

# ARCHAEOLOGICAL DESK BASED ASSESSMENT

Campus East, College Way, Welwyn Garden City, AL8, Hertfordshire

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## ARCHAEOLOGICAL DESK BASED ASSESSMENT

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## EXECUTIVE SUMMARY

- The study site has been assessed for its below ground archaeological potential.
- In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site is not located within an Area of Archaeological Significance. The south western part of the site does lie within the Welwyn Garden City Conservation Area.
- The Study Site has a low potential to contain archaeological remains of all periods. Any remains that might survive are likely to be of local (low significance).
- The development proposals can be considered unlikely to have a substantial negative impact or cause significant harm to the archaeological resource of the site.
- In the event that the Local Planning Authority requests further archaeological mitigation, it is recommended that any such mitigation could follow the granting of planning consent secured by an appropriately worded archaeological planning condition.

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# 1 INTRODUCTION AND SCOPE OF STUDY

- 1.1 This below ground archaeological desk-based assessment has been researched by Alex Slater and prepared by Craig Halsey of RPS on behalf of the client, Bellway Homes Limited (North London).
- 1.2 The subject of this assessment, also known as the study site, is the site of Campus East, College Way, Welwyn Garden City, AL8, Hertfordshire (Fig 1). The site is centred on TL 23992 13321 and covers an area approximately 2.15 hectares.
- 1.3 In accordance with central and local 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), Bellway Homes Limited (North London) has commissioned RPS to undertake this below ground archaeological desk based assessment.
- 1.4 In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site is not located within an Area of Archaeological Significance. The south western part of the site does lie within the Welwyn Garden City Conservation Area.
- 1.5 This desk-based assessment comprises an examination of evidence on the Hertfordshire County Council Historic Environment Record (HER) and other sources, together with the results of a comprehensive historic map regression exercise.
- 1.6 This document draws together the available archaeological, topographic and land-use information in order to clarify the archaeological potential of the site and to consider the need for design, civil engineering, and archaeological solutions to the archaeological potential 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), which was most recently updated in July 2021. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014 and has since been periodically updated.  
(<https://www.gov.uk/government/publications/national-planning-policy-framework--2>)
- 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 194 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 *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 (for heritage policy)* 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.

## Local Planning Policy

- 2.14 Welwyn Hatfield Borough Council adopted their Local Plan in 2005, and in 2008 a number of policies relating to the protection of archaeological remains were saved.

### **POLICY R29 - ARCHAEOLOGY**

**WHERE A PROPOSAL FOR DEVELOPMENT MAY AFFECT REMAINS OF ARCHAEOLOGICAL SIGNIFICANCE, OR MAY BE SITED IN AN AREA OF ARCHAEOLOGICAL POTENTIAL, DEVELOPERS WILL BE REQUIRED TO UNDERTAKE AN ARCHAEOLOGICAL ASSESSMENT, IF NECESSARY WITH A FIELD EVALUATION, AND TO SUBMIT A REPORT ON THE FINDINGS TO THE LOCAL PLANNING AUTHORITY, BEFORE AN APPLICATION IS DETERMINED.**

**PLANNING PERMISSION WILL NOT BE GRANTED FOR DEVELOPMENT WHICH ADVERSELY AFFECTS THE SITE OR SETTING OF SCHEDULED ANCIENT MONUMENTS, OR OTHER NATIONALLY IMPORTANT SITES AND MONUMENTS. WHERE DEVELOPMENT PROPOSALS AFFECT SITES AND MONUMENTS OF LESS THAN NATIONAL IMPORTANCE, THE COUNCIL WILL SEEK PRESERVATION IN SITU OF REMAINS. IN CASES WHERE THIS IS NEITHER FEASIBLE, NOR MERITED, PLANNING**

**PERMISSION MAY BE GRANTED, SUBJECT TO CONDITIONS REQUIRING ADEQUATE PROVISION BEING MADE FOR EXCAVATION AND RECORDING.**

**WHEN PLANNING PERMISSION IS GRANTED FOR DEVELOPMENT THAT WOULD AFFECT ARCHAEOLOGICAL REMAINS, TAKING INTO ACCOUNT THE IMPORTANCE OF THE REMAINS, CONDITIONS WILL BE IMPOSED TO ENSURE THAT THE REMAINS ARE PROPERLY RECORDED, THE RESULTS ANALYSED AND PUBLISHED AND WHERE PRACTICABLE, THE MANAGEMENT OF ARCHAEOLOGICAL SITES AND THEIR SETTINGS IS ENHANCED.**

- 2.15 In line with relevant planning policy and guidance, this desk-based assessment seeks to clarify the site's archaeological potential and the need or otherwise for additional mitigation measures.
- 2.16 In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site does not lie within a Conservation Area. An archaeological priority area (AAS 26), associated with the findings of a Late Iron Age/Roman ditch (MHT199; TL 2364 1279) is located c 500m to the south of the site. Another area of archaeological significance (AAS27), associated with a number of Roman and Iron Age findings (MHT2805, MHT2802, MHT2803) is located c 600m to the north west of the site.

## 3 GEOLOGY AND TOPOGRAPHY

### Geology

- 3.1 The solid geology underlying the Study Site consists of the Lewes Nodular Chalk and Seaford Chalk Formation of Cretaceous age. The solid geology is capped by superficial deposits consisting of the Lowestoft Formation, a diamicton glacial till deposit, deposited during the Anglian Glaciation approximately 500,000 years ago. Further to the east, beyond the site boundary, sand and gravel deposits associated with the Kesgrave Catchment Subgroup are recorded by the BGS. These Pleistocene Age deposits are fluvial in origin and relate to an ancestral course of the River Thames (BGS Online).
- 3.2 A geotechnical survey undertaken on the site in 2021 (EPS, 2021; Report reference – UK21.5579) demonstrated that across the majority of the site the made ground measured between 0.4m to 0.6m in thickness, although two boreholes recorded thicker made ground deposits measuring between 2.30m (WS2), to 4.30m in thickness (BH2). The made ground was found to overly a gravelly sandy silty clay associated with the Lowestoft Formation. The borehole logs are presented in Appendix 1.

### Topography

- 3.3 The existing ground level occurs at approximately 90m to 92m above ordnance datum (AOD) and slopes gently from north to south.
- 3.4 No naturally occurring watercourses are located near to the Study Site, although a possible drainage ditch borders the site to the north.

## 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 -	1,800 BC
Bronze Age	1,800 -	600 BC
Iron Age	600 -	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 This chapter reviews the available archaeological evidence for the study site and the archaeological/historical background of the general area, and, in accordance with NPPF, considers the potential for any as yet to be discovered archaeological evidence on the study site.
- 4.2 What follows comprises a review of known archaeological assets within a 1km radius of the study site (Fig. 2a), also referred to as the study area, held on the Hertfordshire Historic Environment Record (HER), together with a historic map regression exercise charting the development of the study area from the 18th century onwards until the present day.
- 4.3 Chapter 5 subsequently considers the site conditions and whether the proposed development will impact the theoretical archaeological potential identified below.

### Previous archaeological investigations

- 4.4 A number of archaeological investigations have been undertaken within the vicinity of the site. A summary is provided below.
- EHT8878 – Archaeological evaluation undertaken in 2021 at Tewin Road Depot, c 550m east of the site. The site had been heavily truncated by development in the 1960's and retained no archaeological potential.
  - EHT5276 – Watching brief at Tesco, Bessemer Road, c 180m south east of the site. No archaeological remains were observed.
  - EHT7901 – Evaluation at the former Argos Distribution depot on Bessemer Road c 180m south east of the site. No archaeological remains were noted.

- EHT4150 – Evaluation at Longcroft Lane, c 930m south west of the site. No archaeological remains were noted.

### Prehistoric

- 4.5 Finds and archaeological remains dating from the Palaeolithic to Bronze Age periods are rare within the study area and generally limited to chance spot finds.
- 4.6 A Neolithic 'leaf' arrow was recovered near the Quadrangle in the 1930's (MHT2113; TL234 132) c 500m to the west of the site.
- 4.7 Another find spot occurs c 900 to the northwest of site at Sherrards Park Wood (MHT 13665; TL 23308 14000). Here, an assemblage of Neolithic flint work, consisting of an axe head, several scrapers and a blade were found in association with a possible pottery fragment. All the finds were retrieved from topsoil.
- 4.8 Due to a scarcity of finds and features dating from the Palaeolithic to Bronze Age within the Study Area, the Study Site can be regarded as holding low potential for evidence of archaeological remains dating to these periods.

### Iron Age Roman

- 4.9 Evidence of activity dating to the later Iron Age period is slightly more numerous than the preceding prehistoric periods, and is often found in association with early Roman activity. During the excavation of a sewer trench in 1928 for the Free Church Hall, Church Street, located c 530m to the south of the site (MHT199; TL 2364 1279), a segment of ditch measuring c 14m in length was encountered. Fragments of Beaulieu-Roman pot sherds, dating from the 1<sup>st</sup> to 2<sup>nd</sup> centuries, were retrieved along with charcoal, faunal remains and a bronze fibula. The area around Church Street, is now designated an Area of Archaeological Significance (AAS26).
- 4.10 From the rear garden of a property located at 3 Pently Close, c 875m to the north west of the site, Lockleys Archaeological Society investigated an Iron Age feature, measuring 2m across, which contained a mass of Late Iron Age pottery over a layer of charcoal and clay, which displayed evidence of intense burning.
- 4.11 Also, on Pently Close, within the rear garden of No. 5 (MHT1785; TL 2359 1418) a Roman cremation cemetery was identified. The cemetery consisted of at least seven burials with grave goods dating from the Late 1<sup>st</sup> to early 2<sup>nd</sup> centuries. The area around Pently Close is now designated an Area of Archaeological Significance (AAS27).
- 4.12 Roman finds consisting of an assemblage of Roman pottery, considerable quantities of daub, and a coin of Nero (54-68 AD) were recovered in 1938 on the east side of the railway line on Bessemer Road, c 350m to the east of the site (MHT1575; TL 2444 1337).
- 4.13 Roman pottery was also recovered during building works at Hyde Way/Breakwater Road, c 430m to the south east of the site.
- 4.14 The remainder of the Roman finds within the study area consist of find spots of Roman coins (MHT11763; TL2406 1373, MHT1574: TL 2310 1319).
- 4.15 Although the HER does record evidence of Roman activity in the study area, the activity is widely dispersed and consists largely of chance finds. With consideration of the available data the site is regarded as holding a low potential for evidence of archaeological remains dating from the Iron Age to Roman periods.



## Medieval

- 4.16 Near Peartree farm, located c 930m south of the site, lies the remains of a Medieval moated enclosure (MHT2615; TL 24195 12295). The moat is now infilled and grassed over, and has been retained as open space within a modern housing development. It is mapped as extant, water-filled, and apparently well-preserved on late 19th century OS maps, which also show a large pond to the north. This probably also survives, infilled, within the grassed area. The 1898 map shows a small pond-like extension to the eastern corner of the moat; pencilled additions showing the prospective widened line of Peartree Lane appear to show that the south corner of the moat may have been clipped by the widening. The moat is shown complete on the 1838 tithe map, although isolated in fields with no entrance or causeway, no building nearby and no road access.
- 4.17 In Sherrards Park Wood, located c 860m to the north west of the site, a series of linear banks are recorded. These banks, which measure up to 0.5m in height, are thought to be constructed to protect new plantations or coppices. It has also been postulated that the earthworks form an enclosure boundary delineating a former Medieval Park (MHT6202; TL 232 139). The location of Sherrards Park now forms a registered park and garden (DHT1694, MHT9598; TL 230 140).
- 4.18 Given the scarcity of Medieval remains recorded within the study area, the site can be regarded as holding a low archaeological potential for remains dating to the Medieval period.

## Post Medieval & Modern (including map regression exercise)

- 4.19 The Hertfordshire HER records many Post Medieval and Modern finds within the Study Area. Only those directly relevant to the Study Site will be discussed below.
- 4.20 Approximately 450m to the west of the site lies the Old Cottage, at 39 Bridge Street (MHT10873; TL 2342 1327). This timber framed 17th century cottage is thought to date from 1604. It comprises a two storey building with a gable end, brick chimney stack and tiled roof. It is shown on the 1838 tithe map, and the 1878 OS map, at the hamlet of Upper Handside. It currently holds Grade II listed status (Ref: 1101075).
- 4.21 Another extant 17th century farmhouse is noted at Digswell lodge Farm, located c 380m to the north of the site (MHT10875; TL 2402 1377). The house was built in the mid-17th century by Humphrey Shalcross for his daughter. Later it became a farmhouse, and in the late 20th century the building was extended for use as a conference centre. The original part is a square building of two storeys in red brick with a hipped tile roof, with a central chimney stack with the square shafts set diagonally. Timber framing has been retained inside, and the chimney stack, restored, has a brick oven incorporated in to it. The building currently holds a Grade II listed status (Ref: DHT9615, 1101079).
- 4.22 Just under 1km to the north of the site the HER notes the location of the landscaped park of Digswell House (MHT30630; TL 2386 1473). The landscaping of the park was designed by Capability Brown in 1771, and later redesigned by Humphrey Repton in the early 19th century. The newly formed Welwyn Garden City Company took over the early 19th century house and associated grounds in 1919. The park did not become part of the Garden City until after 1948, when some housing was built across the park, but the Brown and Repton landscapes can still be read today.
- 4.23 Approximately 340m to the north east of the site lies the location of a thoroughfare related to agricultural activity. This feature, known as 'sheep walk' is shown on the 1841 tithe map of the area, which depicts a regular pattern of fields, with a passage in the centre leading south west to an irregular area with two ponds. The passage, lined with trees, is marked on the 1881 OS map as

'Sheep Walk', a funnel leading from the surrounding fields into the area with the ponds. One of the ponds was contained within a wooded area, and the other in an open triangular field beyond. Organised paths from the entire surrounding landscape gave access to the Sheep Walk, which was 400m long, and led from Digswell Lodge Farm on the west side of the railway line. By 1898 this pattern had been reduced with the disappearance of several field boundaries, and the Sheep Walk itself had gone.

- 4.24 As evidenced by the HER entries noted above the site most probably lay within an agricultural landscape defined by Farm houses, enclosed field systems, with the formal gardens of Digswell House located to the northwest. However, by the mid-19<sup>th</sup> century the landscape saw substantial change due to the coming of the railways.
- 4.25 A road bridge, built of concrete and stone with an ornate stone parapet is noted on the HER at White Bridge, Digswell Road, located c 260m to the west of the site (MHT7152; TL 2374 1348). The bridge was constructed in 1860 to cross the Hatfield, Luton & Dunstable branch railway line, which opened in 1860 and closed in 1967. Hunters Bridge (MHT 5108; TL24033 13117), and Lyles Bridge (MHT5109; TL 24210 13741) are two other road bridges within the vicinity of the site constructed in the mid-19<sup>th</sup> century to support the railways.
- 4.26 The Hatfield, Luton & Dunstable railway (MHT9822; TL 1796 1580) began as an independent company, the Hertford & Welwyn Junction Railway, and underwent complex changes before it opened to traffic in 1860 between Welwyn Junction and Luton, with trains starting at Hatfield Station. In 1861 it was absorbed by the Great Northern. In Hertfordshire it follows the river Lea, and was eventually closed to passengers in 1965. The railway crosses the central part of the site (Figure 5).
- 4.27 In the Post Medieval period, cartographic sources are useful in illustrating the development of the Study Area. The earliest map of the study site dates from 1805 and shows the site located across two enclosed fields (Figure 3). The landscaped gardens of Digswell house are shown to the northwest.
- 4.28 The 1839 tithe map (Figure 4) describes the land parcels as follows.

Land Parcel	Landowner	Occupant	Description	Land Use/Cultivation
516	Earl Cowper	Mrs Stome	Pear Tree Field	Not provided
566	Marquess of Salisbury	Squires in Hand	Pear Tree Wood	Not provided

- 4.29 The 1881 OS map (Figure 5) shows substantial changes across the site with the Hatfield, Luton and Dunstable railway now depicted crossing the central part of the site. The London & North Eastern Railway is shown to the east of the site. The northern part of the site appears to be crossed by a trackway running east to west. This layout continues into the 20<sup>th</sup> century as depicted on the 1923 and 1938 OS map (Figure 6), but now the south western part of the site is covered with formal woodlands associated with the foundation of Welwyn Garden City in the early 1920's.
- 4.30 Approximately 100m to the west of the site lies the historic parks and gardens of Welwyn Garden City (MHT 9599; TL 235 126). Welwyn Garden City was the world's second Garden City, founded in 1920 by a private company under the guidance of Ebenezer Howard, the man responsible for the first at Letchworth. The architects and planners were Louis de Soissons and Frederic Osborn. Distinct commercial, civic and industrial zones were laid out surrounded by housing. Long straight vistas - The Parkway and Howards gate - incorporate ornamental open spaces in the middle of the town. The area is now designated a Local Registered Park and Garden (DHT1695).
- 4.31 There is little change to the site into the 1960's (Figure 8). However, possible earthworks/cuttings are shown occupying the central and northern parts of the site. These cuttings may be associated with railways workings and the excavation of material for ballast.

- 4.32 By 1974 (Figure 9) the existing carpark building had been constructed on the southern half of the site. The 1994 OS maps illustrates this carpark extending into the northern half of the site, with the railway no longer present (Figure 10). This layout continues to the present day (Figure 11, 12 & 13).
- 4.33 From the available data and historic mapping the site largely remained as open or wooded land until the coming of the railways in the 1860's. Therefore, the sites potential to contain remains dating to the post-medieval period can be regarded as low. Any remains present are likely to be associated with the railways and can be considered to be of local (low) significance.

### Historic Landscape Characterisation

- 4.34 The HLC notes that the site falls within a zone defined as 'Built-up Areas – Modern – Urban development (ref: HHT2691; type code: BUM-ba), which testifies to the sites location near to the founding core of Welwyn Garden City.

### Assessment of Significance (Designated Assets)

- 4.35 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.
- 4.36 In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site is not located within an Area of Archaeological Significance. The south western part of the site does lie within the Welwyn Garden City Conservation Area.

### Assessment of Significance (Non-Designated Assets)

- 4.37 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.

Period:	Identified Archaeological Potential	Identified Archaeological Significance
Prehistoric	Low	Low (Local)
Roman	Low	Low (Local)
Anglo-Saxon	Low	Low (Local)
Medieval	Low	Low (Local)
Post Medieval	High	Low (Local)

## 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 surface level carpark with lock-up garages. In the centre of the site is a two-storey structure that includes private garages with locked, roller shutter doors on the ground floor and additional (uncovered) parking facilities above. This structure is roughly rectangular in shape, and of brick construction. Three access ramps are present on the western elevation of this feature, with adjoining roads intersecting an adjacent areas of grass surfaced soft landscaping to the west. The car spaces are generally orientated north to south and east to west. Metal railings and grass verges separate selected rows, with a grid of large flood lights and pedestrian footpath borders also present.

### Proposed Development

- 5.2 The proposed development consists of a residential development of 313 dwellings (C3 use) divided into 5 blocks (Figure 15). Block A will have undercroft car parking (Figure 16) The foundations will be piled. New surface and foul water drainage is also proposed, and this will comprise three attenuation tanks excavated to a depth of c 1.6m bgl (Figure 17).

### Review of Potential Development Impacts on Designated & Undesignated Archaeological Assets

- 5.3 In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site is not located within an Area of Archaeological Significance. The south western part of the site does lie within the Welwyn Garden City Conservation Area.
- 5.4 The Study Site is considered to hold a low potential for any archaeological remains dating to all periods. Any remains, if present, are likely to be of low (local) significance. Given the shallow depth of made ground across the site (c 0.4-0.6m as indicated by the geotechnical survey) excavations for pile caps, attenuation tanks, associated drainage and the undercroft car park are likely to remove any archaeology present in their entirety.
- 5.5 The development of the railways, with evidence of possible cuttings present on the northern part of the site, in conjunction with the construction of the existing car park is likely to have had a severe and cumulative impact on any below ground archaeological remains.
- 5.6 In light of the conclusions outlined in this report the development proposals can be considered unlikely to have a substantial negative impact or cause significant harm to the archaeological resource of the site.
- 5.7 In the event that the Local Planning Authority requests further archaeological mitigation, it is recommended that any such mitigation could follow the granting of planning consent secured by an appropriately worded archaeological planning condition.

## 6 SUMMARY AND CONCLUSIONS

- 6.1 The study site has been assessed for its below ground archaeological potential.
- 6.2 In terms of relevant designated heritage assets, no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Historic Battlefield, or Historic Wreck sites occur within the Study Area. The site is not located within an Area of Archaeological Significance. The south western part of the site does lie within the Welwyn Garden City Conservation Area.
- 6.3 The Study Site has a low potential to contain archaeological remains of all periods. Any remains that might survive are likely to be of local (low significance).
- 6.4 The development proposals can be considered unlikely to have a substantial negative impact or cause significant harm to the archaeological resource of the site.
- 6.5 In the event that the Local Planning Authority requests further archaeological mitigation, it is recommended that any such mitigation could follow the granting of planning consent secured by an appropriately worded archaeological planning condition.



## Sources Consulted

### General

British Library  
Surrey Historic Environment Record  
Surrey Record Office  
The National Archive

### Internet

British Geological Survey – <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>  
British History Online – <http://www.british-history.ac.uk/>  
Domesday Online – <http://www.domesdaybook.co.uk/>  
Historic England: The National Heritage List for England <http://www.historicengland.org.uk/listing/the-list/>  
National Planning Policy Framework – <https://www.gov.uk/government/publications/national-planning-policy-framework--2>  
Portable Antiquities Scheme – [www.finds.org.uk](http://www.finds.org.uk)  
Bouchard, B. 2012. The Silver Birches. [Silver Birches – Epsom & Ewell History Explorer \(eehe.org.uk\)](http://www.eehe.org.uk)

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Historic England, Historic Environment Good Practice Advice in Planning: 3 The Setting of Heritage Assets December 2017 unpublished document  
Historic England, 2015, Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide  
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Ministry of Housing, Communities & Local Government Planning practice guidance, 2019, Historic environment

## Cartographic

1805 Hatfield Map

1839 Tithe Map

1881 OS Map

1923 OS Map (1:2,500)

1938 OS Map (1: 2,500)

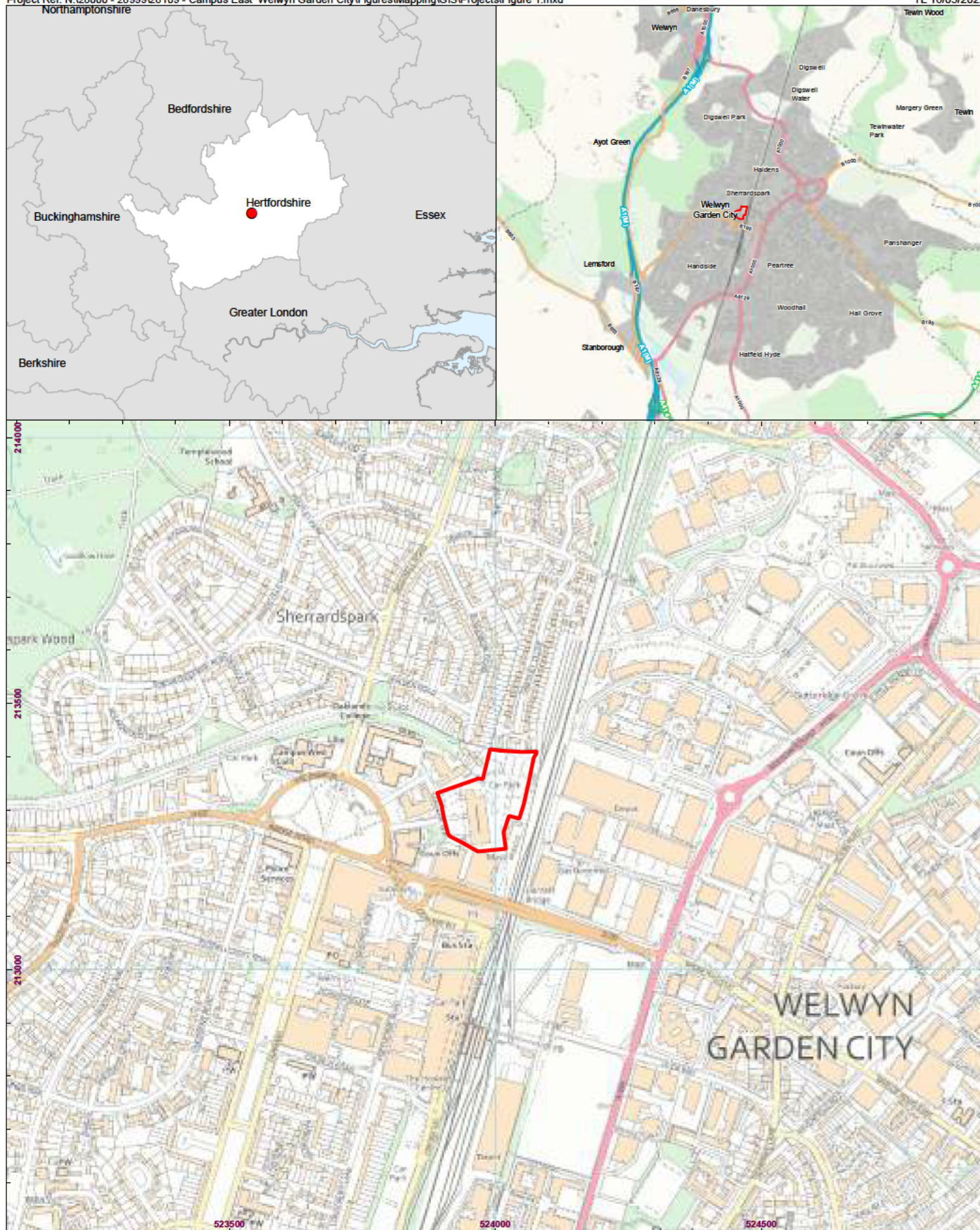
1961 OS Map (1:2,500)

1974 OS Map (1:2,500)

1994 OS Map (1:2,500)

## FIGURES





 Site Boundary

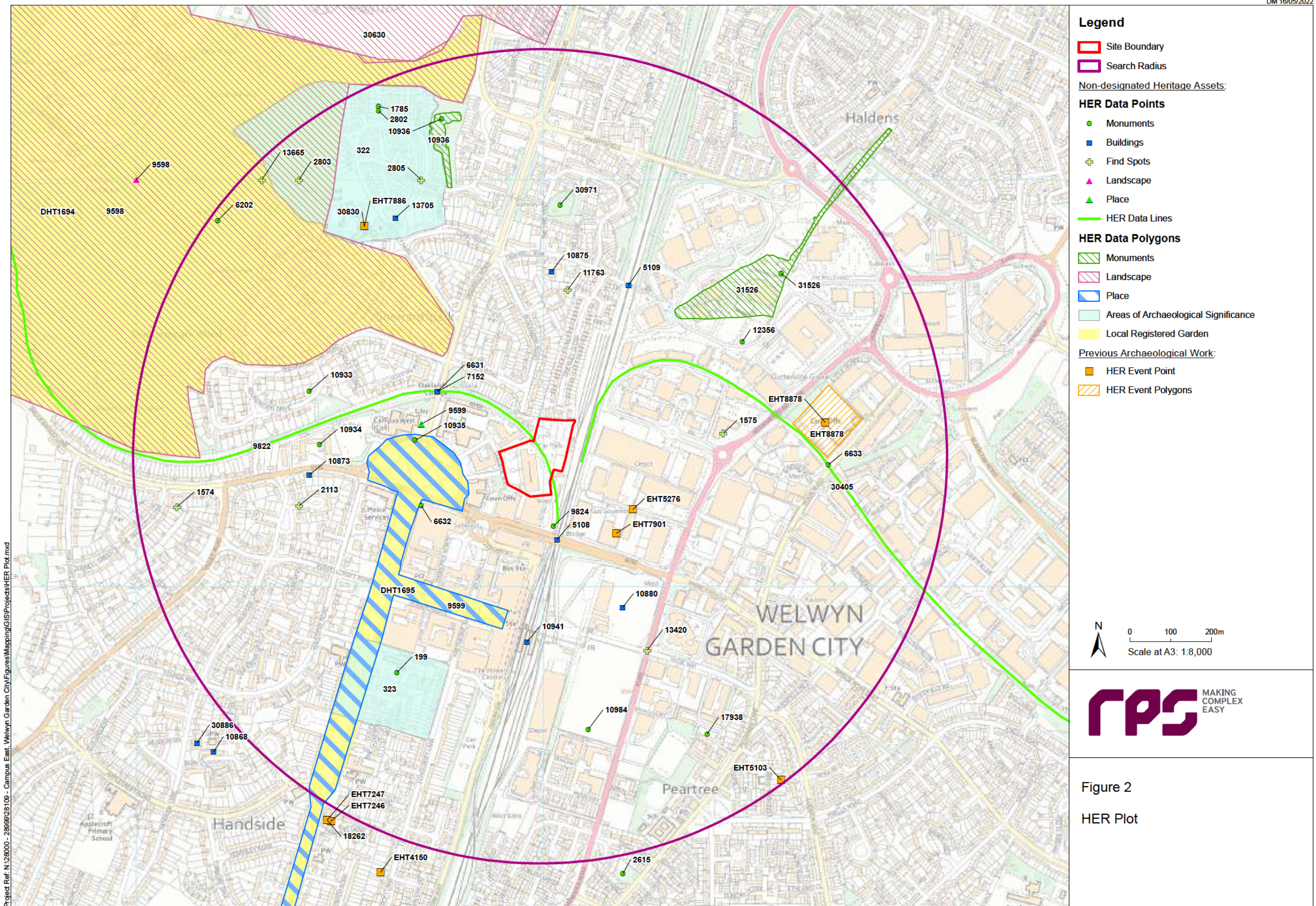


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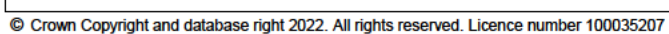
**rps** MAKING  
COMPLEX  
EASY

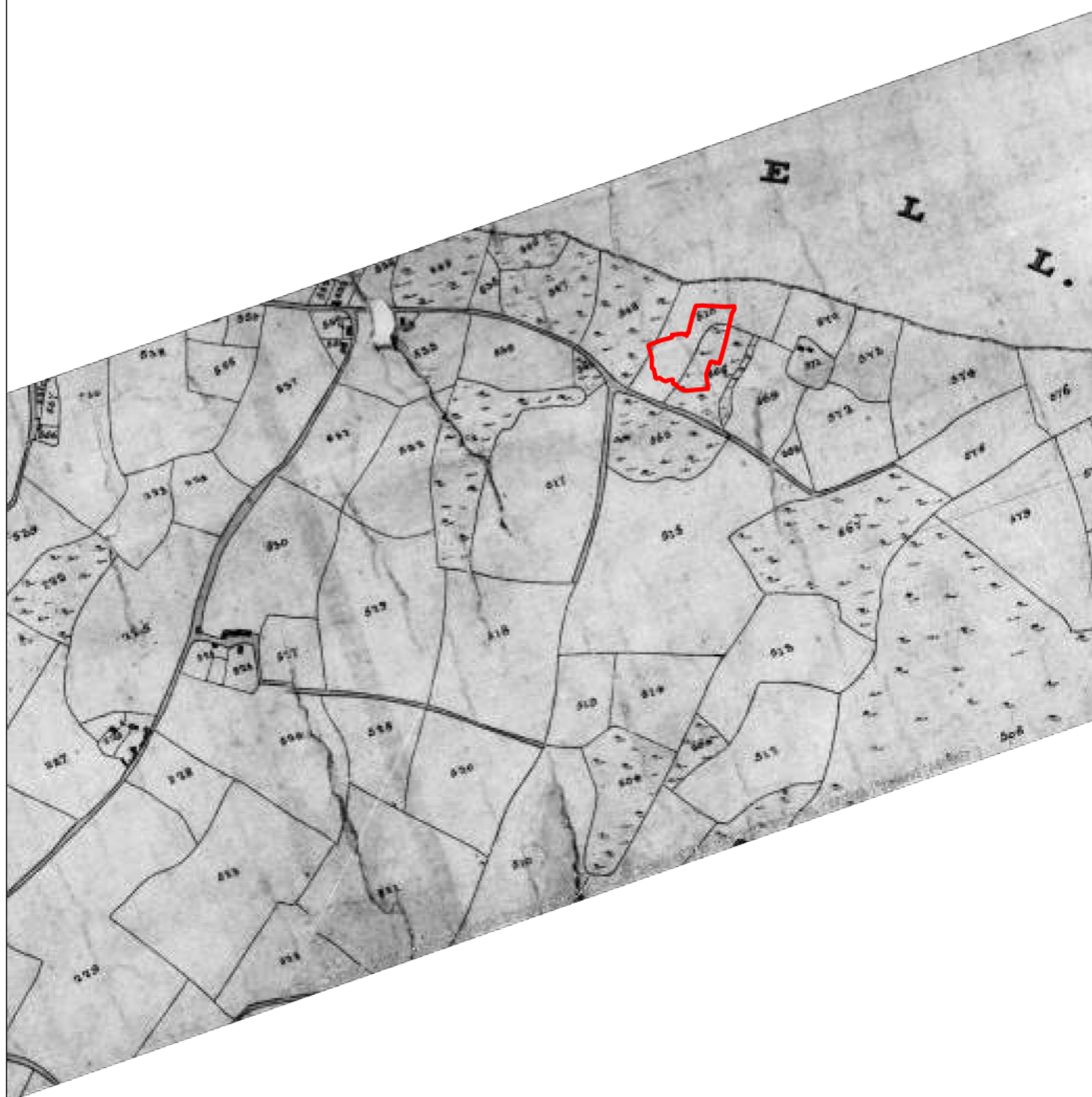
Figure 1  
Site Location











Approximate Site Boundary



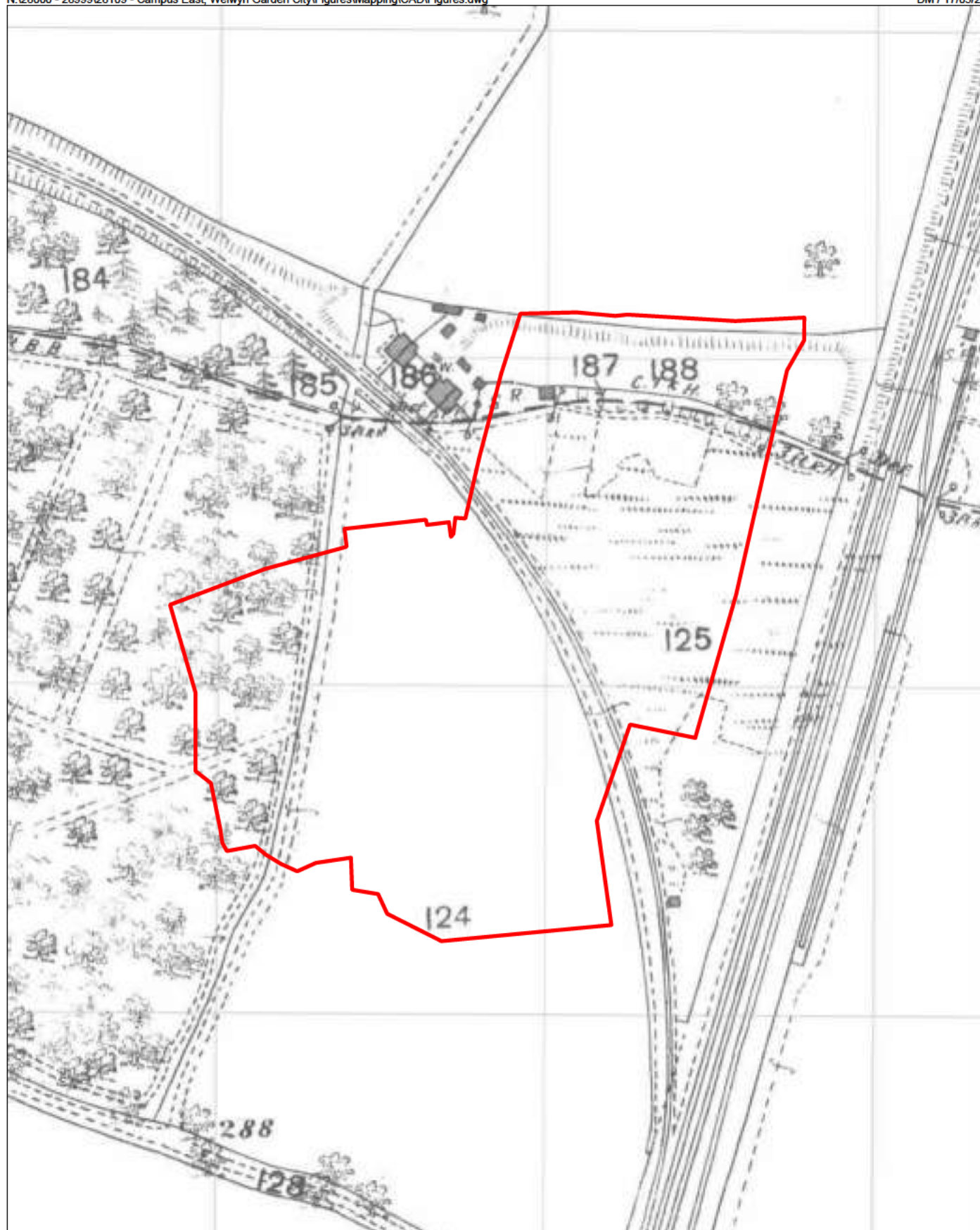
Not to Scale  
Illustrative Only



Figure 4

1839 Tithe Map





 Site Boundary

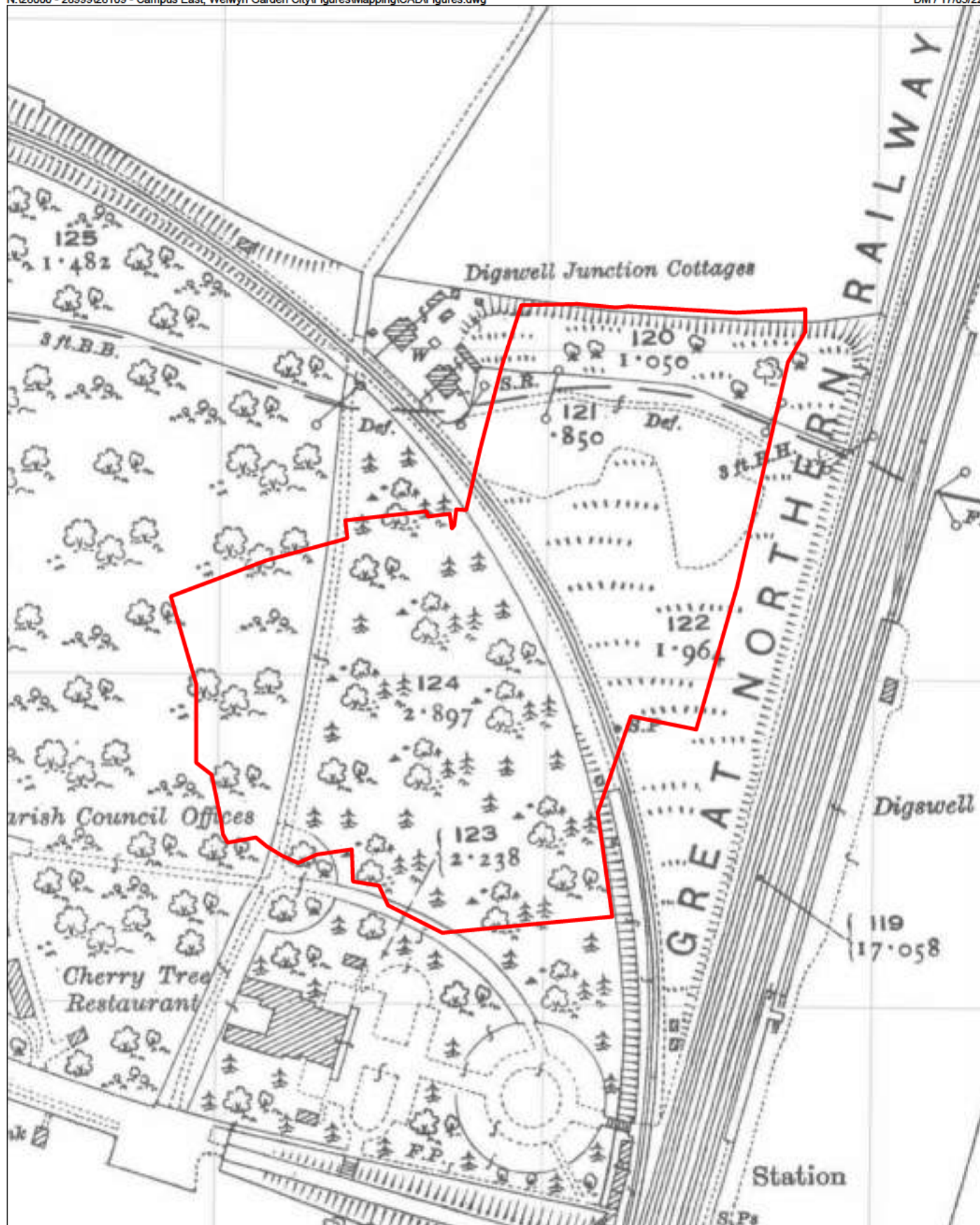


0 25 50m  
Scale at A4: 1:2,500



Figure 5

1881 Ordnance Survey



 Site Boundary



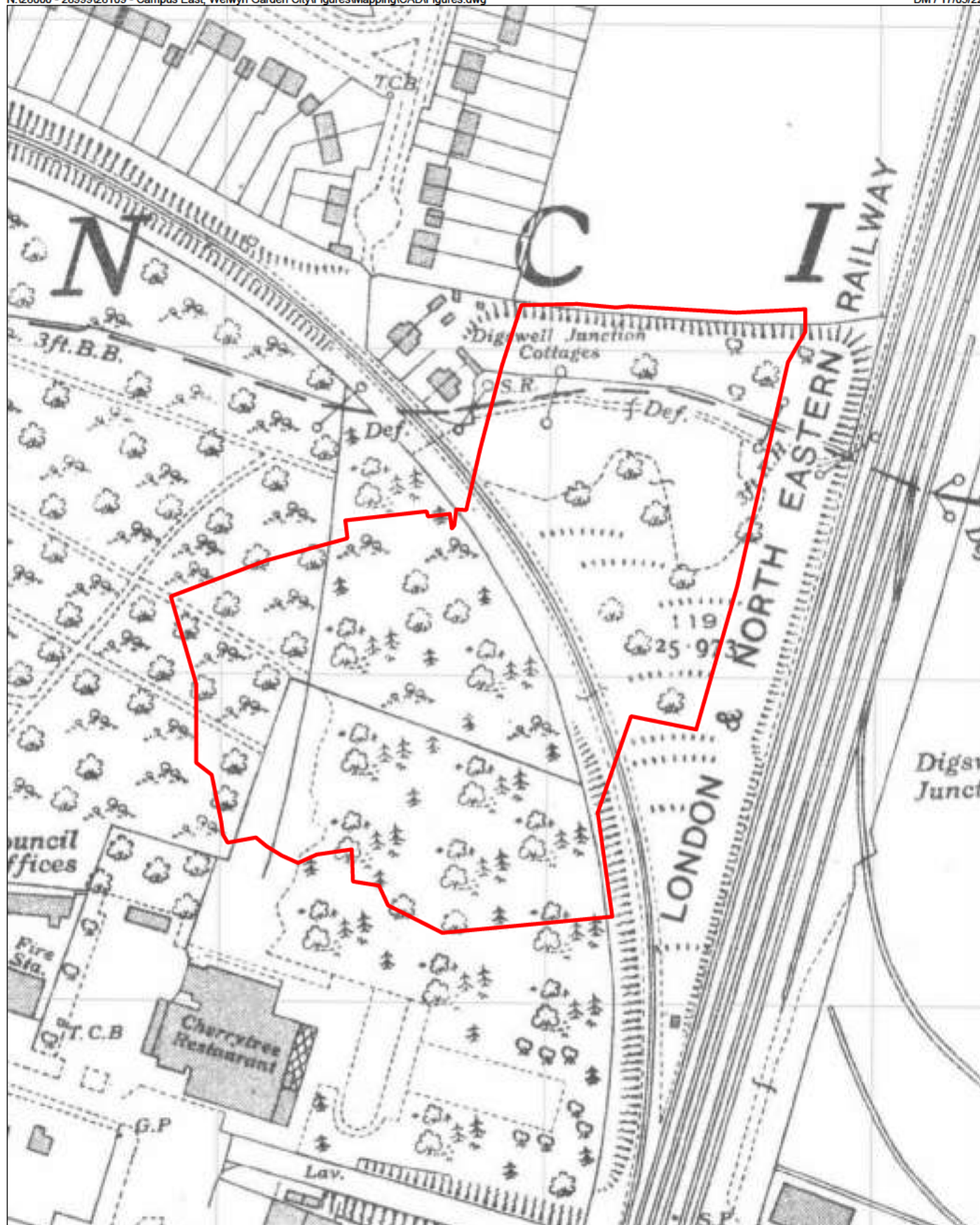
0 25 50m  
Scale at A4: 1:2,500



Figure 6

1923 Ordnance Survey





 Site Boundary

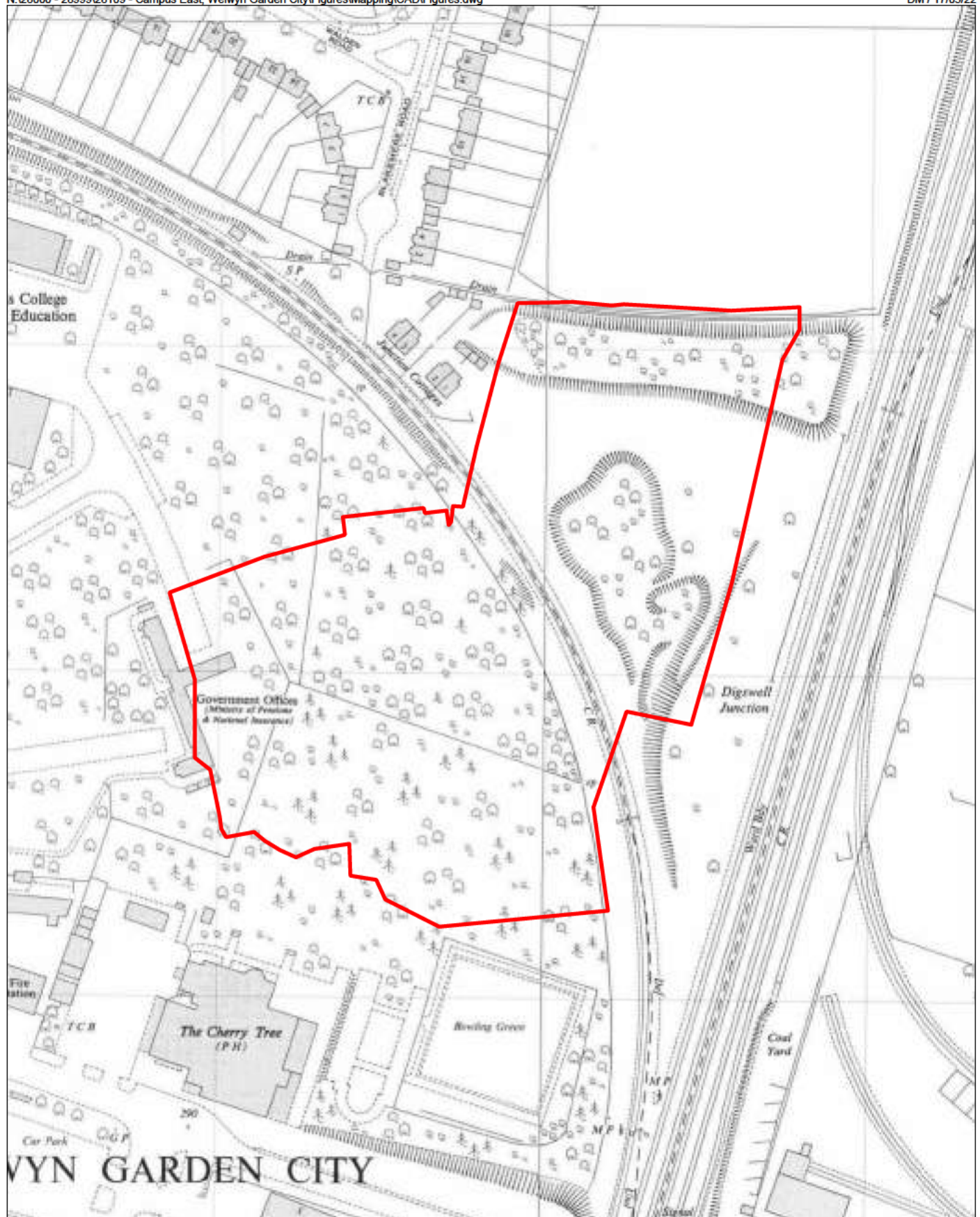


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Scale at A4: 1:2,500



Figure 7

1938 Ordnance Survey



 Site Boundary



0 25 50m  
Scale at A4: 1:2,500

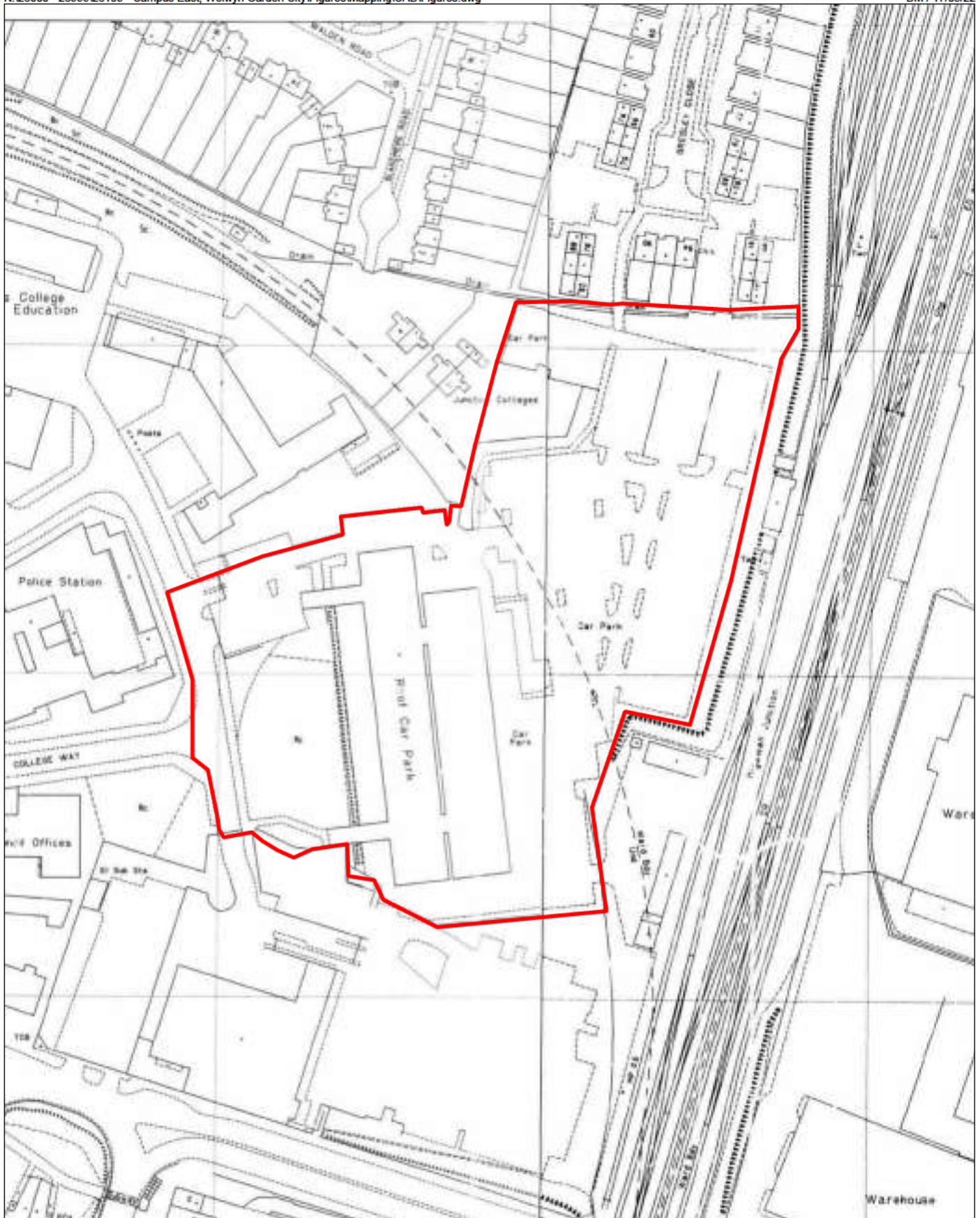


Figure 8

1961 Ordnance Survey







 Site Boundary



0 25 50m  
Scale at A4: 1:2,500

**rps** MAKING  
COMPLEX  
EASY

Figure 10

1994 Ordnance Survey





 Site Boundary



0 25 50m  
Scale at A4: 1:2,500



Figure 11

2000 Google Earth Aerial Image





 Site Boundary



0 25 50m  
Scale at A4: 1:2,500



Figure 12

2006 Google Earth Aerial Image





 Site Boundary

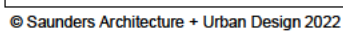


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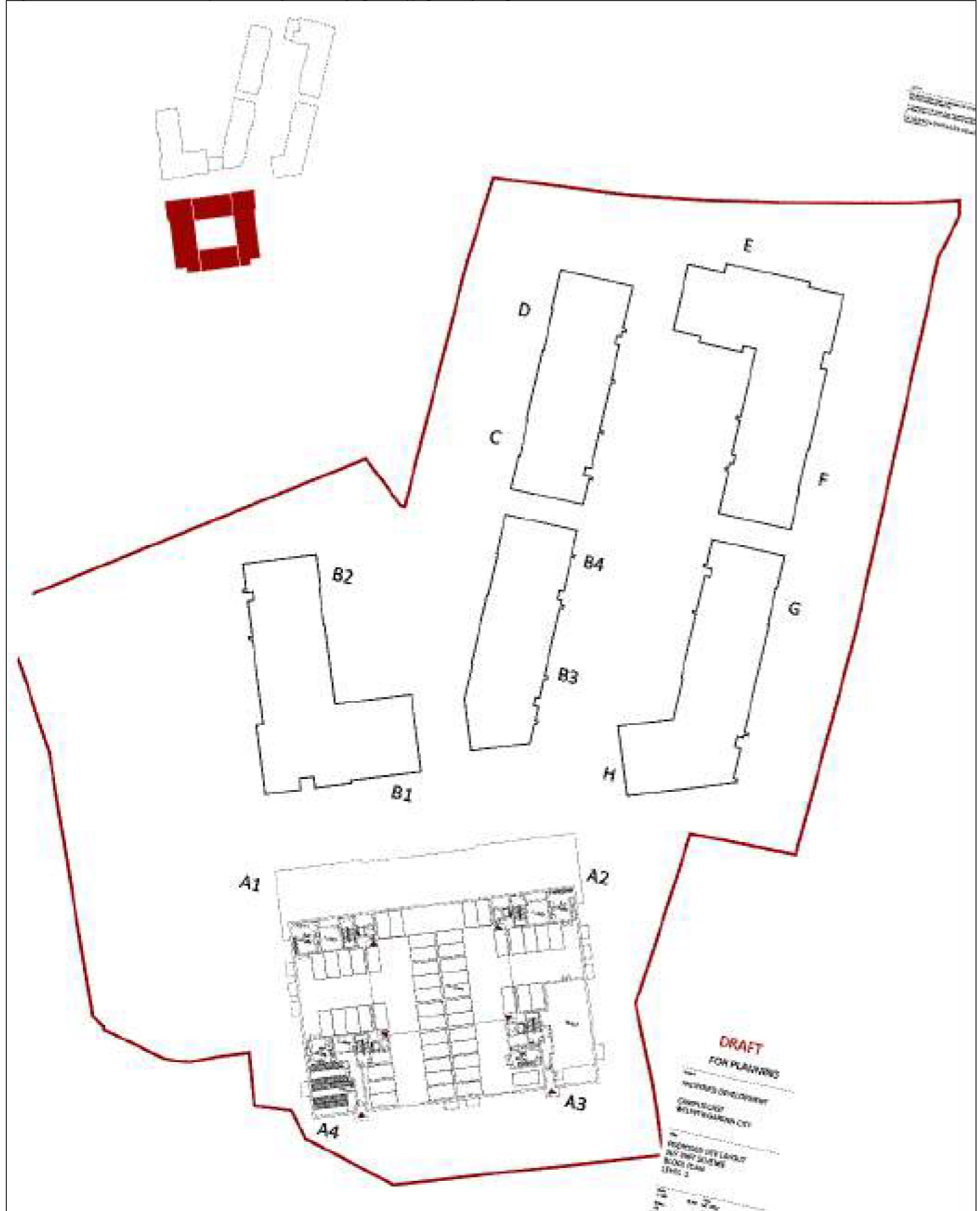


Figure 13

2020 Google Earth Aerial Image







 Site Boundary



0 8 16 24m  
Scale at A4: 1:1,000

**rps** MAKING  
COMPLEX  
EASY

Figure 15

Plan of proposed undercroft car  
park in Block A



Figure 16

Plan of proposed drainage and attenuation tanks.



## APPENDICES

**Appendix 1**

**Geotechnical Logs**



# Borehole Log

Borehole No.

**BH1**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22593.18 - 6765048.78

Hole Type  
CP

Location: College Way, Hertfordshire, AL8 6UN

Level: 93.00

Scale  
1:125

Client: Ardent Consulting

Dates: 04/10/2021 - 04/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	D		0.10	92.90		ASPHALT	1
		0.90	D		0.35	92.65		MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		1.20	U		0.90	92.10		MADE GROUND: Yellowish red slightly gravelly sandy silty CLAY	2
		1.70	D					Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	
		2.00	D	N=13 (3,3/3,3,3,4)					3
		2.00	D						
		3.00	U						4
		3.45	D						
		4.00	D						5
		4.00	D	N=19 (3,4/4,4,5,6)					
		5.00	U						6
		5.45	D						
		6.00	D						7
		6.50	D	N=22 (4,4/5,5,6,6)					
		6.50	D						8
		7.50	D						
		8.00	U						9
		8.45	D						
		9.00	D						10
		9.50	D	N=26 (4,5/6,6,7,7)	9.40	83.60		Medium dense black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	
		9.50	D						11
		10.50	D						
		11.00	D	N=6 (2,1/2,2,1,1)					12
		11.00	D						
		11.70	B						13
		12.50	B	N=10 (6,7/3,3,2,2)	12.70	80.30		Structureless CHALK recovered as <10% intact gravel in a white slightly clayey sandy silty matrix representative of a Dm (matrix dominated) grade material (LESE)	
		12.50	D						14
		13.10	D						
		13.30	B						15
		14.00	D	N=8 (1,1/2,2,2,2)					
		14.00	D						16
		15.00	D						
		15.50	D	N=9 (1,2/3,2,2,2)					17
		15.50	D						
		16.50	D						18
		17.00	D	N=12 (2,2/2,3,4,3)					
		17.00	D						19
		18.00	D						
		18.50	D						20
		18.50	D	N=16 (2,2/4,4,4,4)					
		19.30	B						21
		20.00	D	N=20 (3,4/4,5,5,6)					
		20.00	D						22
		21.00	D						
		21.50	D	N=22 (4,4/5,5,5,7)					23
		21.50	D						
		22.50	D						24
		23.00	D	N=28 (4,3/6,6,8,8)					
		23.00	D						25
		23.80	B						
		24.50	D	N=27 (4,4/5,7,7,8)					26
		24.50	D		25.00	68.00		End of borehole at 25.00 m	

## Remarks

LOFT = Lowestoft Formation

LESE = Lewes Nodular &amp; Seaford Chalk Formation

Groundwater not encountered





# Borehole Log

Borehole No.

**BH2**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22522.27 - 6764916.63

Hole Type  
CP

Location: College Way, Hertfordshire, AL8 6UN

Level: 91.00

Scale  
1:125

Client: Ardent Consulting

Dates: 05/10/2021 - 06/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.40	D		0.10	90.90		ASPHALT	1
		0.90	D		0.30	90.70		MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		1.20	B					MADE GROUND: Dark grey slightly gravelly sandy silty CLAY with asphalt and brick fragments	2
		1.20		N=7 (2,1/2,2,1,2)					
		2.00	B						
		2.00		N=6 (1,1/1,2,1,2)					
		3.00	B		2.90	88.10		MADE GROUND: Dark grey slightly clayey sandy silty GRAVEL with asphalt and brick fragments	3
		3.00		N=6 (2,2/1,2,1,2)					
		4.00	B						4
		4.00		N=52 (4,6/8,8,17,19)	4.30	86.70			
		4.70	D						
		5.00	B		5.00	86.00			
		5.00		36 (18,24/36 for 75mm)					5
		6.50	B						
		6.50		31 (21,23/31 for 75mm)					
		8.00	B						
		8.00		N=30 (7,9/8,8,6,8)					6
		9.50	B						
		9.50		N=28 (5,7/7,5,8,8)	9.70	81.30			
		10.30	D						
		11.00	D						7
		11.00		N=8 (2,1/2,1,2,3)					
		11.80	B						
		12.50	D						
		12.50		N=6 (1,2/1,1,2,2)					8
		13.50	D						
		14.00	D						
		14.00		N=7 (1,2/1,2,2,2)					
		15.00	D						9
		15.50	D						
		15.50		N=7 (1,2/2,1,1,3)					
		16.50	D						
		17.00	D						10
		17.00		N=8 (1,2/2,2,2,2)					
		17.80	B						
		18.50	D						
		18.50		N=9 (2,2/2,2,3,2)					11
		19.50	D						
		20.00	D						
		20.00		N=8 (3,4/2,2,2,2)					
		21.00	D						12
		21.50	D						
		21.50		N=9 (2,3/2,3,2,2)					
		22.50	D						
		23.00	D						13
		23.00		N=10 (5,3/2,2,3,3)					
		23.80	B						
		24.50	D						
		24.50		N=12 (3,2/3,2,3,4)	25.00	66.00			14

End of borehole at 25.00 m

## Remarks

LOFT = Lowestoft Formation

LESE = Lewes Nodular &amp; Seaford Chalk Formation

Groundwater not encountered





# Borehole Log

Borehole No.

**BH3**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22717.64 - 6764814.02

Hole Type  
CP

Location: College Way, Hertfordshire, AL8 6UN

Level: 90.00

Scale  
1:125

Client: Ardent Consulting

Dates: 07/10/2021 - 07/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D	N=34 (4,5/8,8,9,9)	0.40	89.60		MADE GROUND: Yellowish brown slightly gravelly sandy silty CLAY Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	1
		0.50	D						
		0.80	D						
		1.20	U						
		1.65	D						
		2.10	D						
		2.10			3.50	86.50		Dense black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	2
		3.00	U						
		3.45	D						
		4.00	B						
		4.00		N=64 (9,11/12,16,18,18)					
		5.00	B						
		5.00		N=33 (6,7/7,9,8,9)	10.20	79.80		Structureless CHALK recovered as <10% intact gravel in a white slightly clayey sandy silty matrix representative of a Dm (matrix dominated) grade material (LESE)	3
		6.50	B						
		6.50		N=49 (8,9/12,12,14,11)					
		8.00	B						
		8.00		N=53 (7,6/11,11,15,16)					
		9.50	B						
		9.50		N=27 (6,4/5,6,8,8)					
		10.20	D						
		11.00	D						
		11.00		N=13 (2,2/3,3,3,4)					
		11.70	B						
		12.50	D						
		12.50		N=13 (2,2/3,4,3,3)					
		13.50	D						
		14.00	D						
		14.00		N=11 (2,2/2,3,3,3)					
		15.10	D						
		15.50	D						
15.50		N=12 (3,2/2,3,4,3)							
16.40	B								
17.00	D								
17.00		N=13 (2,2/3,3,3,4)							
17.90	D								
18.50	D								
18.50		N=13 (2,3/2,3,4,4)							
19.60	D								
20.00	D								
20.00		N=37 (3,2/8,9,9,11)							
21.00	D								
21.50	D								
21.50		N=13 (3,2/3,3,3,4)							
22.50	D								
23.00	D								
23.00		N=15 (3,3/4,3,4,4)							
23.80	B								
24.50	D								
24.50		N=15 (3,4/3,4,4,4)	25.00	65.00	End of borehole at 25.00 m				

## Remarks

LOFT = Lowestoft Formation

LESE = Lewes Nodular &amp; Seaford Chalk Formation

Groundwater not encountered





# Borehole Log

Borehole No.

**WS1**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22505.13 - 6765027.53

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 04/10/2021 - 04/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.45	ES	N=20 (3,3/4,5,5,6)	0.10	90.90		ASPHALT	
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.60 - 0.80	D		0.45	90.55		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	
		1.00							
		1.60 - 1.80	D						
		2.60 - 2.80	D						
		3.60 - 3.80	D						
					4.00	87.00	End of borehole at 4.00 m		4

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered



# Borehole Log

Borehole No.

**WS2**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22529.95 - 6764980.37

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 92.00

Scale  
1:20

Client: Ardent Consulting

Dates: 04/10/2021 - 04/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.50	ES		0.10	91.90		ASPHALT	1
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.80 - 1.00	D		0.50	91.50		MADE GROUND: Yellowish brown slightly gravelly sandy silty CLAY with occasional dark grey organic pockets and rare decayed roots. Gravel is fine and medium angular and subangular chert and rare brick fragments	2
		1.80 - 2.00	D						
		2.80 - 3.00	D		2.30	89.70		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	3
		3.80 - 4.00	D		4.00	88.00		End of borehole at 4.00 m	4

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered





# Borehole Log

Borehole No.

**WS3**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22505.13 - 6764961.10

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 04/10/2021 - 04/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.60	ES		0.10	90.90		ASPHALT	
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.60 - 0.80	D		0.60	90.40			
		1.00		N=7 (1,1/2,1,2,2)				Firm yellowish brown slightly gravelly sandy silty CLAY with occasional dark grey mottling. Gravel is fine and medium angular and subangular chert and chalk (LOFT)	1
		1.60 - 1.80	D						
		2.00		N=9 (2,2/2,2,2,3)	2.00	89.00		Stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	2
		2.60 - 2.80	D						
		3.00		N=21 (4,6/4,5,5,7)					3
		3.60 - 3.80	D						
		4.00		N=26 (4,4/5,6,7,8)	4.00	87.00		End of borehole at 4.00 m	4

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered





# Borehole Log

Borehole No.

**WS4**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22565.13 - 6764951.02

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN



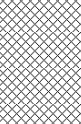
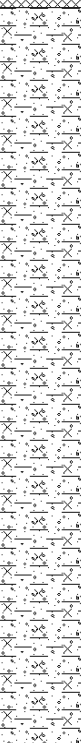
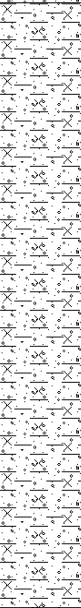
Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 04/10/2021 - 04/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.45	ES		0.10	90.90		ASPHALT	1
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.60 - 0.80	D		0.45	90.55		Firm olive slightly gravelly sandy silty CLAY with rare recently active roots. Gravel is fine to coarse subangular and subrounded chalk (LOFT)	2
		1.60 - 1.80	D						
		2.60 - 2.80	D		2.40	88.60		Stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	3
		3.00		N=15 (2,3/3,4,4,4)					
		3.60 - 3.80	D						4
		4.00		N=20 (2,3/4,5,5,6)	4.00	87.00		End of borehole at 4.00 m	

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered



# Borehole Log

Borehole No.

**WS5**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22633.14 - 6764932.66

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN












Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 05/10/2021 - 05/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.35	ES		0.10	90.90		ASPHALT	
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.50 - 0.70	D	N=16 (7,7/1,5,4,6)	0.35	90.65		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	1
		1.00							
		1.50 - 1.70	D	N=8 (1,2/2,2,2,2)					2
		2.00							
		2.50 - 2.70	D						
		3.00		N=25 (3,3/6,7,5,7)					3
		3.50 - 3.70	D						
		4.00		N=20 (3,3/5,5,5,5)	4.00	87.00		End of borehole at 4.00 m	4

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered



# Borehole Log

Borehole No.

**WS6**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22581.83 - 6764916.99

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 90.00

Scale  
1:20

Client: Ardent Consulting

Dates: 05/10/2021 - 05/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.60	ES		0.10	89.90		ASPHALT	
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.80 - 1.00	D		0.60	89.40		Firm yellowish brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subrounded chert (LOFT)	
		1.00		N=35 (5,7/8,10,8,9)	1.00	89.00		Dense black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	1
		1.50 - 1.70	D						
		2.00		N=56 (10,15/17,15,14,10)	2.00	88.00		End of borehole at 2.00 m	2
									3
									4

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 2.0m due to refusal at 2.0m





# Borehole Log

Borehole No.

**WS7**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22552.44 - 6764876.67

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN


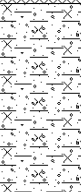
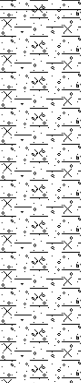
Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 05/10/2021 - 05/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.60	ES		0.10	90.90		ASPHALT	
								MADE GROUND: Yellowish brown slightly clayey sandy silty GRAVEL	
		0.60 - 0.80	D		0.50	90.50		Soft yellowish brown slightly gravelly sandy silty CLAY with occasional bluish grey mottling and rare decayed roots. Gravel is fine and medium angular to subrounded chalk and chert (LOFT)	
		1.00		N=4 (1,1/1,1,1,1)	1.00	90.00		Firm yellowish brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subrounded chert (LOFT)	1
		1.60 - 1.80	D						
		2.00		N=34 (8,10/9,8,8,9)	2.00	89.00		Stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	2
		2.60 - 2.80	D						
		3.00		N=57 (14,11/14,15,16,12)	3.00	88.00		End of borehole at 3.00 m	3
									4

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 3.0m due to refusal at 3.0m





# Borehole Log

Borehole No.

**WS8**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22562.90 - 6764850.56

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN



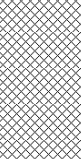
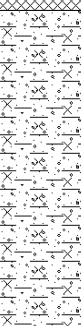
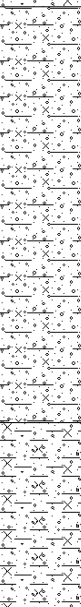

Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 05/10/2021 - 05/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.55	ES		0.10	90.90		ASPHALT	1
								MADE GROUND: Yellowish brown slightly gravelly SAND	
		0.70 - 0.90	D		0.55	90.45		Firm yellowish brown slightly gravelly sandy silty CLAY. Gravel is fine to coarse angular to subrounded chert (LOFT)	2
		1.00		N=31 (3,4/5,8,9,9)	1.40	89.60		Dense black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	
		1.70 - 1.90	D		2.00				3
		2.00		N=38 (6,8/8,8,10,12)	2.50	88.50		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	
		2.70 - 2.90	D		3.00	88.00		End of borehole at 3.00 m	4
		3.00		N=57 (9,16/15,17,15,10)					

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 3.0m due to refusal at 3.0m





# Borehole Log

Borehole No.

**WS9**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22571.36 - 6764820.68

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN



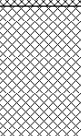
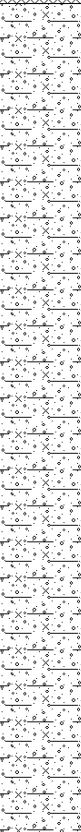
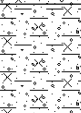
Level: 90.00

Scale  
1:20

Client: Ardent Consulting

Dates: 06/10/2021 - 06/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15 - 0.50	ES		0.15	89.85		ASPHALT	1
								MADE GROUND: Yellowish brown slightly gravelly SAND	
		0.70 - 0.90	D		0.50	89.50		Loose black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	2
		1.00		N=5 (1,2/1,1,1,2)					
		1.70 - 1.90	D						
		2.00		N=5 (2,1/1,1,1,2)					
		2.70 - 2.90	D		2.70	87.30		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	3
		3.00		N=56 (7,9/11,13,15,17)	3.00	87.00			
								End of borehole at 3.00 m	4

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 3.0m due to refusal at 3.0m





# Borehole Log

Borehole No.

**WS10**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22570.81 - 6764768.65

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 90.00

Scale  
1:20

Client: Ardent Consulting

Dates: 06/10/2021 - 06/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.15 - 0.30	ES		0.15	89.85		CONCRETE	1
					0.30	89.70		MADE GROUND: Dark grey slightly clayey sandy silty GRAVEL	
		0.80 - 1.00	D					Medium dense black brown and white angular to rounded slightly clayey sandy silty chert and quartzite GRAVEL. Sand is orangish and yellowish brown (LOFT)	
		1.00		N=20 (5,7/4,5,5,6)					
		1.80 - 2.00	D		1.80	88.20		Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	2
		2.00		N=47 (8,9/10,12,12,13)					
		2.80 - 3.00	D						
		3.00		N=20 (8,7/6,4,4,6)					
									3
		3.80 - 4.00	D						
		4.00		N=29 (5,5/6,6,8,9)	4.00	86.00			
							End of borehole at 4.00 m		4

## Remarks

LOFT = Lowestoft Formation  
Groundwater not encountered





# Borehole Log

Borehole No.

**WS11**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22632.59 - 6764764.69

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 90.00

Scale  
1:20

Client: Ardent Consulting

Dates: 06/10/2021 - 06/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.45	ES		0.20	89.80		CONCRETE	
					0.45	89.55		MADE GROUND: Dark grey slightly gravelly sandy silty CLAY	
		0.60 - 0.80	D					Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	1
		1.00		N=25 (8,7/6,6,6,7)					
		1.60 - 1.80	D						
		2.00		N=55 (10,12/13,13,14,15)	2.00	88.00		End of borehole at 2.00 m	2
									3
									4

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 2.0m due to refusal at 2.0m







# Borehole Log

Borehole No.

**WS12**

Sheet 1 of 1

Project Name: North Campus East Car Park,  
Welwyn Garden CityProject No.  
UK21.5579

Co-ords: -22716.08 - 6764873.07

Hole Type  
WLS

Location: College Way, Hertfordshire, AL8 6UN

Level: 91.00

Scale  
1:20

Client: Ardent Consulting

Dates: 06/10/2021 - 06/10/2021

Logged By  
Shaun Cahill

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.50	ES		0.50	90.50		MADE GROUND: Yellowish brown slightly gravelly sandy silty CLAY	1
		0.70 - 0.90	D					Firm to stiff yellowish brown and red slightly gravelly sandy silty CLAY with light bluish grey mottling, occasional black staining and fine sand/silt pockets. Gravel is fine to coarse chert (LOFT)	
		1.00		N=37 (6,10/10,10,9,8)					
		1.50 - 1.70	D						
		2.00		N=47 (6,10/10,10,11,16)					2
		2.50 - 2.70	D						
		3.00		N=55 (11,13/12,11,15,17)	3.00	88.00		End of borehole at 3.00 m	3
									4

## Remarks

LOFT = Lowestoft Formation

Groundwater not encountered

Borehole terminated at 3.0m due to refusal at 3.0m





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