on the study site or are known within the immediate vicinity. The Colne River runs north/south c.3km west of the site and the Cranford River runs north/south c.3km east of the study 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	-	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 study 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 designated heritage assets, as defined above in paragraph 2.8 and as shown on Figure 2, In terms of relevant nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wreck or Historic Battlefield sites have been identified within the vicinity of the study site.

4.3 In terms of local designations, the study site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Council.

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 - predominatly occupied by orchards.The southern part of the site was 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 a car parking area through the laying of hardstanding.

Previous Archaeological Investigations Within 500m of the Study Site

4.6 An archaeological evaluation at 276–278 Bath Road, carried out by Sipson in 2010. Twenty-two evaluation trenches were excavated on this site. Widespread horizontal truncation of deposits had occurred and no archaeological remains or artefacts were recorded (ELO17503).

4.7 An archaeological evaluation took place at Home Farm in 1991, comprising excavation of fifteen 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 (ELO3640).

4.8 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 (ELO5486).

4.9 An archaeological evaluation took place at Custom House, Nettleton Road in 1993, comprising excavation of one trench which revealed no archaeological finds or features (ELO11093).

4.10 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 (ELO8959).

4.11 An archaeological excavation was undertaken in 2011 on the Phase Two area of Sipson Farm. Ninty-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 (ELO5609).

4.12 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 (ELO3551).

4.13 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 (ELO1364).

4.14 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 (ELO4135).

Prehistoric

Palaeolithic and Mesolithic

4.15 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.

4.16 The presence of brickearth (Langley Silt Member) across the study 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).

4.17 A Palaeolithic handaxe, of middle/late Acheulian type, was discovered at Drinkwater Sabey's Pit, c.1km north-west of the study site (MLO68486). A further Palaeolithic flint was recovered at The Imperial College Sports Ground, c. 1km north-east of the site (MLO71994).

4.18 Residual Palaeolithic and Mesolithic flints are recorded from Home Farm, Harmondsworth (MLO58506), c.450m north-west of the study site.

4.19 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.

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

4.21 The Colne River Valley, located c.2.5 km west of the study 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 study 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 study site.

Neolithic

4.22 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.

4.23 Extensive evidence for Neolithic settlement activity (including a large enclosure, MLO71995) is recorded from numerous archaeological excavations south of the M4 at Sipson Lane and Victoria Lane (MLO100471), between 950m and 1.4km north-east of the study site. Neolithic pits and ditches are recorded from an archaeological excavation at Home Farm, Harmondsworth (MLO13794, ELO3639), c.500m north-west from the study site. Evidence for Neolithic activity is also recorded from Sipson Road, Harlington (MLO75747), c.200m north-east from the study site, and in the form of pits, with associated flint and pottery, at Sipson Lane, Harlington, c.1.2km north of the site (ELO8966).

4.24 A Neolithic bowl was recovered during excavations on a Bronze Age settlement and field system, c.500m north-west of the study site (MLO73505), and Neolithic flint fragments were recovered from an assemblage comprising finds dating from the Palaeolithic to the Neolithic (MLO58506). 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 (MLO75863). A Neolithic axe was encountered from a field c.975m north-east of the site, now held at the British Museum (MLO2687).

4.25 A scatter of Neolithic and Bronze Age flint flakes and cores was encountered during an excavation, c.1km east of the study site, with one of the cores thought to have been used to produce arrowheads (MLO76932).

4.26 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 study 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.

4.27 The evidence indicates that the study site lay within a wider landscape of Neolithic occupation and activity, involving settlement, tool production and hunting. In addition to the study 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

4.28 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.

4.29 An extensive Bronze Age field system is recorded between 500m and 970m north-west of the study site at Home Farm, Harmondsworth (ELO3639, ELO11450), together with settlement evidence (MLO73505, ELO3640, ELO3641). An extension of one of these ditches was encountered during a later evaluation nearby (MLO75991). Archaeological investigations at Sipson Farm, Sipson Road revealed widespread evidence for Bronze Age settlement and activity, including structures, field systems and cremation burials (MLO99541, ELO13914, ELO8959). 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 (MLO100472, ELO8965). 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 (MLO71997, ELO3712).

4.30 Several features dating from the Middle Bronze Age to Early Iron Age were encountered c.1km east of the study site, producing several sherds of Bronze Age bucket urns (MLO74427).

4.31 In the wider landscape, ploughed-down barrows have been identified within the vicinity of Heathrow, to the south of the study 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).

4.32 The presence of Bronze Age settlement and field systems in close proximity to the study 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

4.33 Archaeological investigations at Home Farm, Harmondsworth Lane, between 350m and 500m north-west of the study site, revealed Iron Age pits and a ditch (ELO3640, MLO58490), 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 (ELO8965). A possible Iron Age ditch is recorded at Sipson Road, c.970m north of the site (MLO75991), while an Iron Age settlement is recorded again at Sipson Road, c.250m north-east of the site (ELO8959, MLO75379). Residual Iron Age pottery is recorded from c.720m north of the site (MLO73807). A single Iron Age gold stater (coin) is recorded from c 970m north-east of the study site (MLO17711).

4.34 Several undated features, primarily pits, were encountered during a watching brief c.350km south of the study site, some provisionally attributed to the Iron Age by small fragments of iron slag (MLO71645).

4.35 Evidence of Iron Age occupation at Imperial College Sports Ground, c.970m north-east of the study site, included an enclosure, gullies and three roundhouses (MLO71996).

4.36 Further evidence of Iron Age occupation was encountered, continuing on from that of the Bronze Age at Victoria Lane/Sipson Lane (MLO100472), and preceding significant Roman occupation at the same location and at Sipson Road, c.870m north-west of the study site (MLO71998).

4.37 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 study 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).

4.38 The study 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 study site, the proximity of these areas suggests the potential for further Iron Age archaeological evidence at the study site itself to be moderate.

Roman

4.39 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 study site, took its name from the road bridges here crossing the Thames (Latin pontes: “bridges”).

4.40 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 study site (MLO71998; MLO100474, ELO5196; MLO75379, ELO8959, ELO13914).

4.41 Further evidence of field systems may have been identified at Imperial College Sports Ground, c. 600m north-east of the study site (MLO73805, MLO73806), at Sipson Road nearby (MLO76934), and at The Crescent, c.1km east of the site (MLO76930).

4.42 Unstratified Roman finds are recorded from Home Farm, Harmondsworth (MLO58492, ELO3640), Bath Road (MLO71677), Blunts Field (MLO69130) and Sipson Lane (MLO73807).

4.43 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.

4.44 From the evidence, it is clear that the study 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 study site itself likely lay within an agricultural landscape, suggesting a moderate potential for archaeological evidence of field systems and artefact scatters.

Anglo-Saxon & Medieval

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

4.46 A possible Anglo Saxon sunken featured building is recorded at Home Farm, Harmondsworth, c.650m north-west of the study site (MLO22674, ELO3639, ELO11450). A number of Saxon pits are recorded from Bath Road, Harmondsworth, c.440m west of the study site (MLO71680, MLO71679, ELO4135). A further Anglo Saxon building is recorded at Imperial College Sports Ground, c.700m north of the study site (MLO73806, ELO4596). An Anglo-Saxon settlement and field system dated to the Early and Middle Saxon periods was recorded at Wall Garden Farm/Nine Elms Farm, c.1.2km north-east of the study site (MLO100473), and further evidence of medieval ploughing and enclosure between 600m and 1km north-east of the site (MLO72001, MLO74428, ELO568, ELO3626, ELO13914, ELO5609).

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

4.48 Scatters of medieval pottery are recorded c.400m north-west of the site (MLO58492, ELO3640).

4.49 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).

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

4.51 The study site appears to be situated within an agricultural landscape occupied throughout the medieval period, likely continuing on from Roman settlement. 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)

4.52 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).

4.53 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 study site (MLO85042, MLO63843, MLO76945, ELO9549). Post-medieval field systems and evidence of enclosure have been recorded c.1km west of the site (MLO68118, MLO73506, ELO3664), c.900m north (MLO76933) and c.1km north-east (MLO72000).

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

4.55 Maps from the late 19th and early 20th centuries place the study site within an area of orchards and pasture (see Fig. 5: 1866 OS). In 1875 Heathrow School was founded in 1875 on the north side of Bath Road witin the southern part 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 entended in 1891 and soon after it was renamed 'Sipson and Heathrow School'. The 1896 Ordnance Survey shows the layout of the school (Fig. 6). The central and northern parts of the site remained as orchards.

4.56 The 1935 Ordnance Survey (Fig. 7) shows new residential properties along Simpson Way and Allotment Gardens to the north of the site. The central and northern parts of the site appear to have been cleared of orchards.

4.57 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 forming the eastern boundary of the study site. By 1960 the central and northern parts of the site were being used for car parkig (see Fig. 8: 1962-1966 OS).

4.58 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.

4.59 The 1988-92 Ordnance Survey shows the study site empty of school buildings and in use as a car park (see Fig. 9).

4.60 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 could survive withn the southern parts of the study site. Overall, these remains have limited archaeological interest and significance.

Assessment of Significance

4.61 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

4.62 No archaeological designated heritage assets as defined in the NPPF are recorded on or in close proximity to the study site.

Non-Designated Archaeological Heritage Assets

4.63 In terms of local designations, the site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.21).

4.64 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 study site boundary, the balance of probability is that these will be of local significance only.

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

4.66 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	**Low (Local)**

	archaeological interest and significance.	

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

Site Conditions

5.1 The study site is currently occupied by a hardstanding surface level car park with access from a bridge over the M4. A small ticket booth is located within the northern part of the study site (Fig. 11).

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 part of the site.

5.3 Excavations for services within the car park will have caused localised impacts on archaeological horizons across the site (see Appendix 2: Plan showing utilities).

5.4 Excavations for the M4 branch road corridor may have impacted the northern and eastern parts of the site. The greater depths of Made Ground observed during the soil investigations could be evidence of landforming in these areas (see Appendices 1 and 2: **BH201** and **BH203**).

5.5 Agricultural use of the study site prior to development can be considered likely to have had a moderate, widespread negative archaeological impact.

5.6 Overall, the potential for archaeological survival is considered to be good within the central part of the site and poor within the southern, northern and eastern parts of the site.

Proposed Development

5.7 A planning application (Ref. 41632/APP/2022/2301) has been submitted to London Borough of Hillingdon for the demolition of the 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 (see Fig. 12).

5.8 The archaeological advisor at the Greater London Archaeological Advisory Service (GLAAS) has recommended that an archaeological desk-based assessment is submitted to inform the planning decision.

Review of Potential Development Impacts on Archaeological Assets

5.9 The proposed development will not impact on any below ground designated or known non-designated archaeological assets.

5.10 The site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.21).

5.11 The study 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.

5.12 Past post-depositional impacts within parts of the study site are considered to have had a severe negative archaeological impact. These impacts are expected to be more significant within the southern, northern and eastern parts of the site. The potential for archaeological survival is considered to be good within the central part of the study site.

6 SUMMARY AND CONCLUSIONS

6.1 The site of NCP Flightpath Heathrow in the London Borough of Hillingdon, 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 study site.

6.3 In terms of relevant nationally significant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Historic Wreck or Historic Battlefield sites have been identified within the vicinity of the study site.

6.4 The site is located within the Heathrow Archaeological Priority Zone (DLO36182), identified as a potential prehistoric archaeological resource by Hillingdon Council (see Section 2.21).

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 study site are considered to have had a severe negative archaeological impact. These impacts are expected to be more significant within the southern, northern and eastern parts of the site.

6.7 The potential for archaeological survival is considered to be good within the central part of the study site.

6.8 Proposals comprise the demolition of the existing car park and the construction of industrial units with associated car parking and access.

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

6.10 On this basis it is considered that if further archaeological investigation is required at the site, 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

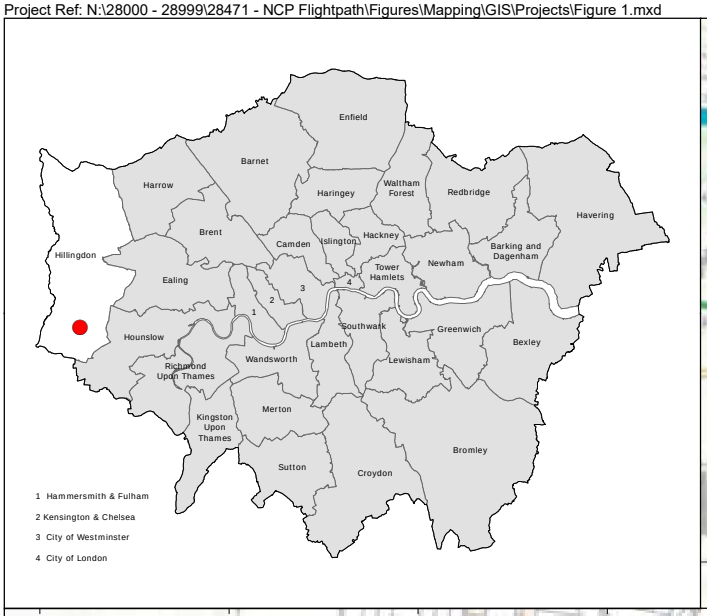
1866 Ordnance Survey

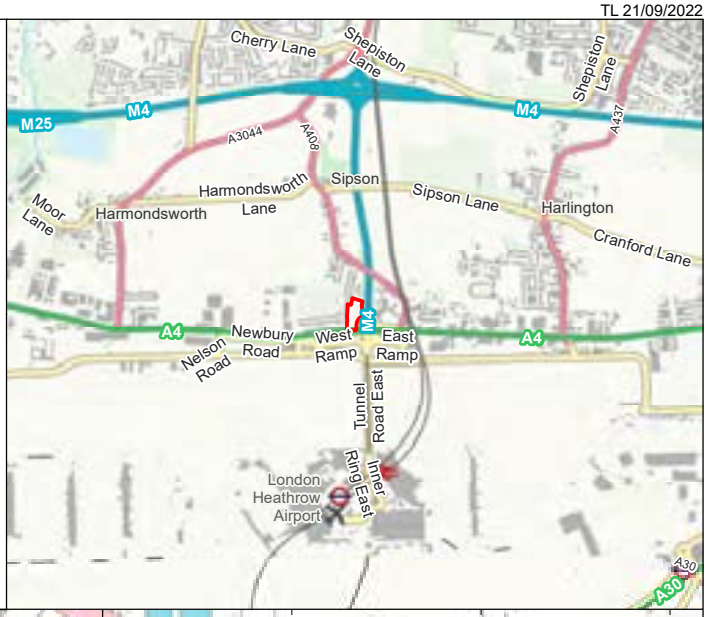
1896 Ordnance Survey

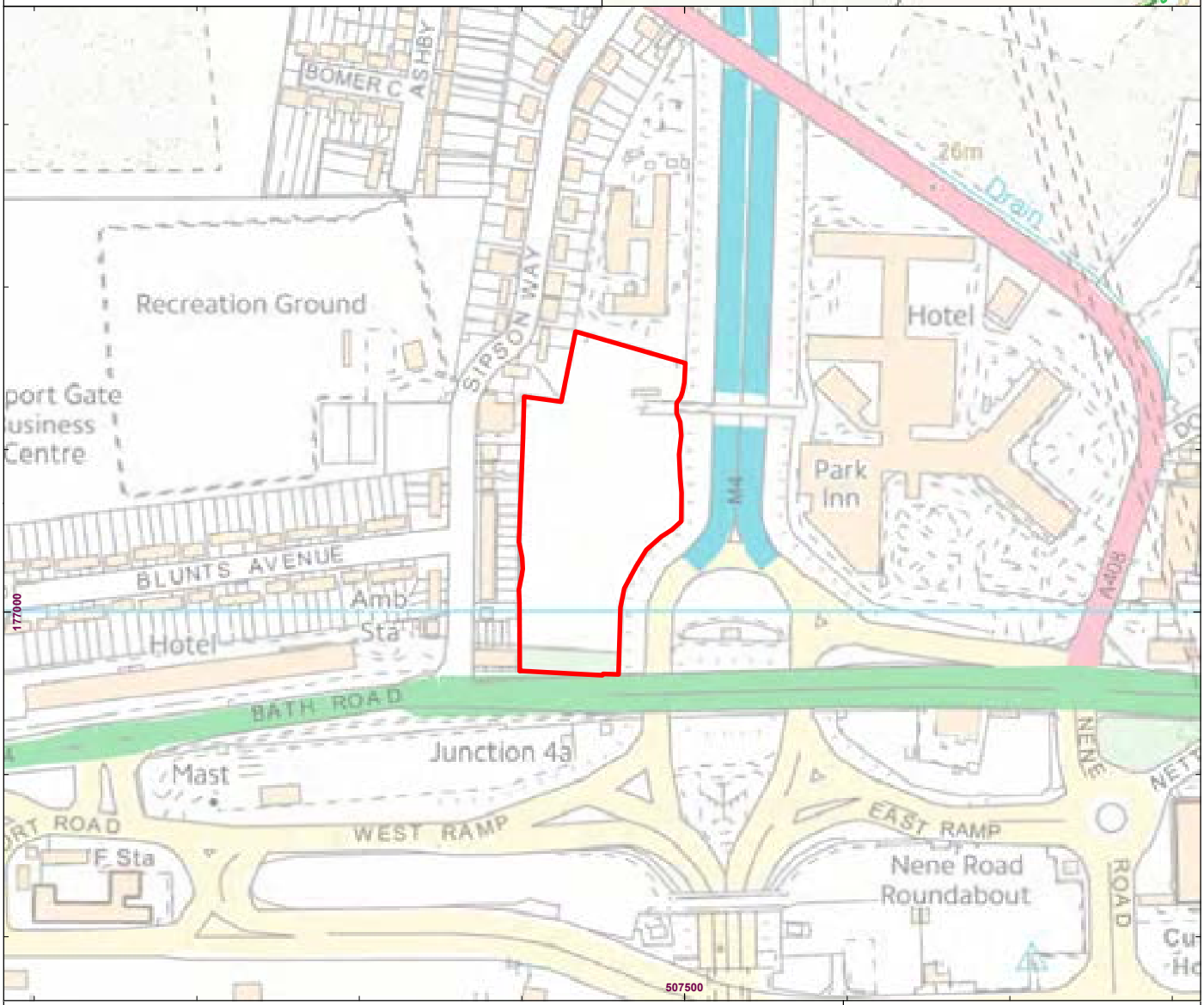
1935 Ordnance Survey

1962-66 Ordnance Survey

1988-92 Ordnance Survey







Site Boundary

N

0 50 100 m

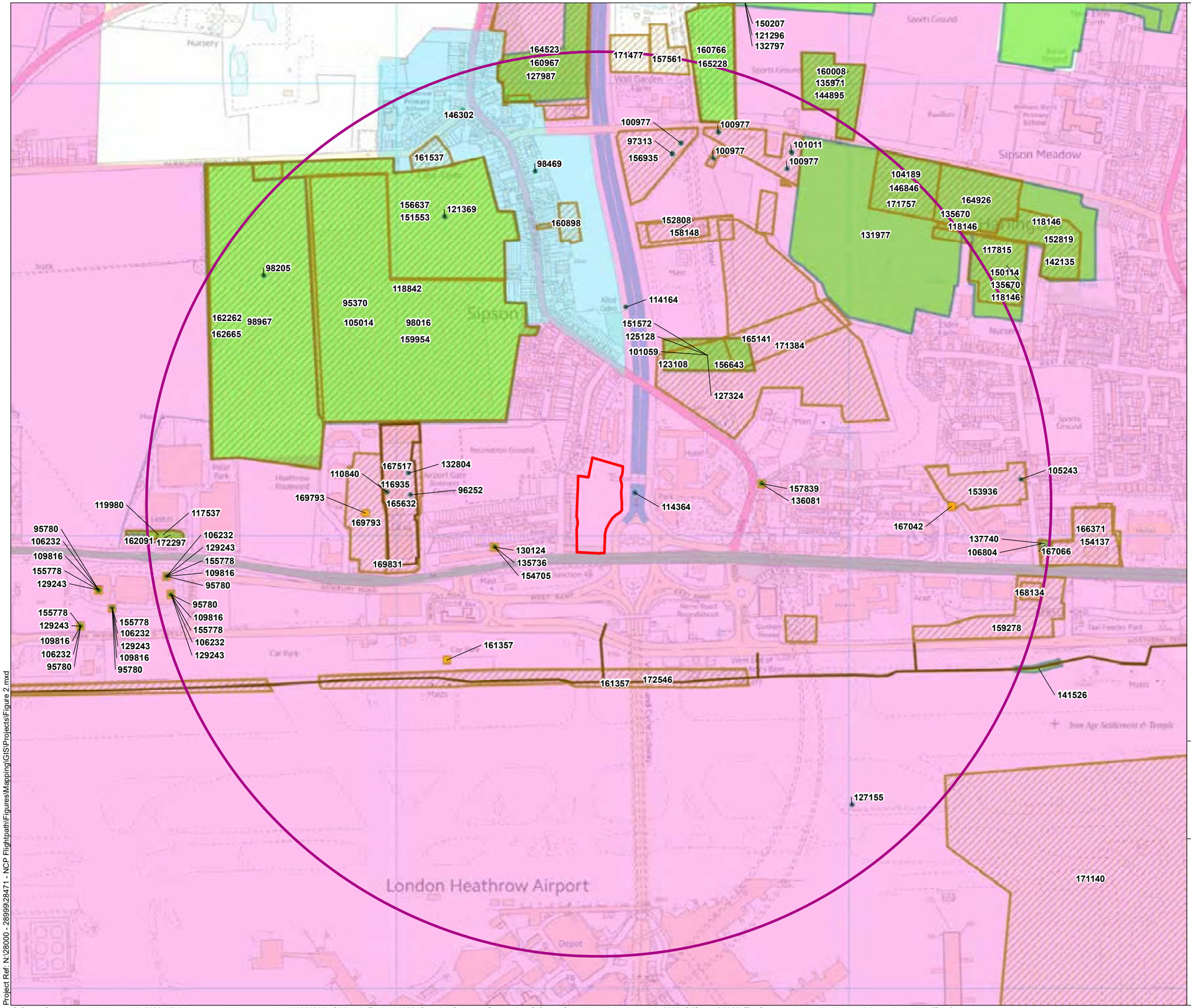
Scale at A4: 1:4,000

MAKING COMPLEX EASY

Figure 1

Site Location

TL 21/09/2022



Legend

- Site Boundary
- 1km Site Radius

Non-designated Heritage Assets:

- HER Record (point)
- HER Record (polygon)

Archaeological Notification Areas

- 77820 Heathrow Area
- 78393 Sipson

Previous Archaeological Work:

- Event Record (linear)
- Event Record (point)
- Event Record (polygon)

N

0 100 200 m

Scale at A3: 1:8,000

MAKING COMPLEX EASY

Figure 2

HER Plot
(data from GLHER)

Project Ref: N:\28000 - 28999\28471 - NCP Flightpath\Figures\Mapping\GIS\Projects\Figure 2.mxd

Site Boundary (approximate)

N

Not to Scale:
Illustrative Only

MAKING COMPLEX EASY

Figure 3

1754 John Rocque's Map of Middlesex

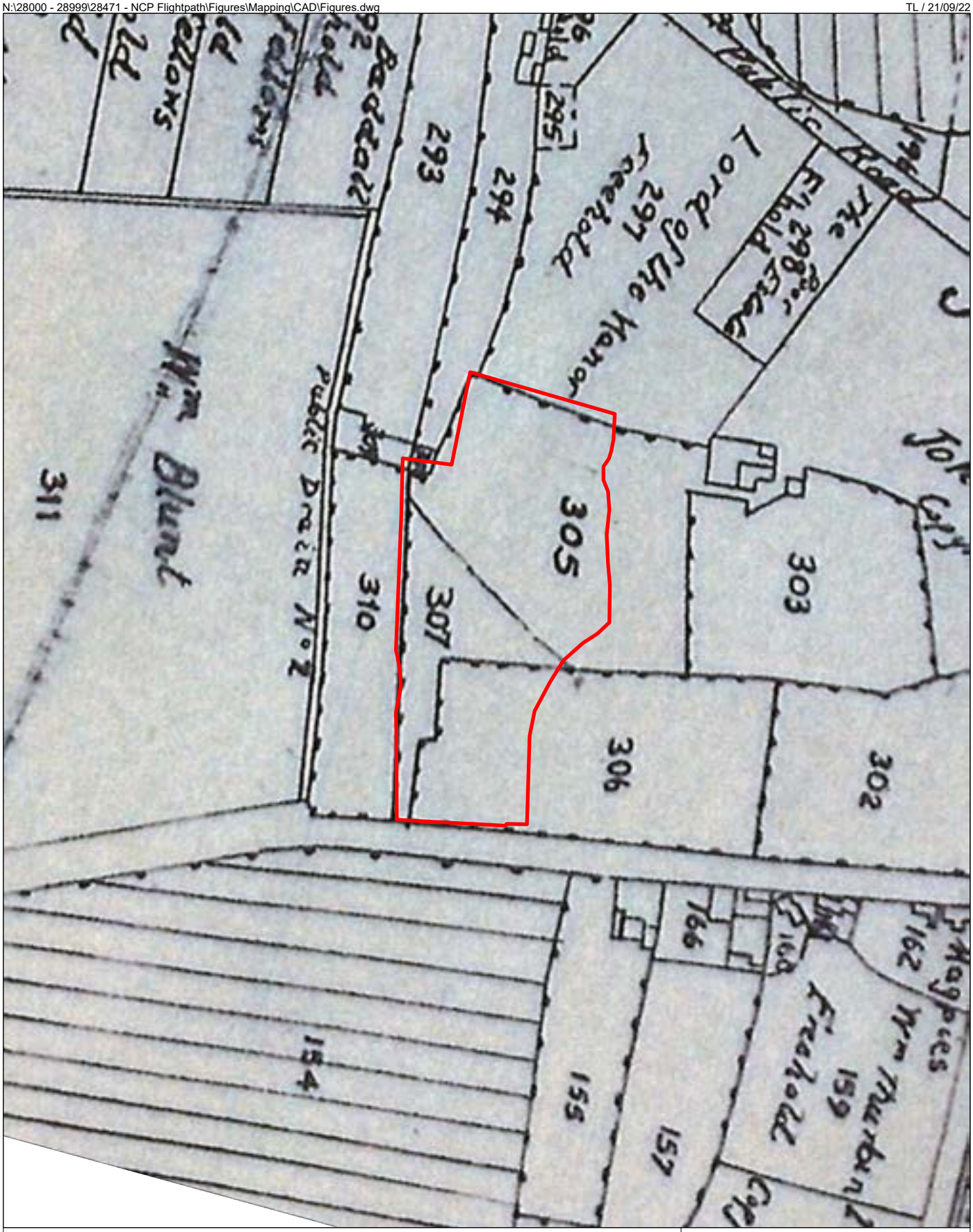


Figure 4

1819 Parish of Harmondsworth Enclosure Map

Site Boundary

N

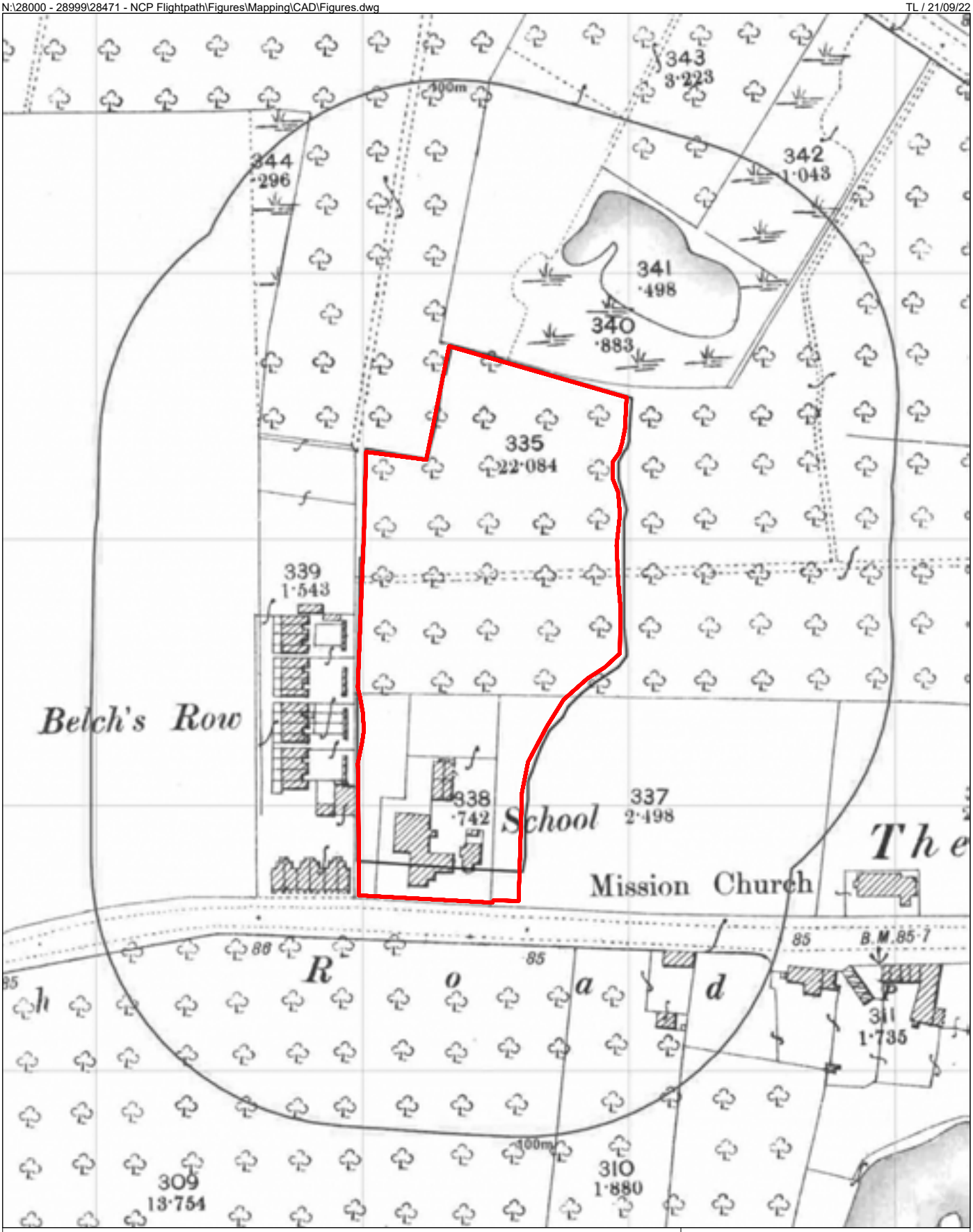
0 10 20 30 40 50m

Scale at A4: 1:2,000

MAKING COMPLEX EASY

Figure 5

1866 Ordnance Survey Map



Site Boundary

N

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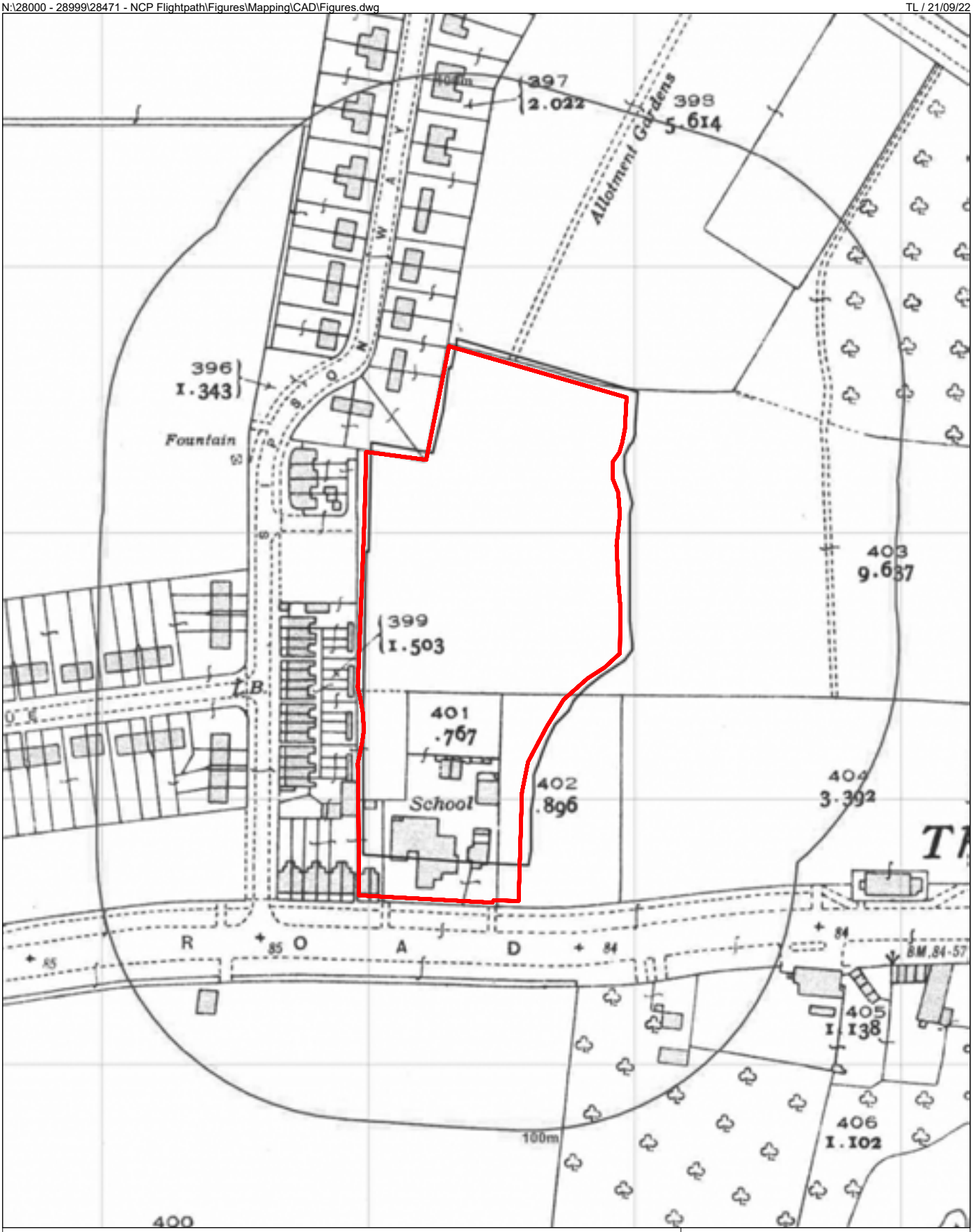
Scale at A4: 1:2,000

MAKING COMPLEX EASY

Figure 6

1896 Ordnance Survey Map



Site Boundary

N

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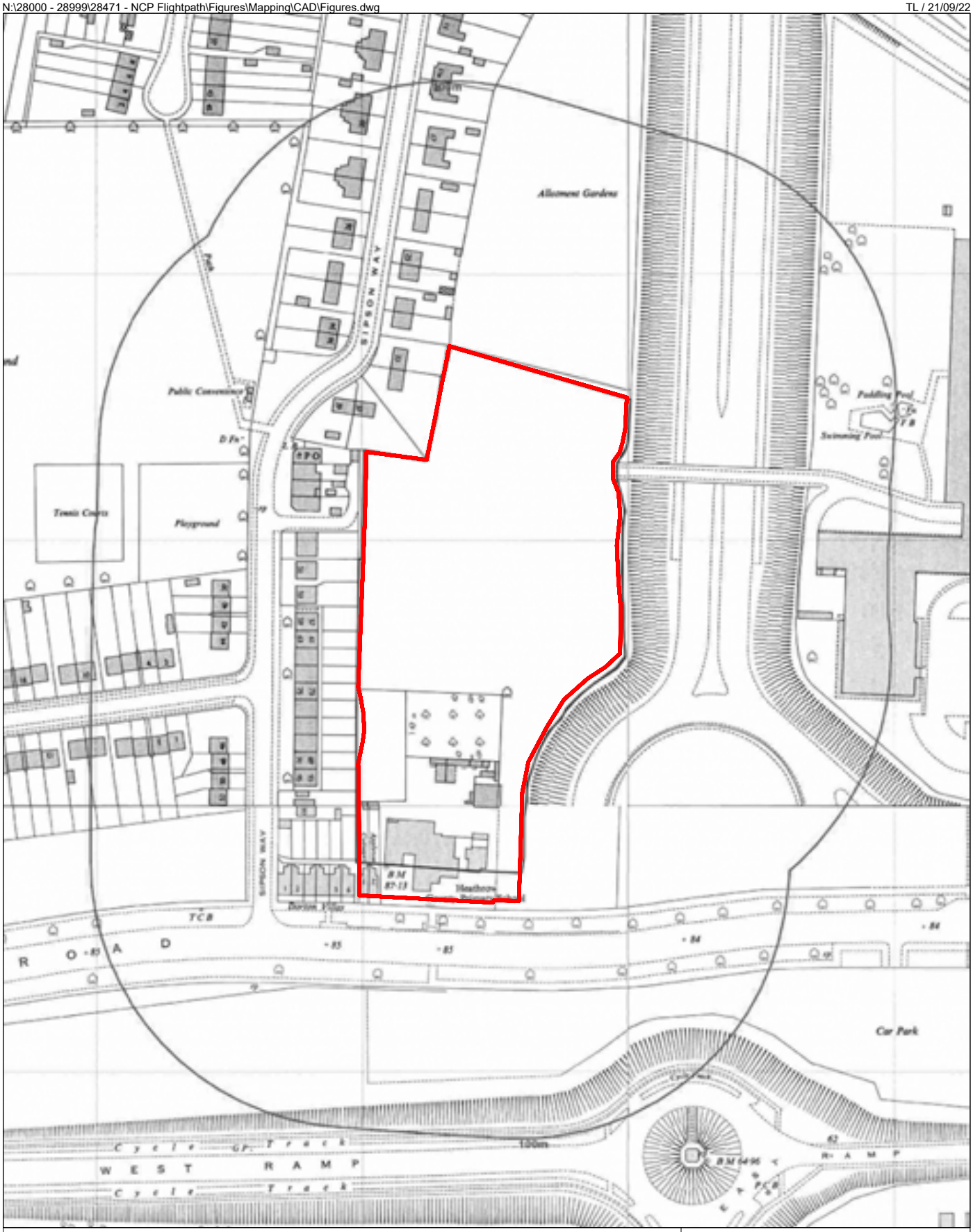
Scale at A4: 1:2,000

MAKING COMPLEX EASY

Figure 7

1935 Ordnance Survey Map



Site Boundary

N

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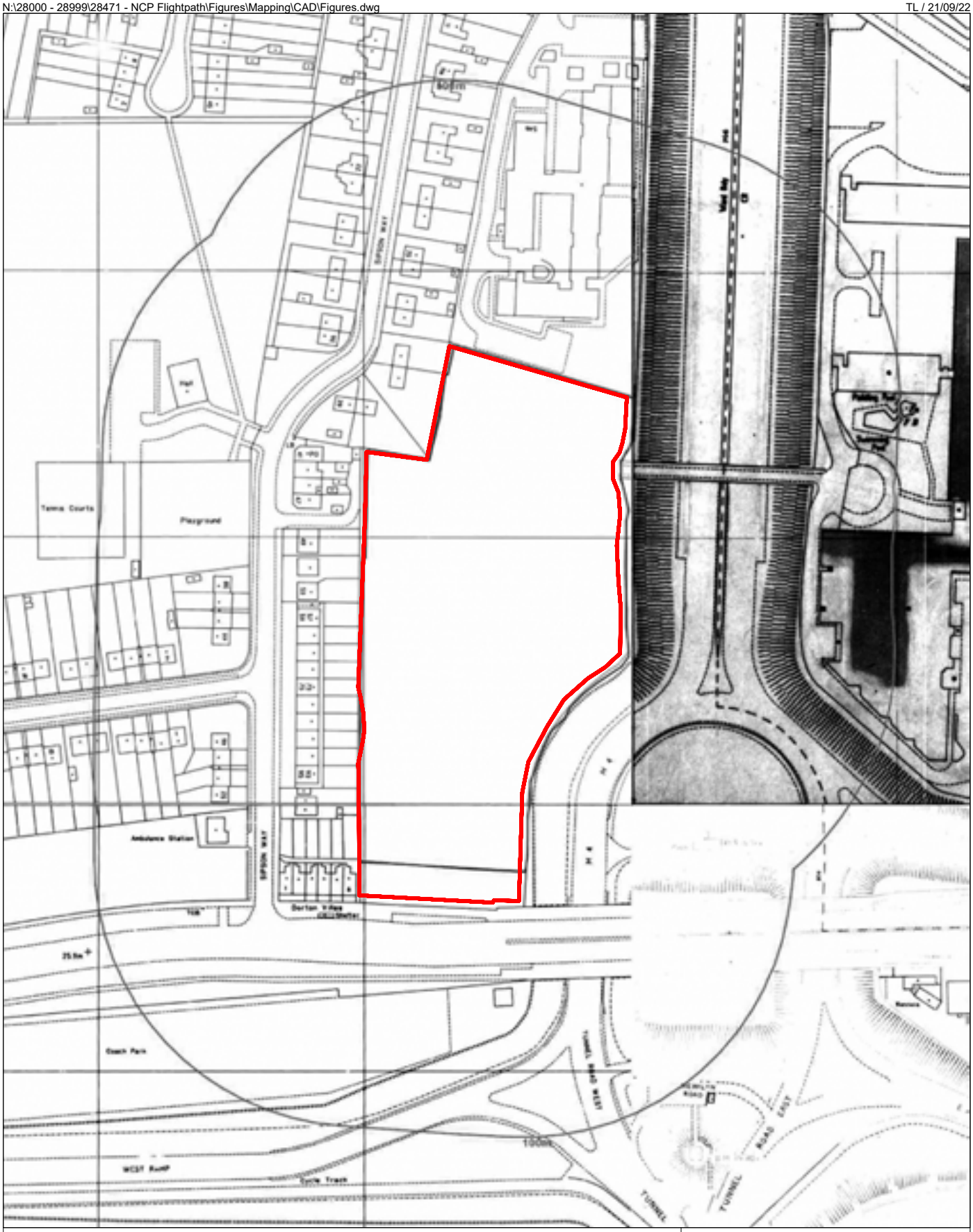
Scale at A4: 1:2,000

MAKING COMPLEX EASY

Figure 8

1962-66 Ordnance Survey Map



Site Boundary

N

0 10 20 30 40 50m

Scale at A4: 1:2,000

MAKING COMPLEX EASY

Figure 9

1988-92 Ordnance Survey Map

Site Boundary

N

Not to Scale:
Illustrative Only

MAKING COMPLEX EASY

Figure 10

1999 Aerial Photograph
(Google Earth)

Site Boundary

N

Not to Scale:
Illustrative Only

MAKING COMPLEX EASY

Figure 11

2022 Aerial Photograph
(Google Earth)

Site Boundary

N

Not to Scale:
Illustrative Only

MAKING COMPLEX EASY

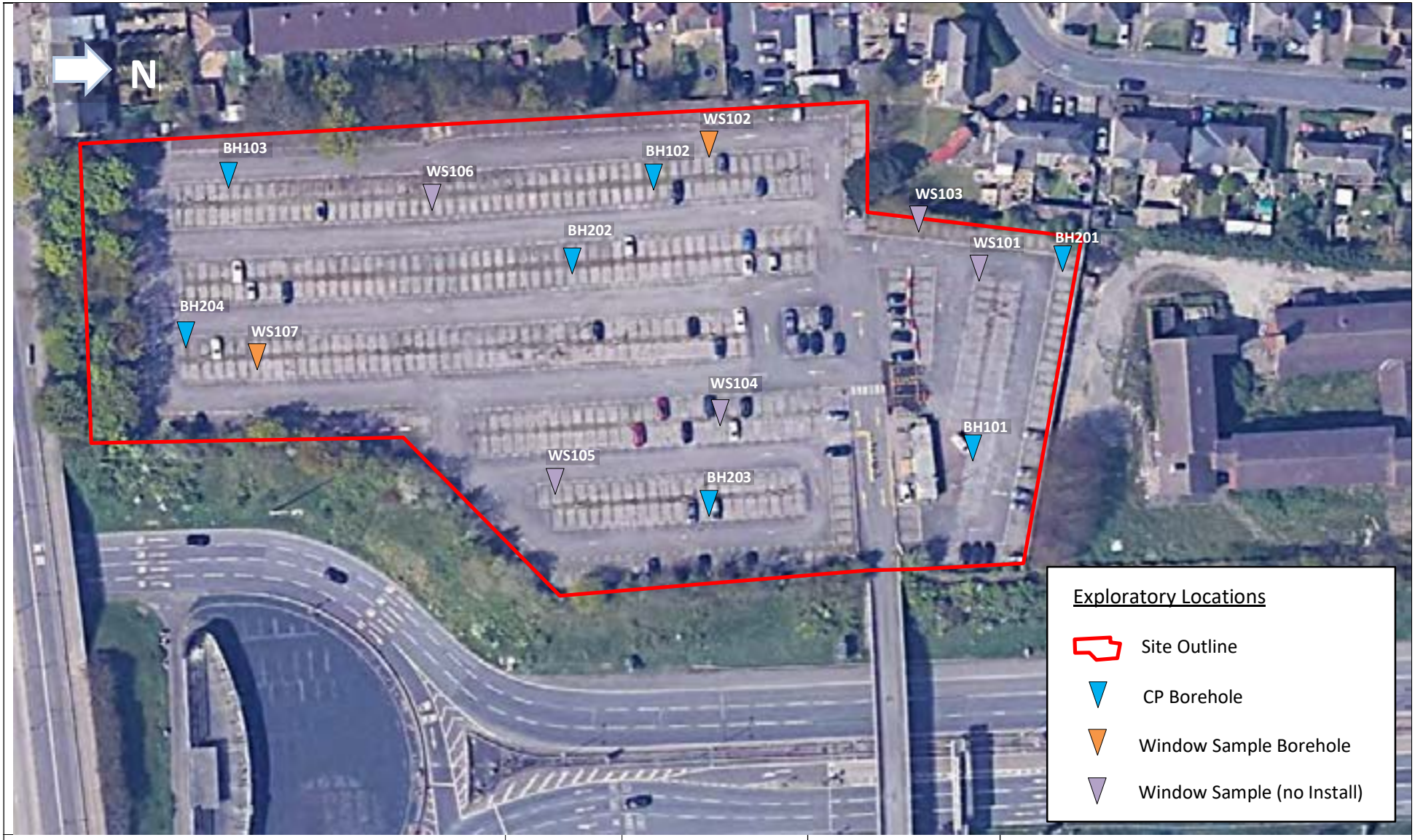
Figure 12

development Proposals

APPENDICES

Appendix 1

Appendix 1: 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		13					
SPT							
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)			
			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. 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:
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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	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								
				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)				
D								
			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

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				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	2				
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. 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.			
ENV1				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.			
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			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)			
SPT		>50					
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								
			1	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)				
ENV2								
D SPT		4						
				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)				
SPT		>50	2					
Bulk								
SPT		26	3					
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
			0	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					
Bulk CPT		58	4					

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
				Firm greyish brown slightly silty CLAY. (WEATHERED LONDON CLAY FORMATION)				
U100 Bulk				Firm becoming stiff dark grey slightly silty CLAY. Occasional blueish laminations. (LONDON CLAY FORMATION)				
D								
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)				

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)				
Bulk			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)

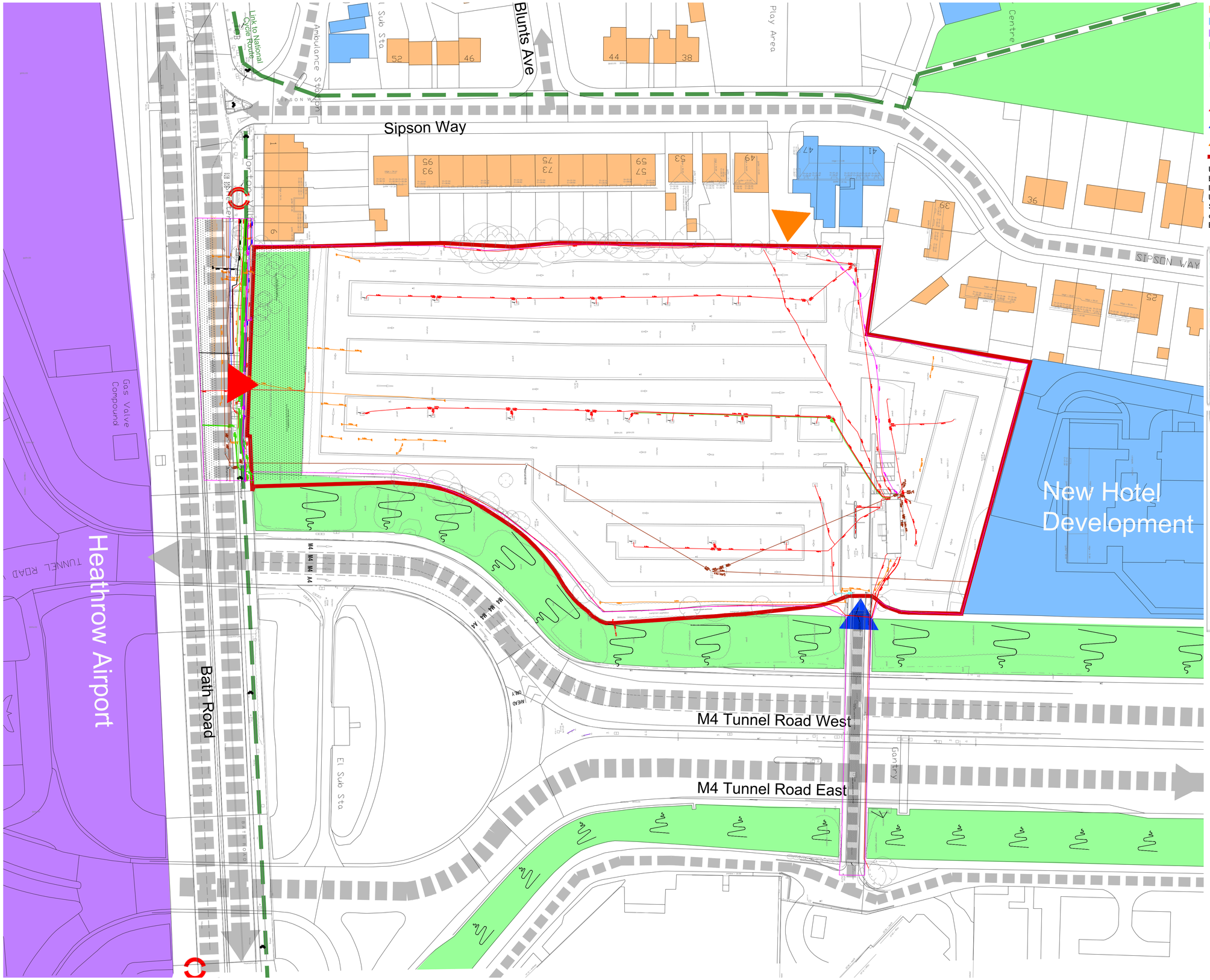
SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (%)	SPT N VALUE	DEPTH IN METERS	LITHOLOGIC DESCRIPTION	USCS	GRAPHIC LOG	WELL DIAGRAM	COMMENTS
ENV1			0	MADE GROUND: Compacted hardcore. Consists of dark brown brick, flint and Type 1 Gravel.				
				MADE GROUND: light brown silty sandy GRAVEL. Sand is fine to coarse,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

Appendix 2: Plan showing utilities and plan showing interpretation of TRC Geotechnical Investigations (Extract from Hydrock Phase 1 Desk Study Report July 2022)



Residential
Commercial / Others
Airport
Landscape / Green Area
Road Link
Cycle Route
Bus Stop
Proposed Site Entry
Existing Site Entry
Existing Emergency Access
Indicative Site Boundary

Underground Utility Information below based on Interlocks Surveys Limited, Underground Utility Survey, Dwg No. 210833 ugs, dated 21/12/21
Easements Zone TBC

NOTES:

Contractors must verify all dimensions on site before commencing any work or shop drawings. This drawing is not to be scaled. Use figured dimensions only.

Subject to statutory approvals and survey.

Building areas are liable to adjustment over the course of the design process due to the ongoing construction detailing developments.

Please note the information contained within this drawing is solely for the benefit of the employer and should not be relied upon by third parties.

The CDM hazard management procedures for the Chetwoods aspects of the design of this project are to be found on the "Chetwoods - Hazard Analysis and Design Risk Assessment" and/or drawings. The full project design teams comprehensive set of hazard management procedures are available from the Principle Designer appointed for the project.

Notes:
Please note Title Plans have been scaled using Ordnance Survey features which may have altered over time. Complete accuracy cannot be guaranteed without further on-site survey.

Any dimensions given are to be confirmed with site measure.

NB.
- **SUBJECT TO SURVEYS, CONSTRAINTS & PLANNING.**
- **LAYOUT TO BE TRACKED.**
- **RED LINE INDICATIVE ONLY.**

North

0m 5m 10m 15m 20m 25m

Rev	Revision Description	Date	Author/ Reviewer
P2	Emergency access added	23/05/22	RC/TC
P1	First Issue	16/05/22	RC/TC

PRELIMINARY

32 Frederick Street,
Birmingham, B1 3HH
+44 (0)121 234 7500
www.chetwoods.com

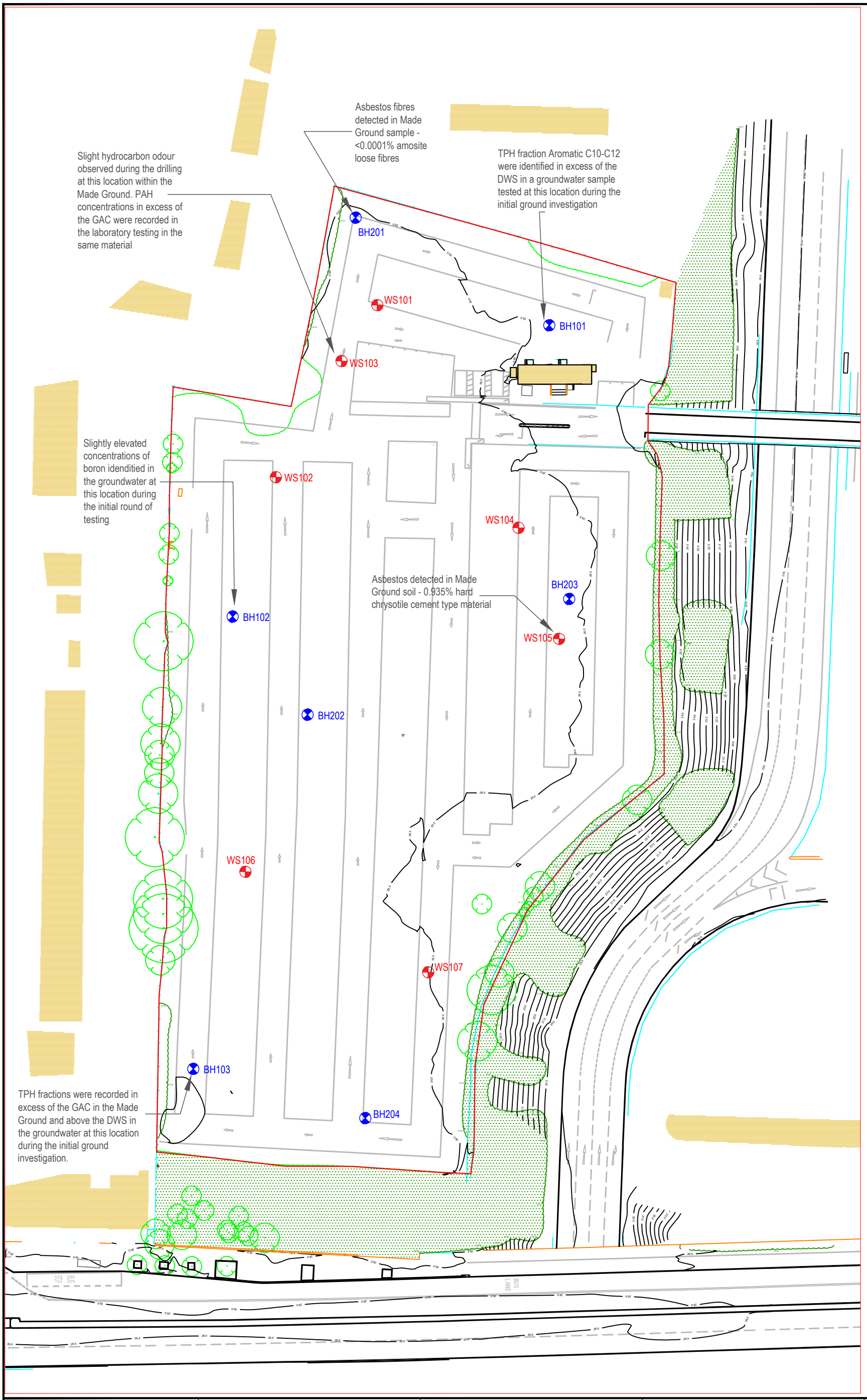
Project
Aprirose NCP Flightpath Heathrow

Client
aprirose | real e state investment

Drawing Title
Site Constraints Plan

Scale	Size	Drawn	Checked	Date
1:500	A1	RC	TC	16/05/22

Project	Originator	Zone	Level	Type	Role	Number	Rev.
5110	CA	00	00	DR	A	00058	P2



Abbreviations:

- GAC - Generic Acceptance Criteria
- DWS - Drinking Water Standards
- PAH - polycyclic aromatic hydrocarbon
- TPH - total petroleum hydrocarbon

Notes:

Groundwater contamination was discounted and attributed to unsuitable groundwater sampling techniques by TRC. A second round of sampling was undertaken which encountered no hydrocarbon concentrations in exceedance of the DWS. Further monitoring and sampling was recommended.

KEY

- Historical TRC (2021) Window Sample Borehole
- Historical TRC (2021) Cable Percussion Borehole
- Red line boundary

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:
Interlocks Surveys. December 2021. 'Topographical Survey. Bridge Point Heathrow', Drawing Number: 210833 2D sheet 1 to 4, Scale 1:200 at AO, produced for Bridge Industrial.

TRC. November 2021. 'NCP Flightpath, Heathrow. Phase II Geo-Environmental Site Assessment with Supplementary Groundwater Investigation', Reference: 460366.0001.0000, produced for Bridge Industrial.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	RO	25/05/22	AL	25/05/22	AL	25/05/22

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: Aprirose Real Estate Investment

PROJECT: NCP Flightpath Heathrow

TITLE: PREVIOUS GROUND INVESTIGATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
23795	1:750

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 23795-HYD-XX-XX-DR-GE-0002

REVISION: P1

MAKING
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