Proposals for Mixed Use Regeneration

140-146 CAMDEN STREET
LONDON NW1 9PF

Planning Report

Basement Impact Assessment

Prepared by:
Price & Myers

PRICE & MYERS

December 2014

PRICE&MYERS

REPORT

140-146 Camden Street London NW1 9PF

Basement Impact Assessment

Prepared by: Phil Hudson
December 2014
20216

Version 4

30 Newman Street London W1T 1LT T 020 7631 5126 F 020 7462 1390 E mail@pricemyers.com www.pricemyers.com

140-146 Camden Street, London, NW1 9PF

Basement Impact Assessment

1. Introduction

This Basement Impact Assessment (BIA) has been produced in response to the guidance for basement and lightwell construction adopted by the London Borough of Camden (LBC) following the Pre-planning application submission for the works at 140-146 Camden Street, NW1 9PF.

The information contained within this BIA has been produced to cover the requirements as set out by Camden Planning Guidance - Basements and Lightwells (CPG4) including Camden Development Policies DP27 – Basements and Lightwells in respect of the proposals at 140-146 Camden Street. The site will be redeveloped to create a mixed use development, comprising commercial accommodation at ground and lower ground floors and residential use above.

The following Tables 1, 2 and 3 comprising the screening stage of the BIA, were reviewed to see the effect of the basement on the surrounding area and to establish the outline of the works within this report.

The purpose of this BIA document is to summarize the key points for the method of safe excavation and construction at 140-146 Camden Street. It also sets out how the neighbouring buildings will be protected as well as local environment and amenity.

The nominated building contractor under with the supervision of the client's project manager will liaise with London Borough of Camden and the local residents to ensure that the principles outlined are established in detail prior to the commencement of construction.

As Structural engineers we are experienced in designing basements and have extensive knowledge with regard to the type of ground conditions found in the Camden Area. Appendix B shows related examples of our work within central London and further a field.

2. Executive Summary

This BIA confirms, in accordance with CP64 and DP27, the proposed development will not cause harm to neighbouring properties, groundwater, surface water or slope stability.

CONTENTS

30 Newman Street London W1T 1LT T 020 7631 5128 F 020 7462 1390 E mail@pricemyers.com www.pricemyers.com

Table 1 - Subterranean (ground water) screening chart

Impact Question	Answer (Yes/No)	Justification	Reference
Q 1a: Is the site located directly above an aquifer?	No	The London clay formation is designated as "Unproductive strata" by the Environment Agency (i.e. a non aquifer) The London Clay formation at this site is understood to continue to around 50m depth based on British Geological Survey information Subsoils encountered in the site investigation are made ground over London Clay	Appendix A, section 2; Appendix C
Q 1b: Will the proposed basement extend beneath the water table surface?	No	Although ground water was encountered during boring in borehole No. 2 of the site investigation, the level of the water lies beneath that of the basement. The report shows that the ground water stabilised at a depth of 0.5m below the basement slab level after two weeks of forming the borehole. It seems likely that this water is due to an isolated pocket of perched ground water on top of the impermeable London Clay rather than a reflection of a consistent ground water level since no groundwater was encountered in BH1. In any case the new basement area will be an extension of the existing and so levels are unlikely to extend beneath the current structure	Appendix A, section 2; Appendix C
Q 2: Is the site within 100m of a watercourse, well (used/disused) or potential spring line?	Yes	With reference to Ordnance survey maps and Figure 12, Camden Surface Water Features within the Camden Geological, Hydrogeological and Hydrological Study as well as general knowledge of the local area, it is apparent that the site is within 100m of a watercourse, namely the Regent's Canal. In addition, reference to Figure 11, Camden Geological, Hydrogeological and Hydrological Study: Watercourses indicates that the lost river, The Fleet ran directly through the site to the south. This has been culverted and forms part of the sewer system beneath the site, and passing below the Canal.	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 3: Is the site within the catchment of the pond Chains on Hampstead Heath?	No	With reference to Figure 13, Hampstead Heath Surface Water Catchments and Drainage within the Camden Geological, Hydrogeological and Hydrological Study it seen that the site is not within the catchment of the ponds.	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 4: Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	No	The new and proposed schemes share the same footprint.	Appendix D; + Refer to Chassay Last Architects Scheme Drawings

Q 5: As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?	No	The ground conditions do not permit infiltration to the ground.	Appendix A, section 2
Q6: Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than, the mean water level in any local pond (not just ponds chains on Hampstead Heath) or spring line.	No	The lowest point of the excavation is understood to be around 3-4m below the existing ground level. There are no local ponds or surface water features other than those mentions in Q2 (which are man made or managed) within at least 1000m of the site. It would seem unlikely that a spring line would exist in the vicinity.	Figures 11 & 12 Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G

Table 2 - Slope stability screening chart

Impact Question	Answer (Yes/No)	Justification	Reference
Q 1: Does the existing site include slopes, natural or manmade, greater than 7°? (approximately 1 in 8)	No	With reference to Figure 16, Slope Angle Map within the Camden Geological, Hydrogeological and Hydrological Study it can be seen that the site does not lie in an area with slopes greater than 7°	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 2: Will the proposed re-profiling of landscaping at site change slopes at the property boundary to more than 7°? (approximately 1 in 8)	No	No re-profiling of the slopes at the property boundary are envisaged	Refer to Chassay Last Architects Scheme Drawings
Q 3: Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°? (approximately 1 in 8)	No	With reference to Figure 16, Slope Angle Map within the Camden Geological, Hydrogeological and Hydrological Study it can be seen that the site does not directly neighbour an area with slopes greater than 7°	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 4: Is the site within a wider hillside setting in which the general slope is greater than 7°? (approximately 1 in 8)	No	With reference to Figure 16, Slope Angle Map within the Camden Geological, Hydrogeological and Hydrological Study it can be seen that the site does not lie in an area with slopes greater than 7°	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 5: Is the London Clay the shallowest strata at the site?	Yes	The London Clay is the shallowest natural strata at the site. The Site Investigation indicates a variable layer of made ground over the London Clay.	Appendix A, section 2; Appendix C
Q 6: Will any tree/s be felled as part of the proposed development and/or are any works proposed within any tree zones where trees are to be retained?	No	No trees exist on site. However there are 3No. trees on Bonny Street in the pavement directly adjacent to the building. Given the age of the building, it seems that unlikely that the trees zones would extend into the existing building footprint, as there would be no real target soils for root growth in this location. A privet hedge to the north west corner of the site is likely to be removed as part of the works.	Refer to Chassay Last Architects Scheme Drawings
Q 7: Is there a history of seasonal shrink-swell subsidence in the local area, and/or evidence of such effects at the site?	No	No evidence has been highlighted on site. The London Clay formation is a recognised shrinkable soil and from the soil investigation has been classed as a cohesive soil with high to very high plasticity. Given that the new building is likely to be founded on piled foundations with a contiguous pile embedded retaining wall, the foundations will be below basement level, and so the founding material will be outside the zone of seasonal variation and thus unlikely to be subject to seasonal shrinkage swelling or the zone of influence of vegetation.	Appendix C

Q 8: Is the site within 100m of a watercourse or a potential spring line?	No	With reference to Ordnance survey maps and Figure 12, Camden Surface Water Features within the Camden Geological, Hydrogeological and Hydrological Study as well as general knowledge of the local area, it is obvious that the site is within 100m of a watercourse, namely the Regent's Canal. In addition, reference to Figure 11, Camden Geological, Hydrogeological and Hydrological Study: Watercourses indicates that the lost river, The Fleet ran directly through the site to the south. This has been culverted and forms part of the sewer system beneath the site, and passing below the Canal.	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 9: Is the site within an area of previously worked ground?	No	Localised made ground was identified within the site investigation but no evidence from historic maps or from Figure 16, Slope Angle Map within the Camden Geological, Hydrogeological and Hydrological Study that the site has been subject to working.	Appendix C & Appendix G Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup
Q 10: Is the site within an aquifer? If so, will the proposed basement extend beneath the water table such that dewatering may be required during construction?	No	The aquifer lies at depth below the London Clay Formation which is an aquiclude of unproductive strata. The single storey basement will extend through the made ground and into the upper horizons only of the London Clays.	Appendix A, section 2; Appendix C & Appendix D
Q 11: Is the site within 50m of the Hampstead Heath ponds?	No	Refer to site location Plan. The site is approximately 2km south-east of Heath Ponds	Appendix G; + Refer to Chassay Last Architects Scheme Drawings
Q 12: Is the site within 5m of a highway or pedestrian right of way?	Yes	The Site is bordered by Camden Street to the west and Bonny Street to the north. The basement will be adjacent to the highway on both of these boundaries. The Regents Canal lies to the south boundary.	Refer to Chassay Last Architects Scheme Drawings
Q 13: Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No	The neighbouring property to the south also has a basement level. To the east side of the property the founding levels are not established.	Refer to Chassay Last Architects Scheme Drawings
Q 14: Is the site over (or within the exclusion zone of) any tunnels e.g. railway lines?	Yes	The site lies directly over the River Fleet culvert which runs from the north west to the south east of the site. This is a Thames water asset and negotiations are already underway to secure a 'Build-over' License.	Appendix D + Refer to Chassay Last Architects Scheme Drawings

Table 3 - Surface flow and flooding screening chart

Impact Question	Answer (Yes/No)	Justification	Reference
Q 1: Is the site within the catchment of the ponds on Hampstead Heath	No	The Site lies to the south of the Hampstead Heath Ponds catchment	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G
Q 2: As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No	Where possible the proposed drainage will be connected to the existing, maintaining the existing route. Where new drainage is required it will reflect the existing connections.	
Q 3: Will the proposed basement development result in a change in the proportion of hard surfaced / paved external areas?	No	The current building occupies the entire site and the proposed building will also reflect this.	Refer to Chassay Last Architects Scheme Drawings
Q 4: Will the proposed basement result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream watercourses?	No	100% of the site currently drains to the public sewers considering the poor infiltration properties of the London Clay. Therefore, the proposed development will not adversely affect the long-term profile of inflows. The proposed development will not adversely affect the instantaneous profile of the inflows.	
Q 5: Will the proposed basement result in changes to the quality of surface water being received by adjacent properties or downstream watercourses?	No	There are no changes in the quality of surface water, as the proposed redevelopment will not change the use of the site adversely and will not introduce large car parking spaces that could have the potential to affect the quality of the surface water.	Refer to Chassay Last Architects Scheme Drawings
Q 6: Is the site in an area known to be at risk from Surface water flooding, such as South Hampstead, West Hampstead, Gospel Oak and King's Cross, or is it at risk from flooding, for example because the proposed basement is below the static water level of a nearby surface water feature?	No	With reference to Figure 15, Flood Map within the Camden Geological, Hydrogeological and Hydrological Study, it can be seen that the site does not lie in an area with the potential to be at risk of surface water flooding	Camden geological, hydrogeological and hydrological study Guidance for subterranean development Issue01 | November 2010 By Arup Appendix G

Appendix A. Discussion

Site: 140-146 Camden Street, London, NW1 9PF

Figure 1: Site Location

1 Site & Development Appraisal

1.1 Existing Site in Context

Camden Street runs approximately north-south, situated east of and runs roughly parallel to Camden High Street. The road forms part of a one way system taking traffic south, with Kentish Town Road to the west allowing northward travel. Together they form part of the A400, a main route in the Camden Town area. To the north side of the site is Bonny Street which runs east towards Camden Road, although it is a dead end. The road appears to be a quiet residential street, taking two-way traffic. The one way system is an obvious difficulty for traffic management issues associated with the site and although Bonny Street will possibly provide a dropping off point for site traffic, the fact that the road is a dead end with no obvious turning circle will have to be considered.

The site of 140-146 Camden Street is currently occupied by a single storey light industrial warehouse, to the north side, with two storeys of office accommodation and an existing basement to the south side (refer to Figure 2). The basement level and foundations lie close to the level of an underground culvert/sewer which confines the 'lost river' Fleet. The foundations bridge the sewer generally, and on the south east corner of the site the basement structure and foundations form a cantilever, in order to not impose gravity loads onto it. This is in a slightly dilapidated condition and of limited architectural merit. The building is understood to not currently in full use and not viable commercially in its current form.

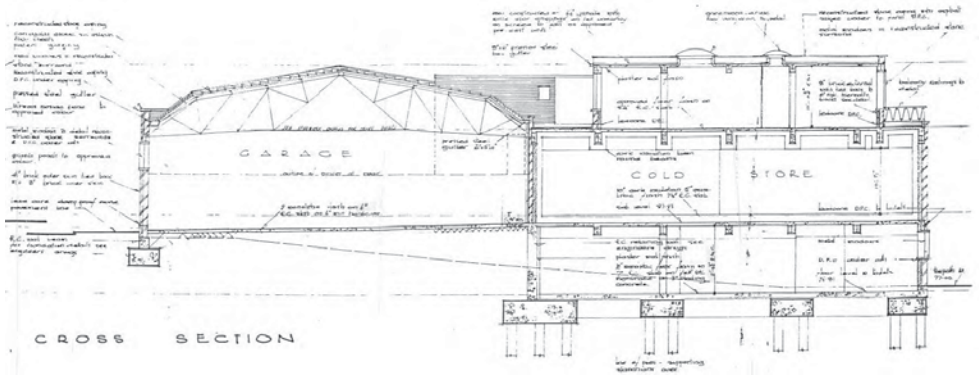


Figure 2: Existing Section

1.2 Proposed Development

It is proposed that the current building is demolished and replaced with a mixed use development. The new development will extend the current basement across the full footprint of the site to provide commercial office accommodation and services (refer to Figure 3). The ground floor will also provide commercial space, for the most part, with the upper storeys being used for residential purposes.

The building is to be formed in a reinforced concrete frame with flat slab construction generally. Stability will be provided by reinforced concrete shear walls. The building will be founded on piles into the London Clay strata. As with the current structural arrangement, the building and its foundations will be arranged such that the newly constructed building will not imposed any significant adverse loads on the culvert of the River Fleet, or adversely affect the neighboring canal.

Figure 3: Proposed Section Showing Extent of New Basement Excavation

2 Surveys

This report is based on a site survey and published geotechnical and hydrogeological information of the area.

A ground investigation report for the site was issued by Geotechnical & Environmental Associates in November 2013 (reference number: J13304). Two boreholes on site showed that the London Clay underlies a layer of made ground of varying thickness. This made ground consists of various materials including some sands and gravel. The soil beneath this layer was firm silty clay with occasional sand and gravel and extended down to the full depths of investigation of up to 9m below ground level. The granular content in the made ground makes it relatively permeable, when compared with the underlying London Clay. The water within these strata is recharged at the surface from precipitation which, owing to the relatively high porosity of the deposits, is stored within the matrix of the strata and forms a localised perched water table.

The Environment Agency (EA) provides hydrogeological maps on-line. The EA have defined Source Protection Zones for 2000 groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area. The EA maps confirm that the site lies outside the outer groundwater source protection zone (Figure 4). In addition, the source protection zones are located below the London Clay and therefore the proposed works will have no impact to the protected groundwater, considering that the thick impermeable layer of the London Clay will work as a barrier.

Figure 4: Groundwater Source Protection Zones Map (Extract from the EA's website)

There are two main water bearing aquifers in the London Basin. These are separated from each other by the relatively impermeable London Clay. The aquifers are referred as Upper Aquifer and Lower Aquifer. The Upper Aquifer comprises the groundwater within the River Terrace Deposits and granular soils (including the Bagshot Formation) which overlie the London Clay and these are not present on this site. The Lower Aquifer comprises the groundwater within the Thanet Sand, Upnor and Chalk Formations (which lie beneath the London Clay). The EA have produced maps showing the approximate catchment areas of the Upper and Lower Aquifers in the UK. These maps show that the site is not within the catchment areas of an Upper Aquifer or a Lower Aquifer (Figure 5 & Figure 6).

Figure 5: Local Upper Aquifers (Extract from the EA's website)

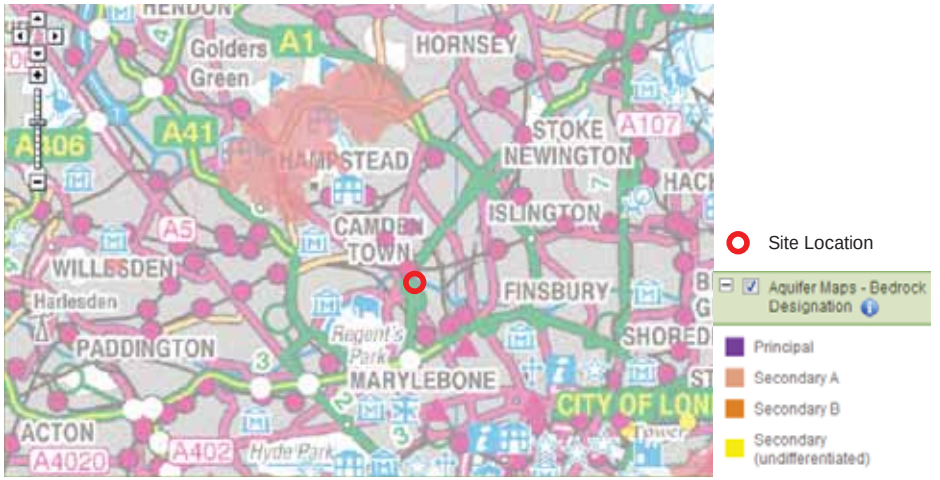


Figure 6: Local Lower Aquifers (Extract from the EA's website)

Groundwater was observed in the one of boreholes during the ground investigation works due to the presence of the made ground which can allow low flows of groundwater to travel through the ground and could eventually reach the basement. Engineering techniques such as drainage cavity systems and waterproofing must be considered in the design, in order to ensure that the basement will not be at risk of flooding from groundwater. Some further ground investigation to identify the extent and magnitude of the flows can be carried out as the scheme progresses in order to inform the design.

3 Site Hoardings and Security

It is intended that the perimeter of the site will be protected by hoardings with a vehicular and pedestrian gate which will be secured at night. All necessary permits will be obtained by the main contractor prior to start of relevant works.

The hoarding will be positioned at the site boundary and will act to reduce noise emanating from the site during the works.

Safety signage and traffic directional signage will be installed on the hoarding as necessary at points of access to the site and around the boundary. In addition the hoarding will have "Considerate Constructors Scheme Signs" which the contractor will be required to register along with details of the developer, consultants and contact numbers of the site manager.

4 Health, Safety and Environment

Health, Safety and Environment is an integral part of the planning process for each project. Implementation of a comprehensive Health, Safety and Environmental System and Procedures ensures every facet of the construction process is planned, managed and monitored. This also ensures compliance with statutory obligations.

Working hours will be agreed with London Borough of Camden but typically will be between the hours of 8am and 6pm Monday to Friday and 8am to 1pm on Saturday.

5 Site Logistics

Suggested phasing plans are attached in Appendix F showing the site access arrangements during the different stages of the building programme. These are indicative proposals at this stage but agreement from LBC will be obtained before works start.

Prior to commencement it will be the main contractor's responsibility to review in detail and to amend/ improve based on the attached phasing plans where practicable in line with consultation with the London Borough of Camden.

The following is a summary of the general principles which would be followed.

5.1 Vehicle Access

Since Bonny Street is a largely residential road the aim is to restrict, as far as practical, the amount of construction traffic using Bonny Street and use Camden Street for safe access during the main works subject to agreement with LBC Highways.

However initially site conditions suggest access will probably only be available from Bonny Street via Camden Street for the demolition and basement phases. In order to minimise the impact of vehicle movements the intention is to operate a two stage process for accessing the site. No construction vehicles will be parked in the local area, unless otherwise agreed with LBC Highways, only at a predetermined and agreed, designated location 15 minutes away, and so as a first stage, vehicles will need to radio ahead to gain permission to approach site otherwise they will be turned away. In order to accommodate local traffic issues and site logistics on a relatively tight site it is intended that the lay-by in Camden Street, under the railway bridge, will be employed as a second stage, to provide an additional holding area prior to being given the all clear to enter the site via the existing Bonny Street entrance (refer to Appendix F: Logistics Plan 1 & 2).

At the main access for construction vehicles, they will be checked to ensure their wheels are clean prior to leaving. Wheels will be washed/ jetted down to ensure mud does not spill onto the highway.

Once the demolition and basement construction phases have been completed, subject to LBC Highways approval, access to the site will be from a temporary delivery and loading bay on Camden Street itself, via a scaffold over-sail from the site boundary. The pavement would therefore have a gantry scaffold over it. This would require the suspension of one of the three road lanes local to the site (refer to Appendix F: Logistic Plan 3). The two stage holding of vehicles in advance of reaching site, described above, would continue to be in operation during this phase also.

5.2 Personnel Access

Access routes for site staff are expected to be via Camden Street

Clean site routes will be provided with safe walking routes defined from the site entrance to work areas.

5.3 Treatment of Properties Pavement / highways

Prior to works commencing a photographic dilapidation record will be taken of all adjacent properties highways, footpaths and associated infrastructure. A copy of these photographs will be forwarded to London Borough of Camden for their records.

A full underground services survey of all infrastructures within the road and pavement outside the site extending 10m either side including both Camden Street and Bonny Street is to be undertaken using Ground Penetrating Radar and Electromagnetic Detection. This, with a utility search of records should provide details of the below ground structures.

Ongoing discussions with Thames Water regarding the Fleet River Sewer have resulted in full line, level and condition survey of the sewer being conducted in September 2014. Once the scheme has been developed further a structural impact assessment will be produced for submission to Thames Water to allow a Certificate of No Objection to be issued by Thames Water prior to start on site.

All pavements and highways adjacent to the site will be made good at the end of the contract period in accordance with Local Authority requirements.

All vehicles leaving site will be checked to ensure that their wheels are clean and washed down if required, that they are sheeted and that they are not overloaded, in order to avoid any risk of spillage of materials or debris onto the highways.

5.4 Delivery of Materials / Storage on Site

A logistics plan will be produced by the main contractor at the outset of the main construction works. This will cover all traffic management including the preparation of all delivery schedules to ensure that all materials are delivered to the agreed programme. The plan will be designed to monitor, review and amend the delivery programme as necessary to fit in with the construction programme. The plan will also require the main contractor to liase with all subcontractors and suppliers to ensure that they fully understand and adhere to the programme constraints. The plan will also require the main contractor to liase with the local authority highways engineer and neighbouring residents as required.

5.5 Removal of Surplus Materials

A waste management system will be established for the site at an early stage. This will be monitored and adapted as the construction of the building proceeds. Skips will be positioned at suitable locations around the site for disposal of waste materials.

6 Construction Methodology

6.1 Pre-Construction

During the pre-construction phase of the project the contractor will undertake a full review of the scheme and all background information.

Demolition will be undertaken as prescribed within the Institute of Civil Engineers demolition protocol with due attention to sustainability and the reuse of materials where appropriate.

The contractor will follow Camden's Considerate Contractors Manual this will involve incorporating the Guide for Contractors Works in Camden within the Construction Management Plan.

6.2 Logistics

As with all construction projects, the efficient and effective management of the site logistics is paramount to the success of the project. A robust and carefully considered management plan will be prepared to ensure the programme is met and that disruption to the neighbours and transport routes will be kept to a minimum.

6.3 Neighbourhood Liaison

During the demolition and excavation of the works the contractor will ensure that all works are carried out safely and in such a manner that it will not inconvenience pedestrians or other road users and with a positive consideration to the needs of the local residents, site personnel and visitors as well as the general public. Airborne dust will be dealt with by dampening down areas with water prior to the works being undertaken.

Public footways and carriageways will be kept tidy, in safe condition and regularly inspected and washed down. Hoardings, safety barriers, lights and other features will be maintained in a safe and tidy condition. The site is to be kept clean and in good order at all times with surplus materials and rubbish controlled within the site and not allowed to spill over into the surroundings.

In addition to this, working times as stipulated within the contract particulars will be complied with and contractor would look to discuss with London Borough of Camden these times as a proactive approach to control of noise emissions from the site.

7 Basement Works

An important consideration during the basement works will be the control of ground movement and ground water to ensure that any effect on adjacent buildings and infrastructure is minimal and within acceptable limits, with particular attention being paid to the culverted river, and Regents canal.

A detailed geotechnical investigation has been undertaken which confirms the local soil and groundwater conditions. Refer to Appendix C. A study of the geology has been undertaken as part of these works.

The report confirms the local geology to be made ground overlying London Clay. Ground water was found in one of the boreholes, and on a subsequent visit the perched water was found within the installed standpipe borehole at 0.50m below existing basement slab level, which is equivalent to approximately 4.5m below ground level. This level will be re-monitored prior to construction being undertaken to gain further insight into local the groundwater conditions.

The method of basement construction will be finalised by the appointed contractor, but at this stage we anticipate the following sequence of works. Where necessary the main retaining wall structure of the basement will be created by the introduction of a contiguous piled wall to the perimeter.

Bottom-up construction is the traditional means of forming basement excavations. Since the site already has a basement over part of the building footprint, this method would seem the most sensible means of carrying out the construction, since half the site will effectively already be excavated. Therefore the existing retaining walls within the basement which are to be maintained would be propped whilst the superstructure of the building was demolished. With stable levels formed over the site at the existing ground and basement levels, a piling rig would install the building foundations at depth and form the perimeter retaining wall (where no retaining structure already exists). With the piled wall formed the following sequence would be followed:

i. RC pile capping beam formed, and site level partially reduced
ii. Temporary bracing at ground floor level with steel propping/ shoring introduced to prevent disturbance to adjacent ground and building foundations, and trench sheeting to the canal tow path boundary
iii. Excavations take place to basement slab level formation, breaking down piles to cut-off level as the excavation proceeds.
iv. Pile caps formed
v. Basement Slab constructed
vi. Lining walls and reinforced concrete columns built to ground floor level
vii. Ground floor slab constructed.
viii. Building above ground floor construction can commence.

Refer to Appendix D for P&M scheme of the proposed basement construction and Appendix E for the outline Temporary Works.

7.1 Impact on Adjacent Structures & Services

Impact on Adjacent Structures – The works are to be conducted adjacent to the boundary with the neighbouring property to the east of the site as well as the highways and the canal. A method statement for the works will be completed for Party Wall purposes. This will be incorporated within a Party Wall Agreement in the normal manner. If any damage develops in the structure of the adjacent house then normal party wall procedures provide a mechanism for completing any repairs. Similarly, consents to the works will be sought from Thames Water and The Canal and River Trust. Nonetheless we do not envisage any significant damage will develop as a result of the proposed works to any adjacent structures.

Impact on Adjacent highways and buried services etc – The works abut the public footpaths and highways on two boundaries and the towpath and canal to the south. In addition the Fleet River Sewer passes below the site, running diagonally across the footprint from the north-west to south east corners.

On the basis that the works are designed correctly and executed in accordance with good practice there should be no significant risk of damage to the nearby Public Highway and any buried services.

A build over license application has been made to Thames Water and the process is in progress to ensure all the works are to their satisfaction, and the works will be carried out in accordance with any conditions agreed during discussions with them.

In addition the Canal and River Trust have been contacted in order to identify any further conditions which may be required in relation to working in the proximity of the Regent's Canal.

Slope Stability – The works will be executed within the space defined by a propped (either temporary or permanent depending on methodology adopted) bored pile wall as well as existing retaining structures which will be examined and suitable temporary works devised if necessary. The site is generally also quite level. Consequently the risk of failure due to slope instability is insignificant.

Impact on buried services on the site – It is anticipated that the work will have an impact on buried services passing across the site e.g. sewers, cables etc. In the course of the normal design development these will be considered and appropriate designs developed, in particular with regard to the Fleet Sewer.

Prior to commencement a full schedule of condition will be carried out to all relevant buildings as defined within The Party Wall etc Act 1996 where the excavations may be within the influence zone of existing foundations. Geospatial monitoring of neighbouring structures may be undertaken prior to and during the construction period to monitor any movement, if necessary.

8 Conclusions

For the proposed development at 140-146 Camden Street, a design study has been undertaken of the various aspects of construction and how these may affect the local amenity and neighbouring properties with regard temporary and permanent stability and the ground and surface water regime.

The soil investigation and associated studies have demonstrated that the development will not have an adverse effect on the local ground and surface water regime, and unlikely to cause damage to the surrounding buildings and structures.

Appendix B. Author's Résumé & Examples of Price & Myers works in London

The Author of this report:

Philip Hudson
BSc(Eng) CEng MIStructE MICE

Partner

Education
Caldicot Comprehensive School, Monmouthshire
UMIST, Manchester

Special Focus
Phil manages the development of Price & Myers' CAD, IT and Information Systems

After graduating from UMIST in 1981, Phil worked for Knight & Piesold Consultants. As a graduate engineer he worked on large hydro electric and thermal power station projects in Kenya, Zimbabwe, Zambia and Swaziland. His time with Knight & Piésold included a two year site secondment to the CEGB on the UK-France power link at the Sellindge Converter Station in Kent. After a short spell with Eastwood & Partners, Phil joined Price & Myers in 1988. He has worked on a large range of projects since then. In recent years he has worked on many examples of Subterranean developments in the various London Boroughs. Recent & current examples of such work are highlighted in **bold text** within the following list:

- **Construction of a deep basement with car park and swimming pool below the listed buildings at 13-15 Princes Gate (£30m, completion due in 2013) with Darling Associates for Viridis Asset Management.**
- **Rebuilding a mews house behind its façade and construction of a new basement in Ennismore Street (£1m, completion due in 2012) with Picardi Architects for London International.**
- **Small private residential development including a new basement at 20 Rutland Mews South (£300k, due for completion 2011) with Edward Hill Architects for a private client.**
- **Large private residential scheme involving the construction of a deep basement under an existing listed property at 22 Frognal Way (£3m, due for completion in 2012) with Alan Power Architects for a private developer.**
- **Large private residential development including double storey basement and 25m pool at 50 Hyde Park Gate (£6m, due for completion in 2013) with Chapman Workhouse for a private client.**
- **Private residential refurbishment and extensive new double basement at 7 Wilton Crescent (£10m, due for completion in 2012) for Insite Developments.**
- **Ewhurst Manor, a large private residence set within a 900 acre estate in Hampshire (£20m, due for completion in 2012) with Adam Architecture for a private client.**
- **The dining hall extension to Surrey Square School in south London (£2m, 2010) with Earle Architects for London Borough of Southwark. This is a complex 3-dimensional concrete shell partially submerged in the school grounds.**
- **Residential scheme with a substantial new basement behind a retained façade and set over a deep railway tunnel at 11 Netherall Gardens (£4m, due for completion in 2012) with PKS Architects for a Private Developer.**
- Office development at 5-7 Giltspur Street (£10m, due for completion in 2013) with Daniel Watney Architects & Surveyors for City & Guilds.
- Private Care Home for Elderly people in the grounds of grade 2 listed Perrins House, Great Malvern (£2m, due for completion in 2011) with McMorran & Gatehouse Architects for Friends of the Elderly.
- Lauriston School in Hackney (£8m, 2010) with Meadowcroft Griffin Architects for London Borough of Hackney. The construction relies heavily on the use of Cross-Laminated Timber panelling.
- Luminar Apartments - Residential scheme and large Church within a converted grade 2 listed theatre at 58 St John's Hill in Clapham (£15m, 2011) with Assael Architects for Henley Homes. The Church has a 2500 seat capacity and has been fitted out for The Deeper Christian Life Ministry (2011).
- New HQ and Distribution Centre for Italian lighting company iGuzzini in Guildford (£9m, 2008) with Lewis & Hickey and Pierre-Luigi Copat of Paris.
- The Henson Building - New residential development at 30 Oval Road in Camden (£15m, 2010) with Tate & Hindle Architects for London & Newcastle.
- Two new luxury houses at 124 West Heath Road (£2m, due for completion in 2012) with PKS Architects for a private developer.
- Refurbishment and extension of a listed public house to create a boutique hotel at The Crown & Greyhound in the heart of Dulwich Village (£5m, completion due in 2014) with EPR Architects for The Dulwich Estate.
- Large private residential development using KLH Cross-Laminated timber panelling at Caring Wood near Maidstone (£5m, due for completion in 2014) with McDonald Wright Architects for a private client.
- Large social housing development at Papermills Wharf in Walthamstow (£15m, due for completion in 2012) with Levitt Bernstein Architects for East Thames Housing.
- Social Housing development using KLH cross-laminated panelling at Kingsgate House on the Kings Road (£10m, due for completion in 2012) with Horden Cherry Lee Architects for Lancer Property Services.
- Refurbishment and extension of 1 Regent Street (£8m, completion due 2014) with JM Architects for The Crown Estate.
- New private chapel at Ripon College in Oxfordshire (£1m, due for completion in 2012) with Niall McLaughlin Architects.
- The phased refurbishment of St James Church in Piccadilly with Ptolemy Dean Architects. The church is Grade 1 Listed and designed by Sir Christopher Wren. The church suffered severe bomb damage during World War 2 and was subsequently restored in the early 1950's.
- Cranfield University Centre for Design (£1m, 2010) with Niall McLaughlin Architects. The construction uses Cross-Laminated Timber panelling.

Phil became an associate in 1994 and partner in 2001.

Price & Myers LLP – who we are:

Profile

Price & Myers was established in 1978 in London as a firm of consulting structural engineers, with the aim of working with good imaginative architects, to make excellent buildings. In our first 33 years we have completed over 20,000 jobs, and won over 350 awards; we now also have offices in Nottingham and Oxford, and currently employ about 120 people.

Our work covers an unusually wide range, both in size and type. Projects vary from minor alterations and extensions, to major new buildings and refurbishment projects, using the most recent developments in materials and construction techniques. We have advised on the repair and restoration of many historic buildings, and we have worked with some of the country's leading architects on the design of many outstanding modern buildings. Our diverse project portfolio allows us to find the right solution for every job.

We enjoy the technical, logical, engineering principles that underpin our profession; applying them creatively to help architects and clients bridge the gap between concept and reality, and meet our clients' individual needs.

All the partners are actively involved in the design of our projects, and the office is characterised by an open, informal atmosphere in which discussions of job problems and successes are encouraged. Our experience of working in multi-disciplinary teams enables us to make a positive contribution at an early stage in the design of a project, when engineering input can often help to achieve an elegant and cost effective solution.

Specialist teams

The majority of our work at Price & Myers is the design of building structures. Our aim is to create simple and elegant structural engineering, minimising the complexities that can compromise aesthetics and function, slow construction, and escalate costs. Our job is to deliver good, clear drawings and concise and readable documents.

Price & Myers Geometrics applies elements of form, structure, materials and manufacture to interpret unusual ideas and make them a reality. These projects often seem complex, but are built on tried and tested principles of geometry and engineering. We are involved from the initial modelling to the final fabrication.

Working from the conceptual stage to BREEAM certification Price & Myers Sustainability offers technical support to clients & designers to improve the environmental performance of their buildings. Combining rigorous analysis with an imaginative approach enables us to find often unique but appropriate solutions.

Price & Myers Infrastructure offer our clients underground drainage design, detailed ground modelling, road pavement design and flood risk assessments. The Infrastructure team collaborate closely with structural colleagues from initial concepts to co-ordinated detailed design. Heavy emphasis is placed on sustainability in their work.

Examples of Subterranean developments

Examples of current work in the Practice which involves issues of basements in London with complex ground conditions and ground water.

21 Wilton Street	Complete overhaul of a listed house in Belgravia, including pool, gym, media room etc. within a new basement.
17 Phillimore Gardens	Refurbishing a listed house and constructing a new basement with swimming pool under the garden and part of the house
44 Grove End Road	Extensive refurbishment of a listed building plus construction of a basement swimming pool and car park.
7 Wilton Crescent	Rebuilding a mews house to include double storey basement with swimming pool plus renovation and rooftop extension of listed house on Wilton Crescent.
12a-14 Cheyne Row	Construction of a new basement under a central courtyard of a collection of houses.
15 Thurloe Square	Refurbishment of a listed house and construction of a basement extension
44 Markham Square	Refurbishment and extension of a house including new basement.
2 Alma Terrace	Construction of a basement under the full footprint of the house and garden. The house above remains occupied and the work is done using a tunnelling method.
15 Addison Crescent	Construction of a deep basement with swimming pool under an existing house.
11 Netherall Gardens	Complex new basement under a large house. The façade is to be retained and the excavation is located 15m above the crown of a major railway tunnel.
40 St Petersburg Place	Alterations to house and mews house featuring new basement.
23a Earls Court Square	A basement extension under the house to include a gym and 20m lap pool
22 Frognal Way	Retaining a listed 1970's modernist house and constructing a new basement with swimming pool under the house and garden.
4 Frognal Way	Refurbishment of an existing house including an extension and new basement with swimming pool.
20 Rutland Mews South	Construction of a new basement under an existing house.
7 St James Square	Construction of a two storey basement with swimming pool under a grade 2 listed house designed by Lutyens.

Appendix C. Site Investigation Report by GEA

Site Investigation and Basement Impact Assessment Report

140-146 Camden Street
London
NW1 9PF

Client	Elebro Limited
Engineer	Price and Myers
	J13304
	November 2013

Document Control

Project title	140-146 Camden Street, London, NW1 9PF	**Project ref**	J13304
Report prepared by	Hannah Dashfield BEng FGS		
With input from	Martin Cooper BEng CEng MICE FGS	John Evans MSc FGS CGeol	
Report checked and approved for issue by	Steve Branch BSc MSc CGeol FGS FRGS MIEnvSc		

Issue No	Status	Date	Approved for Issue
1	Final	21 November 2013	

This report has been issued by the GEA office indicated below. Any enquiries regarding the report should be directed to the office indicated or to Steve Branch in our Herts office.

☑	Hertfordshire	tel 01727 824666	mail@gea-ltd.co.uk
☐	Nottinghamshire	tel 01509 674888	midlands@gea-ltd.co.uk

CONTENTS

140–146 Camden Street, London, NW1 9PF
Elebro Limited
Site investigation and
Basement Impact Assessment Report

EXECUTIVE SUMMARY

This executive summary contains an overview of the key findings and conclusions. No reliance should be placed on any part of the executive summary until the whole of the report has been read. Other sections of the report may contain information that puts into context the findings that are summarised in the executive summary.

BRIEF

This report describes the findings of a site investigation carried out by Geotechnical and Environmental Associates Limited (GEA), on the instructions of Price and Myers, on behalf of Elebro Limited, with respect to the demolition of the existing building and the subsequent construction of a new building, incorporating the existing single level basement, which will be extended to the north. The purpose of the investigation has been to research the history of the site with respect to possible contaminative uses, to determine the ground conditions and hydrogeology, to assess the extent of any contamination and to provide information to assist with the design of the basement support and suitable foundations for the proposed development. The report also includes information for a Basement Impact Assessment (BIA) in accordance with guidelines from the London Borough of Camden in support of a planning application.

DESK STUDY FINDINGS

The desk study research has indicated that prior to 1875 the site was occupied by what appears to be two pairs of semi-detached houses, with front and rear gardens, which were demolished and subsequently replaced by a warehouse at some time between 1954 and 1982. A number of works and factories were located within 250 m of the site. No landfills were located within 250 m of the site and a risk of soil gas has not been identified. The River Fleet previously flowed beneath the site in a southeasterly direction, passing under the Regent's Canal towards St Pancras Way.

GROUND CONDITIONS

The investigation has confirmed the expected ground conditions in that, below a moderate to significant thickness of made ground, the London Clay was encountered and proved to the maximum depth investigated.
The made ground extended to depths of 3.80 m and 0.80 m below ground floor level and basement level respectively and generally comprised brown sand or silty clay with occasional fragments of brick, ash and concrete. The London Clay initially comprised firm brown silty clay, with varying amounts of gravel, which extended to depths of between 4.10 m and 1.00 m below ground floor level and basement level respectively. This upper zone is underlain by firm brown mottled grey silty clay with occasional partings of orange-brown fine sand and silt and rare selenite crystals which was proved to the maximum depth investigated of 6.00 m and 5.50 m below ground floor level and basement level respectively. Groundwater was encountered during the drilling of Borehole No 2, from within the made ground beneath the floor slab at a depth of 0.42 m. A standpipe was installed to a depth of 5.30 m within Borehole No 2 and groundwater was measured at a depth of 0.50 m, roughly two weeks after installation. Contamination testing has revealed elevated concentrations of total PAH including benzo(a)pyrene and dibenzo(a,h)anthracene within a single sample of made ground tested.

RECOMMENDATIONS

Following demolition of the existing building it is understood that it is proposed to construct a new building incorporating the existing basement located in the southern part of the site and extending the basement to the north. The construction of a new building may result in changes to the distribution of the loads applied by the existing building, although it may be possible to re-use the existing foundations and a check should be undertaken once existing and proposed loads are known. The proposed basement excavation will extend to a depth of about 3.80 m below existing ground level in the northern part of the site and formation is likely to be within the firm London Clay. The existing spread footings in the northern part of the site will need to be underpinned or supported by new retaining walls. Significant groundwater inflows are not anticipated into the basement excavation and it may be possible to form the retaining walls by mass concrete underpinning using a traditional 'hit and miss' approach, following the results of additional investigations. Alternatively a bored pile retaining wall may be adopted which would have the advantage of being incorporated into the permanent works and would be able to provide support for structural loads. It is recommended that additional sampling and testing is carried out in the proposed garden areas to determine the precautions required, once the redevelopment proposals are finalised and additional investigations will need to be carried out once access is available.

The BIA has not indicated any concerns with respect to land stability or groundwater and a requirement for a flood risk assessment has not been identified.

Part 1: INVESTIGATION REPORT

This section of the report details the objectives of the investigation, the work that has been carried out to meet these objectives and the results of the investigation. Interpretation of the findings is presented in Part 2.

1.0 INTRODUCTION

Geotechnical and Environmental Associates (GEA) has been commissioned by Price and Myers, on behalf of Elebro Limited, to carry out a desk study and ground investigation at Camden Street, London, NW1 9PF. This report also forms part of a Basement Impact Assessment (BIA), which has been carried out in accordance with guidelines from the London Borough of Camden (LBC) in support of a planning application.

1.1 Proposed Development

It is understood that it is proposed to demolish the existing building and construct a new building comprised of five-storeys and eight-storeys, incorporating the existing single level basement, which will be extended to the north. The new basement beneath the northern part of the site will extend to a depth below existing ground floor level of roughly 3.80 m. The new building will comprise a mixture of residential and commercial end use, which will incorporate soft landscaped and garden areas.

It is understood that the client plans to undertake further additional deeper boreholes once planning permission has been granted and the existing building has been demolished.

It is likely that an initial impact study report will need to be prepared by Thames Water to assess if the proposed scheme will have an impact on the Fleet sewer, located beneath the site.

This report is specific to the proposed development and the advice herein should be reviewed if the proposals are amended.

1.2 Purpose of Work

The principal technical objectives of the work carried out were as follows:

- to check the history of the site and surrounding areas with respect to previous contaminative uses;
- to determine the ground conditions and their engineering properties;
- to assess the possible impact of the proposed development on the local hydrogeology;
- to provide advice with respect to the design of suitable foundations and retaining walls;
- to provide an indication of the degree of soil contamination present; and
- to assess the risk that any such contamination may pose to the proposed development, its users or the wider environment.

1.3 Scope of Work

In order to meet the above objectives, a desk study was carried out, followed by a ground investigation. The desk study comprised:

- a review of readily available geological and hydrogeological maps;
- a review of historical Ordnance Survey (OS) maps and environmental searches sourced from the Envirocheck database; and
- a walkover survey of the site carried out in conjunction with the fieldwork.

In light of the desk study, an intrusive ground investigation was carried out which comprised, in summary, the following activities:

- two drive-in window sampler boreholes, advanced to depths of 6.0 m and 5.50 m, below existing ground level and basement level respectively;
- the installation of a single groundwater monitoring standpipe and a single subsequent monitoring visit, carried out roughly two weeks after installation;
- laboratory testing of selected soil samples for geotechnical purposes and for the presence of contamination; and
- provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.

The report includes a contaminated land assessment which has been undertaken in accordance with the methodology presented in Contaminated Land Report (CLR) 11[1] and involves identifying, making decisions on, and taking appropriate action to deal with, land contamination in a way that is consistent with government policies and legislation within the United Kingdom. The risk assessment is thus divided into three stages comprising Preliminary Risk Assessment, Generic Quantitative Risk Assessment, and Site-Specific Risk Assessment.

1.3.1 Basement Impact Assessment (BIA)

The work carried out also includes a Hydrogeological Assessment and Land Stability Assessment (also referred to as Slope Stability Assessment), all of which form part of the BIA procedure specified in the London Borough of Camden (LBC) Planning Guidance CPG4[2] and their Guidance for Subterranean Development[3] prepared by Arup. The aim of the work is to assess whether the development will affect the stability of neighbouring properties or groundwater and whether any identified impacts can be appropriately mitigated by the design of the development.

1 *Model Procedures for the Management of Land Contamination* issued jointly by the Environment Agency and the Department for Environment, Food and Rural Affairs (DEFRA) Sept 2004
2 London Borough of Camden Planning Guidance CPG4 *Basements and lightwells*
3 Ove Arup & Partners (2010) *Camden geological, hydrogeological and hydrological study. Guidance for Subterranean Development.* For London Borough of Camden November 2010

1.4 Qualifications

The land stability element of the Basement Impact Assessment (BIA) has been carried out by Martin Cooper, a BEng in Civil Engineering, a chartered engineer (CEng), member of the Institution of Civil Engineers (MICE), and Fellow of the Geological Society (FGS) who has over 20 years specialist experience in ground engineering. The subterranean (groundwater) flow assessment has been carried out by John Evans, MSc in Hydrogeology, Chartered Geologist (CGeol) and Fellow of the Geological Society of London (FGS). The assessments have been made in conjunction with Steve Branch, a BSc in Engineering Geology and Geotechnics, MSc in Geotechnical Engineering, a chartered geologist (CGeol) and Fellow of the Geological Society (FGS) with 25 years' experience in geotechnical engineering and engineering geology. All assessors meet the Geotechnical Adviser criteria of the Site Investigation Steering Group and satisfy the qualification requirements of the Council guidance.

The surface water and flooding element of the BIA is provided for guidance only and should be confirmed by a suitably qualified engineer experienced in carrying out surface water assessments.

1.5 Limitations

The conclusions and recommendations made in this report are limited to those that can be made on the basis of the investigation. The results of the work should be viewed in the context of the range of data sources consulted, the number of locations where the ground was sampled and the number of soil, gas or groundwater samples tested; no liability can be accepted for information in other data sources or conditions not revealed by the sampling or testing. Any comments made on the basis of information obtained from the client or other third parties are given in good faith on the assumption that the information is accurate; no independent validation of such information has been made by GEA.

2.0 THE SITE

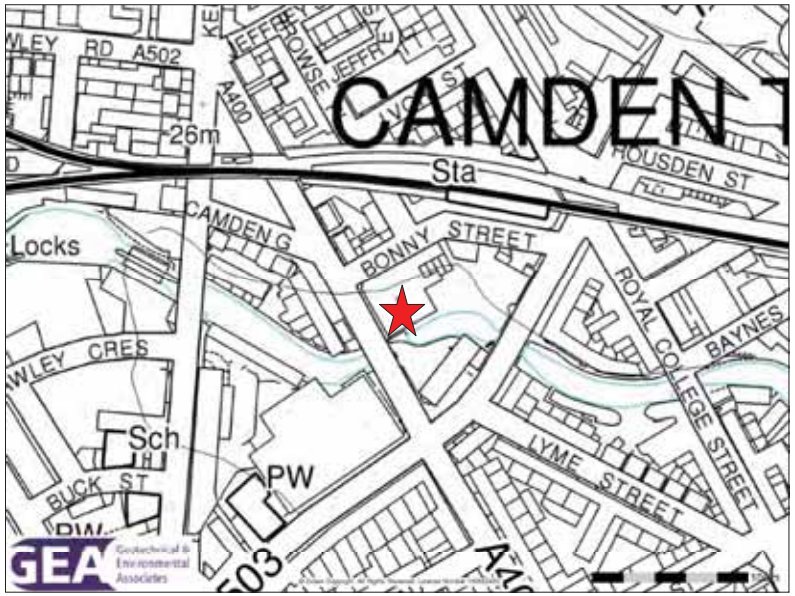
2.1 Site Description

The site is located in the City of Westminster, roughly 100 m to the southwest of Camden Town railway station. It is roughly rectangular in shape, measuring approximately 50 m north-south by 45 m east-west and is located on a corner plot such that it fronts onto Camden Street to the west and Bonny Street to the north. It is bordered to the south by the Regent's Canal and is adjoined to the east by a two-storey building with what appears to be a single level basement. The site may be additionally located by National Grid Reference 529080, 184130 and is shown on the map below.

Northern elevation, fronting onto Bonny Street

Western elevation, fronting onto Camden Street

Southern elevation, bordered by Regent's Canal



The site is currently occupied by a flat roof office building, which includes Nos 140 to 146 and is generally comprised of two storeys, apart from in the central part of the site, where the building comprises three storeys. A single level basement is located in the southern half of the site, which extends to a depth of approximately 3.8 m below existing ground floor level and is at the same level as the Regent's Canal, located to the south of the site.

The building covers the entire site and as such the site is essentially devoid of vegetation, with the exception of a row of bushes along the western elevation. In addition, three trees, located on the pavement of Bonny Street, along the northern elevation of the existing building; two of these trees have been pollarded and the other tree is roughly 10 m high.

2.2 Site History

The history of the site and surrounding area has been researched by reference to historical Ordnance Survey (OS) maps sourced from the Envirocheck database.

The earliest map studied, dated 1851, indicates that the current road system was in place and the site is bounded to the west by Camden Terrace and to the south by Breckhock Street. On this map, the Regent's Canal has already been constructed to the south of the site, along with the railway, located approximately 80 m to the north of the site. It is not clear if any development of the site had taken place at this time.

The next map studied, dated 1875, shows the site to be developed with two pairs of semi-detached buildings, with what appears to be front and rear gardens, along with numerous trees. The existing buildings to the east of the site appear to have been constructed by this time with large rear gardens and a row of terraced buildings have been constructed on the opposite side of Camden Terrace. In the surrounding area, potentially contaminative uses

include Camden Brewery located roughly 240 m to the west of the site, along with Kentish Town Wharf 75 m to the southwest and Ravham Wharf 20 m to the south of the site and a saw mill located roughly 120 m to the southwest. The saw mill is not shown on any subsequent maps.

At some time between 1875 and 1896, Camden Terrace is renamed Camden Street and Breckhock Street is renamed Bonny Street. On the 1896 map, a bakery is shown roughly 120 m to the southwest of the site.

At some time between 1916 and 1953, the terraced buildings on the opposite side of Camden Street have been demolished and replaced by a new building. On the 1953 and 1954 map, a number of factories and works have appeared within 250 m of the site, the closest being an ironworks located within 100 m to the north of the site, which comprised an ironworks.

At some time between 1954 and 1982, the two pairs of semi-detached houses were demolished and subsequently replaced by a single building, labelled as a warehouse. The site has remained essentially unchanged to the present day.

2.3 Other Information

A search of public registers and databases has been made via the Envirocheck database and relevant extracts from the search are appended. Full results of the search can be provided if required.

The desk study research has indicated that there are no registered landfills, historic landfills, registered waste transfer sites or waste management facilities within 250 m of the site.

There has been a single pollution incident to controlled waters within 250 m of the site, located 123 m north of the site, classified as minor incident, and therefore unlikely to have impacted on the site.

The search has indicated that the site is located in an area where less than 1% of homes are affected by radon emissions; which is the lowest classification given by the Health Protection Agency (HPA) and therefore no radon protective measures will be necessary.

The site is not located within a nitrate vulnerable zone or any other sensitive land use and there are no listed fuel stations within 250 m of the site.

It is understood from the consulting engineers that the southern half of the site has piled foundations.

2.4 Geology

The British Geological Survey (BGS) map of the area (Sheet 256) indicates the site to be directly underlain by London Clay.

According to the British Geological Society memoir, the London Clay Formation is homogenous, slightly calcareous silty clay to very silty clay, with some beds of clayey silt grading to silty fine grained sand.

2.5 Hydrology and Hydrogeology

The London Clay is classified as 'Unproductive Strata', as defined by the Environment Agency as rock or drift deposits with low permeability that have negligible significance for water supply or river base flow.

Any groundwater flow within the London Clay will be at a very slow rate, due to its negligible permeability; the permeability will be predominantly secondary, through fissures in the clay. Published data for the permeability of the London Clay indicates the horizontal permeability to generally range between 1 x 10^{-11} m/s and 1 x 10^{-9} m/s, with a lower vertical permeability.

There are no Environment Agency designated Groundwater Source Protection Zones (SPZs) on the site and there are no listed water abstraction points within 250 m of the site.

The Envirocheck Report indicates that the nearest surface water feature is located 23 m southeast of the site and appears to be the Regent's Canal.

The site lies outside the catchment of the Hampstead Heath chain of ponds.

The site is not at risk of flooding from rivers or sea, as defined by the Environment Agency. Camden Street and Bonny Street have not been identified as streets at risk of surface water flooding, specified in the London Borough of Camden (LBC) Planning Guidance CPG4 and therefore a flood risk assessment will not be required.

The River Fleet[4] previously flowed beneath the site in a southeasterly direction, passing under the Regent's Canal towards St Pancras Way. It is likely that any groundwater beneath the site within the London Clay Formation would be controlled by local contours, thus flow would be towards the southeast and the River Thames. Today the Fleet is entirely covered and culverted and forms part of the surface water sewerage system; a Thames Water tunnel roughly 3.0 m in diameter known as the 'Fleet Sewer' is present beneath the site at a depth of about 4.2 m below existing basement level and runs in a northwest to southeast direction.

2.6 Preliminary Contamination Risk Assessment

Part IIA of the Environmental Protection Act 1990, which was inserted into that Act by Section 57 of the Environment Act 1995, provides the main regulatory regime for the identification and remediation of contaminated land. The determination of contaminated sites is based on a "suitable for use" approach which involves managing the risks posed by contaminated land by making risk-based decisions. This risk assessment is carried out on the basis of a source-pathway-receptor approach.

2.6.1 Source

The desk study research has indicated that the site was occupied by what appears to be two pairs of semi-detached houses, with front and rear gardens, prior to 1875 which were demolished and subsequently replaced by a warehouse at some time between 1954 and 1982. A number of works and factories were located within 250 m of the site. Based on the historical usage of the site and potentially contaminative activities close to the site, there is a potential for localised contamination from both on and off-site sources.

There is the potential for off-site contaminants to have migrated onto the site through the made ground and surface water and groundwater from water flowing in the River Fleet.

4 Nicholas Barton (2000) *London's Lost Rivers.* Historical Publications Ltd

The former warehouse may have stored potentially contaminative materials, but it is likely to have involved relatively small quantities such materials, and any potential contamination is therefore likely to be relatively localised and should not be significant in nature.

The site is directly underlain by low permeability London Clay and there is a limited pathway for the migration of potential contaminants to the site from off-site uses and surrounding land uses are not considered to have had a significant impact on the site.

Demolition of the buildings previously present on the site is likely to have resulted in the presence of a moderately significant thickness of made ground. This would mostly be inert rubble, but is likely to include small quantities of contaminants such as lead, present in paintwork, and other metals.

The desk study has not identified any evidence of landfills within 250 m of the site and made ground associated with demolition of the buildings previously present on the site is likely to be predominantly inert demolition rubble. No potential sources of soil gas have, therefore, been identified.

2.6.2 Receptor

The proposed redevelopment of the site will have a mixed residential and commercial end use. The site will incorporate areas of soft landscaped and garden areas and the residential end use is considered a high sensitivity end-use. Buried services are likely to come into contact with any contaminants present within the soils through which they pass and site workers are likely to come into direct contact with any contaminants present in the soil and through inhalation of vapours during basement excavation and construction. Being underlain by unproductive strata groundwater is not considered to be a receptor.

2.6.3 Pathway

End users would be effectively isolated from direct contact with any contaminants present within the near surface soils by the presence of the building, but a potential for direct contact would exist in any proposed garden areas or areas of soft landscaping, and a potential for uptake through vegetation which may also result in ingestion of any contaminants present through consumption of fruit or vegetables grown on the site. Soluble contaminants within the made ground could also potentially migrate onto adjacent sites as a result of infiltration of surface run-off, this pathway is also already in existence. There will be limited potential for contaminants to move on or off the site, except horizontally within any made ground, in association with perched groundwater movements, this pathway is also already in existence. A pathway for ground workers to come into contact with any contamination will exist during demolition and construction work and services will come into contact with any contamination within the soils in which they are laid.

There is thus considered to be limited potential for a significant contaminant pathway to be present between any potential contaminant source and a target for the particular contaminant beneath the new building and moderate potential within the proposed soft landscaped or garden areas.

2.6.4 Preliminary Risk Appraisal

On the basis of the above it is considered that there is a MODERATE / LOW RISK of there being a contaminant linkage at this site which would result in a requirement for remediation work. Such remediation would be limited to the proposed garden areas, since there is a limited potential for any contamination pathway to exist beneath the proposed building, and is

likely to include replacement of a suitable thickness of topsoil and subsoil. As there is no evidence of filled ground within the vicinity there should be no need to consider soil gas exclusion systems.

3.0 SCREENING

The LBC guidance suggests that any development proposal that includes a subterranean basement should be screened to determine whether or not a full BIA is required.

3.1 Screening Assessment

A number of screening tools are included in the Arup document and for the purposes of this report reference has been made to Appendix E which includes a series of questions within a screening flowchart for three categories; groundwater flow; land stability; and surface water flow. Responses to the questions are tabulated below.

3.1.1 Subterranean (groundwater) Screening Assessment

Question	Response for 140-146 Camden Street
1a. Is the site located directly above an aquifer?	No. The Site is underlain by the London Clay which is designated as Unproductive Strata by the Environment Agency and cannot store and transmit water in sufficient quantities to support groundwater abstractions or watercourses.
1b. Will the proposed basement extend beneath the water table surface?	Possibly. This will need to be confirmed through additional investigations and further groundwater monitoring.
2. Is the site within 100 m of a watercourse, well (used/ disused) or potential spring line?	Yes. The site is bordered to the south by the Regent's Canal and the River Fleet flowed beneath the site in a southerly direction, which has since been culverted and forms part of the sewer systems.
3. Is the site within the catchment of the pond chains on Hampstead Heath?	No. The Site lies outside the catchment of Hampstead Heath ponds.
4. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No. The footprint of the proposed new building is the same as the existing footprint.
5. As part of the site drainage, will more surface water (e.g. rainfall and run-off) than at present be discharged to the ground (e.g. via soakaways and/or SUDS)?	No. The low permeable nature of the London Clay strata is unsuitable for receiving discharge to ground.
6. Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to or lower than, the mean water level in any local pond or spring line?	Possibly.

The above assessment has identified the following potential issues that need to be assessed:

Q1b The proposed basement may possible extend below the water surface table.
Q2 The site is within 100 m of a former watercourse.
Q6 The lowest point of the proposed exaction may extend below the mean water level in any local pond or springline.

3.1.2 Stability Screening Assessment

Question	Response for 140-146 Camden Street
1. Does the existing site include slopes, natural or manmade, greater than 7°?	No
2. Will the proposed re-profiling of landscaping at the site change slopes at the property boundary to more than 7°?	No
3. Does the development neighbour land, including railway cuttings and the like, with a slope greater than 7°?	No
4. Is the site within a wider hillside setting in which the general slope is greater than 7°?	No
5. Is the London Clay the shallowest strata at the site?	Yes, the site is underlain by London Clay.
6. Will any trees be felled as part of the proposed development and / or are any works proposed within any tree protection zones where trees are to be retained?	Unlikely. There are three trees present along the pavement of Bonny Street.
7. Is there a history of seasonal shrink-swell subsidence in the local area and / or evidence of such effects at the site?	Yes. The area is prone to these effects as a result of the presence of shrinkable London Clay.
8. Is the site within 100 m of a watercourse or potential spring line?	Yes
9. Is the site within an area of previously worked ground?	No
10. Is the site within an aquifer?	No
11. Is the site within 50 m of Hampstead Heath ponds?	No
12. Is the site within 5 m of a highway or pedestrian right of way?	Yes, the site fronts onto Camden Street to the west and Bonny Street to the north.
13. Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties?	No. The development will increase foundation depths to depths of roughly 3.80 m. The depths of foundations of the adjacent property to the east of the site are not known, but it is assumed that the foundations of the building to the south are deeper than proposed as the neighbouring property has a basement.
14. Is the site over (or within the exclusion zone of) any tunnels, eg railway lines?	Yes. The site is located over the Fleet Sewer.

The above assessment has identified the following potential issues that need to be assessed:

Q5 The London Clay is the shallowest stratum at the site
Q6 Three trees are present along the pavement of Bonny Street outside the site
Q7 The site is underlain by London Clay, which is prone to shrink / swell subsidence
Q8 The site is within 100 m of a watercourse
Q12 The site is within 5 m of a public highway
Q14 The site is located over a sewer

3.1.3 Surface Flow and Flooding Screening Assessment

The surface flow screening assessment below is provided for guidance only as we are not qualified in accordance with the requirements with CPG4.

Question	Response for 140-146 Camden Street
1. Is the site within the catchment of the pond chains on Hampstead Heath?	No
2. As part of the proposed site drainage, will surface water flows (e.g. volume of rainfall and peak run-off) be materially changed from the existing route?	No
3. Will the proposed basement development result in a change in the proportion of hard surfaced / paved areas?	No
4. Will the proposed basement development result in changes to the profile of the inflows (instantaneous and long term) of surface water being received by adjacent properties or downstream watercourses?	No
5. Will the proposed basement result in changes to the quantity of surface water being received by adjacent properties or downstream watercourses?	No
6. Is the site in an area known to be at risk from surface water flooding such as South Hampstead, West Hampstead, Gospel Oak and Kings Cross, or is it at risk of flooding because the proposed basement is below the static water level of a nearby surface water feature?	No

The above assessment has not identified any potential issues that need to be assessed.

4.0 SCOPING AND SITE INVESTIGATION

The purpose of scoping is to assess in more detail the factors to be investigated in the impact assessment. Potential consequences are assessed for each of the identified potential impact factors.

4.1 Potential Impacts

The following potential impacts have been identified.

Potential Impact	Possible Consequence
London Clay is the shallowest strata at the site	The London Clay is prone to seasonal shrink-swell (subsidence and heave).
The London Clay is prone to seasonal shrink / swell (subsidence and heave)	Structural damage of the buildings.
Proposed works may take place within tree root zones.	Damage to roots resulting in death of trees.
Site within 5 m of a highway or pedestrian right of way	Excavation of a basement may result in structural damage to the road or footway.
The site is within 100 m of a watercourse	Seasonal springlines and changes to groundwater regimes within slopes can affect slope stability.
The proposed basement may extend below the groundwater table	This may affect the groundwater flow regime.
Works proposed may be within tree protection zones	Damage to roots resulting in death of the trees.
Site located over the Fleet Sewer	Proposed development may cause damage to sewer. Contact should be made with Thames Water to confirm that the proposed development will not have an influence on the existing tunnel.

These potential impacts have been further assessed through the ground investigation, as detailed below.

5.0 EXPLORATORY WORK

The scope of the works was agreed with the consulting engineers and was designed to provide information to assist with the planning application, with an understanding that additional work will be required in due course to provide additional design information. Therefore, with this in mind and in order to meet the objectives described in Section 1.2, as far as possible within the constraints presented by the access, two window sampler boreholes were carried out within the existing building at ground floor level and basement level and extended to depths of 6.00 m and 5.50 m, respectively.

A standpipe was installed in a single borehole to a depth of 5.30 m below existing basement level, in order to facilitate groundwater monitoring. The standpipe has been monitored on a single occasion to date, approximately two weeks after installation.

All of the above work was carried out under the supervision of a geotechnical engineer from GEA.

A selection of the disturbed samples recovered from the boreholes was submitted to a soil mechanics laboratory for a programme of geotechnical testing and an analytical laboratory for a programme of contamination testing.

The borehole records and results of the laboratory testing are enclosed, together with a site plan indicating the exploratory positions.

5.1 Sampling Strategy

The scope of the works was agreed at a pre-site meeting between the consulting engineers and GEA. The original scope of the works was reduced by the client due to budgetary constraints. It is understood that additional investigations will be undertaken following approval of the planning application.

The borehole positions were agreed on-site between GEA and the consulting engineers to provide optimum coverage of the site with due regard to the proposed development, whilst avoiding the Fleet Sewer. The number of boreholes undertaken was limited due to time constraints. The exploratory work was carried out in Nos 144 and 146 Camden Street.

Laboratory geotechnical classification and strength tests were undertaken on samples of the natural soil.

Three samples of the made ground were subjected to analysis for a range of common industrial contaminants and contamination indicative parameters. For this investigation the analytical suite for the soil included a range of metals, speciation of total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), total cyanide and monohydric phenols. The soil samples were selected to provide a general view of the chemical conditions of the soils that are likely to be involved in a human exposure or groundwater pathway and to provide advice in respect of re-use or for waste disposal classification.

The contamination analyses were carried out at an MCERTs accredited laboratory with the majority of the testing suite accredited to MCERTS standards. Details of the MCERTs accreditation and test methods are included in the Appendix together with the analytical results.

6.0 GROUND CONDITIONS

The investigation has confirmed the expected ground conditions in that, below a moderate to significant thickness of made ground, the London Clay was encountered and proved to the full depth investigated.

6.1 Made Ground

The made ground extended to a depth of 3.80 m below ground floor level and 0.80 m below basement level. In Borehole No 1, the floor slab was 0.35 m thick, with 5 mm diameter rebar at a depth of 0.25 m. Directly beneath the ground floor slab, made ground was encountered, which initially comprised brown sand with flint gravel and occasional fragments of brick, ash and concrete, which extended to a depth of 2.40 m, overlying brown silty clay with rare flint gravel and rare fragments of brick. In Borehole No 2, the floor slab was 0.42 m thick, with 5 mm diameter rebar at a depth of 0.27 m. Directly beneath the basement floor slab, made ground was encountered which comprised brown sand with abundant fragments of brick and rare ash.

No visual or olfactory evidence of contamination was noted in the made ground, apart from the presence of extraneous material such as ash fragments, which can commonly contain elevated concentrations of PAH, including benzo(a)pyrene. Three samples of the made ground have been sent for contamination testing as a precautionary measure and the results are presented in Section 6.4.

6.2 London Clay

Directly beneath the made ground the London Clay was encountered, and initially comprised firm brown silty clay with occasional partings of orange-brown fine sand and silt and varying proportions of flint gravel, which extended to depths of 4.10 m below ground floor level and 1.00 m below basement level. The gravel is likely to be associated with the former course of the River Fleet.

This upper zone was underlain by firm brown mottled grey silty clay with occasional orange-brown partings of fine sand and silt and rare selenite crystals, proved to the maximum depth investigated of 6.00 m below ground level and 5.50 m below basement level.

Fine rootlets were noted from a depth of 4.10 m to 5.50 m in Borehole No 1 and claystones were noted at depths of 1.60 m and 5.50 m in Borehole No 2.

The results of laboratory testing indicate the silty clay of the London Clay to be of moderate to high volume change potential. The naturally reworked London Clay, with varying amounts of gravel is also of moderate volume change potential. In any case, high shrinkability soils should be assumed.

These soils were observed to be free of any evidence of soil contamination.

6.3 Groundwater

Groundwater was encountered during drilling of Borehole No 2, from within the made ground beneath the floor slab at a depth of 0.42 m. A standpipe was installed to a depth of 5.30 m within this borehole and groundwater was measured at a depth of 0.50 m, roughly two weeks after installation.

Groundwater was not encountered in Borehole No 1. It was not possible to install a standpipe in this borehole as the sides of the borehole were collapsing due to instability of the made ground.

6.4 Soil Contamination

The table below sets out the values measured within three samples of made ground analysed. All concentrations are in mg/kg unless otherwise stated.

Determinant	BH1: 0.50 m	BH1: 3.00 m	BH2: 0.60 m
Arsenic	20	22	19
Cadmium	0.13	0.13	<0.10
Chromium	24	44	23
Copper	14	30	25
Mercury	<0.10	0.25	0.34
Nickel	22	41	24
Lead	93	110	120
Selenium	<0.20	0.41	<0.21
Zinc	59	74	51
Total Cyanide	<0.50	<0.50	<0.50
Total Phenols	<0.3	<0.3	<0.3
Sulphide	1.5	1.5	7.3
Sodium Chloride g/l	0.025	0.014	0.039
Total PAH	**35**	<2	<2
Benzo(a)pyrene	**5.6**	<0.1	<0.1
Naphthalene	<0.1	<0.1	<0.1
TPH	120	13	<10
Total Organic Carbon %	0.36	1.1	0.37

Notes: Figure in **bold** indicates concentration in excess of risk-based soil guideline values, as discussed in Part 2 of this report

6.4.1 Generic Quantitative Risk Assessment

The use of a risk-based approach has been adopted to provide an initial screening of the test results to assess the need for subsequent site-specific risk assessments. To this end contaminants of concern are those that have values in excess of a generic human health risk

based guideline values which are either that of the CLEA[5] Soil Guideline Value where available, or is a Generic Guideline Value calculated using the CLEA UK Version 1.06 software assuming a residential end use. The key generic assumptions for this end use are as follows:

- that groundwater will not be a critical risk receptor;
- that the critical receptor for human health will be young female children aged zero to six years old;
- that the exposure duration will be six years;
- that the critical exposure pathways will be direct soil and indoor dust ingestion, consumption of homegrown produce, consumption of soil adhering to homegrown produce, skin contact with soils and indoor dust, and inhalation of indoor and outdoor dust and vapours; and
- that the building type equates to a two-storey small terraced house.

It is considered that these assumptions are acceptable for this generic assessment of this site, albeit conservative as the proposed redevelopment comprises an end use comprising a mixture of residential and commercial with some soft landscaped and the growing of homegrown produce is considered unlikely. The tables of generic screening values derived by GEA and an explanation of how each value has been derived are included in the Appendix.

Where contaminant concentrations are measured at concentrations below the generic screening value it is considered that they pose an acceptable level of risk and thus further consideration of these contaminant concentrations is not required. However where concentrations are measured in excess of these generic screening values there is considered to be a potential that they could pose an unacceptable risk and thus further action will be required which could include;

- additional testing to zone the extent of the contaminated material and thus reduce the uncertainty with regard to its potential risk;
- site specific risk assessment to refine the assessment criteria and allow an assessment to be made as to whether the concentration present would pose an unacceptable risk at this site; or
- soil remediation or risk management to mitigate the risk posed by the contaminant to a degree that it poses an acceptable risk.

The chemical analyses has revealed elevated concentrations of total PAH including benzo(a)pyrene and the other constituent PAH of dibenzo(a,h)anthracene. These concentrations could thus pose a potentially unacceptable risk to human health through direct contact, accidental ingestion or inhalation of soil or soil derived dust. No other contaminants were in excess of the generic risk-based screening values for a residential end-use with plant uptake.

The significance of these results is considered further in Part 2 of the report.

5 *Updated Technical Background to the CLEA Model (Science Report SC050021/SR3) Jan 2009* and Soil Guideline Value reports for specific contaminants; all DEFRA and Environment Agency.

Part 2: DESIGN BASIS REPORT

This section of the report provides an interpretation of the findings detailed in Part 1, in the form of a ground model, and then provides advice and recommendations with respect to foundation options and contamination issues.

7.0 INTRODUCTION

It is understood that it is proposed to demolish the existing building and construct a new building comprised of five storeys and eight storeys, incorporating the existing single level basement, which will be extended to the north. The proposed new basement beneath the northern part of the site will extend to a depth of roughly 3.80 m below existing ground floor level. The new building will comprise a mixture of residential and commercial end use, which will incorporate soft landscaped and garden areas.

Anticipated loads of the proposed development are not known at this stage.

8.0 GROUND MODEL

The desk study has revealed that the site was occupied by what appears to be two pairs of semi-detached houses, with front and rear gardens prior to 1875, which were demolished and subsequently replaced by a warehouse at some time between 1954 and 1982. A number of works and factories were located within 250 m of the site. Based on the historical usage of the site and potentially contaminative activities close to the site, there is a potential for localised contamination from both on and off-site sources.

On the basis of the investigation carried out, the ground conditions at this site can be characterised as follows:

- beneath a moderate to significant thickness of made ground, London Clay is present and was proved to the full depth investigated;
- the made ground extends to depths of 3.80 m and 0.80 m below ground floor level and basement level respectively and generally comprises brown sand or silty clay with occasional fragments of brick, ash and concrete;
- the London Clay initially comprises firm brown silty clay, with varying amounts of gravel, which extends to depths of between 4.10 m and 1.00 m below ground floor level and basement level respectively;
- this upper zone is underlain by firm brown mottled grey silty clay with occasional partings of orange-brown fine sand and silt and rare selenite crystals and was proved to the maximum depth investigated of 6.00 m and 5.50 m below ground floor level and basement level respectively;
- groundwater was encountered during the drilling of Borehole No 2, from within the made ground beneath the floor slab at a depth of 0.42 m;

- a standpipe was installed to a depth of 5.30 m within Borehole No 2 and water was measured at a depth of 0.50 m, roughly two weeks after installation; and
- the contamination testing has revealed elevated concentrations of Total PAH, including benzo(a)pyrene and the other constituent PAH of dibenzo(a,h)anthracene within a single sample of made ground.

9.0 ADVICE AND RECOMMENDATIONS

The proposed new basement extension will extend to a depth of approximately 3.80 m below current ground floor level and formation level is likely to be within the firm London Clay.

It is understood through discussions and drawings provided by the consulting engineers that the existing basement is supported on piled foundations, whilst the northern half of the building, without a basement, is understood to have spread foundations.

The construction of a new building may result in changes to the distribution of the loads applied by the existing building, although it may be possible to re-use the existing piled footings to support the loads of the new building in the southern part of the site. Once information on the existing and proposed loads becomes available a check should be made on the likely settlement.

Where new foundations are required, the London Clay should provide an eminently suitable bearing stratum for spread foundations, provided that groundwater inflows can be controlled and proposed loads are not high. Alternatively consideration may be given to piled foundations, although a deep borehole would be required in this respect to provide parameters for pile design.

9.1 Basement Construction

9.1.1 Basement Excavation

Currently the existing basement is located in the southern part of the site and extends to a depth of 3.80 m below existing ground floor level. It is proposed to lower the existing ground floor level by 3.80 m in the northern part of the site, extending the existing basement under the whole footprint of the site. The existing spread footings in the northern part of the site will need to be underpinned or supported by new retaining walls.

Formation level for the 3.80 m deep basement below existing ground floor level is likely to be within the firm brown silty gravelly clay of the London Clay. Significant groundwater inflows are not anticipated to be encountered during basement excavation. However, localised perched water may be encountered within the made ground, particularly in the vicinity of existing foundations and services and within thin partings of silt rather than in continuous layers and gravelly layer of the London Clay.

It is not possible to draw entirely meaningful conclusions from the measurements made in the standpipe installed in Borehole No 2, as the level of the water is not necessarily as significant as the volume of water that may flow into the excavation. For example, a high level of water measured in a standpipe may not be significant if this represents only a small volume of water. A potential source of water is from the Regent's canal if it is leaking.

Additional standpipes will need to be installed as part of additional investigations to confirm the level of the water table. It would also be prudent to carry out some trial pits once access becomes available to the full depth of the basement excavation or carry out pumping trials to check the rate of inflows, which should be relatively slow and localised and should be adequately dealt with through sump pumping.

The design of basement support in the temporary and permanent conditions needs to take account of the need to maintain the stability of the excavation and surrounding structures, and to protect against groundwater inflows. The choice of wall may however be governed to a large extent by the access restrictions, but it is understood that a contiguous bored piled wall is the favoured option.

The area of the proposed basement extension is bounded by party walls and these walls will to a large extent serve as retaining walls for the new basement excavation. It may be possible to form the retaining walls by mass concrete underpinning of the existing spread foundations in the northern half of the site, using a traditional 'hit and miss' approach, provided that trial excavations indicate that problematic groundwater inflows will not be encountered. Careful workmanship will be required to ensure that movement of the surrounding structures does not arise.

Alternatively sheet piles could be installed as a temporary measure to ensure the stability of the basement and overcome the need for groundwater control, prior to the construction of a permanent structure following the completion of the basement excavation. Consideration for the installation of sheet piles will need to be given to noise and vibrations and if these are deemed unacceptable a pressing technique may need to be adopted, although pressing techniques that use water jetting should be treated with caution in view of the risk of causing heave or settlement of the surrounding structures.

A bored pile retaining wall is likely to be the most appropriate means of supporting the excavation and would have the advantage of being incorporated into the permanent works and being able to provide support for structural loads. On the assumption that limited groundwater inflows will be encountered, it should be possible to adopt a contiguous bored pile wall, with the use of localised grouting and / or sump pumping if necessary. A contiguous bored piled wall would however have the disadvantage of reducing usable space in the basement, and in this respect a secant wall may be preferable as it would overcome the requirement for any secondary groundwater protection in the permanent works and maximise the basement area.

The ground movements associated with the basement excavation will depend on the method of excavation and support and the overall stiffness of the basement structure in the temporary condition. Thus, a suitable amount of propping will be required to provide the necessary rigidity. In this respect the timing of the provision of support to the wall will have an important effect on movements. Consideration will need to be given to a retention system that maintains the stability at all times of neighbouring properties and structures.

9.1.2 Basement Retaining Wall

The parameters overleaf are suggested for the design of the new retaining walls.

Stratum	Bulk Density (kg/m^3)	Effective Cohesion (c' – kN/m^2)	Effective Friction Angle (ϕ' – degrees)
Made Ground	1700	Zero	20
London Clay	1950	Zero	25

Significant groundwater inflows are unlikely to be encountered and it is recommended that the basement is designed with a water level assumed to be two-thirds of the basement depth, unless a fully effective drainage system can be ensured. It may, however, be possible to review this requirement following additional investigation by means of trial excavations and further monitoring and the advice in BS8102:2009[6] should be followed in this respect.

9.1.3 Basement Heave

The proposed basement excavation which includes lowering of the existing ground floor level in the northern part of the site by about 3.80 m will result in a net unloading which will result in an elastic heave and long term swelling of the London Clay. The effects of the longer term swelling movement will be mitigated to some extent by the load applied by the new foundations. Consideration will need to be given to the effects of differential movement between the northern, where the basement extension is proposed and the southern part of the site.

It would be prudent to conduct a more detailed analysis of these movements once the basement design has been finalised and also consideration will need to be given to the effects of ground movements on the Fleet Sewer.

9.2 Spread Foundations

All new foundations or underpins should bypass the made ground, which was found to extend to a depth of 3.80 m below existing ground floor level, and may be deeper than this, particularly in closer proximity to the existing Fleet Sewer.

The excavation of the basement will extend to a depth of approximately 3.80 m below existing ground floor level and formation level is likely to be within the firm brown silty gravelly clay of the London Clay, which should provide an eminently suitable bearing stratum for spread foundations excavated from basement level. Groundwater is unlikely to be encountered within the basement excavation, although some groundwater inflows may be encountered from perched water within silt partings of the London Clay and in the vicinity of existing foundations and made ground, but these should be adequately dealt with by sump pumping if encountered, but this will need to be confirmed through additional investigations, as discussed in Section 9.1.

Provided that a dry excavation can be maintained, spread foundations excavated from basement level to bear within the firm London Clay may be designed to apply a net allowable bearing pressure of 120 kN/m^2 below the level of basement floor. This value incorporates an adequate factor of safety against bearing capacity failure and should ensure that settlement remains within normal tolerable limits.

6 BS8102 (2009) *Code of practice for protection of below ground structures against water from the ground*

It has been assumed that the proposed basement will be placed below the depth of actual or potential desiccation but this should be checked once the proposals have been finalised. Notwithstanding NHBC guidelines, all foundations should extend beyond the zone of desiccation. In this respect it would be prudent to have all foundation excavations inspected by a suitably experienced engineer.

If it is not possible to construct spread foundations above the water table or proposed loads are high, piled foundations would provide a suitable foundation option.

9.3 Shallow Excavations

On the basis of the borehole findings it is considered that shallow excavations for foundations and services that extend through the made ground are unlikely to remain stable. Where personnel are required to enter excavations, a risk assessment should be carried out and temporary lateral support or battering of the excavation sides considered in order to comply with normal safety requirements.

Inflows of groundwater into shallow excavations from within the gravel layers within the London Clay may be encountered, but are not likely to be significant. Seepages may also be encountered from perched water tables within the made ground, particularly within the vicinity of existing foundations and more silty and sandy pockets within the London Clay, although such inflows should be suitably controlled by sump pumping, although this should be confirmed through additional investigations.

However, should deeper excavations be considered or if excavations are to remain open for prolonged periods it is recommended that provision be made for battered side slopes or lateral support. Where personnel are required to enter excavations, a risk assessment should be carried out and temporary lateral support or battering of the excavation sides considered in order to comply with normal safety requirements.

9.4 Basement Floor Slab

It may be possible to reuse the existing basement slab, which appears to have performed satisfactorily, even though it appears to be bearing on made ground.

Following the excavation of the proposed new basement, the basement floor slab may need to be suspended over a void or layer of compressible material to accommodate the anticipated heave and any potential uplift forces from groundwater pressures unless the slab can be suitably reinforced to cope with these movements. This should be reviewed once the levels and loads are known.

9.5 Effect of Sulphates

Chemical analyses on a single sample of made ground and two samples of London Clay have revealed concentrations of soluble sulphate, corresponding to Class DS-1 to DS-3 of BRE Special Digest 1 Part C (2005). The measured pH value of the samples show that a ACEC class of AC-1s to ACEC AC-3 of Table C2 would be appropriate for the site. This assumes a static water condition at the site. The guidelines contained in the above digest should be followed in the design of foundation concrete.

9.6 Site Specific Risk Assessment

The desk study has revealed that the site was occupied by what appears to be two pairs of semi-detached houses, with front and rear gardens, prior to 1875 which were demolished and subsequently replaced by a warehouse at some time between 1954 and 1982. In the vicinity of the site a number of works and factories were located within 250 m. Based on the historical usage of the site and potentially contaminative activities close to the site, a moderate / low risk of contamination was identified through the desk study research.

The chemical analysis has revealed elevated concentrations of total PAH including benzo(a)pyrene and dibenzo(a,h)anthracene within one of the three samples of made ground tested in excess of the generic risk-based screening values for a residential end-use with plant uptake. Other constituent PAHs were not elevated.

The total PAH concentration was elevated above the guideline value, of 6.3 mg/kg at 35 mg/kg in Borehole No 1 at a depth of 0.50 m. Benzo(a)pyrene was also noted to be elevated at this location above the guideline value of 0.94 mg/kg at 5.6 mg/kg. The other constituent PAH, dibenzo(a,h)anthracene was noted to be marginally elevated above the guideline value of 0.86 mg/kg at 0.88 mg/kg. These concentrations could thus pose a potentially unacceptable risk to human health through direct contact, accidental ingestion or inhalation of soil or soil derived dust.

The likely source of the PAH contamination is fragments of ash noted within the made ground. The PAH compounds within the made ground are considered likely to be of low solubility and a risk to groundwater has not been identified.

End users will be effectively isolated from direct contact with the identified contaminants by the building and areas of external hardstanding. The contamination is likely to be removed as part of the basement excavation and only in proposed gardens or soft landscaped areas could end users conceivably come into direct contact with the contaminated soils and and suitable precautions may need to be taken in these areas to protect end users and to allow successful plant growth. It is however recommended that additional sampling and testing is carried out in the proposed areas of gardens and landscaping to determine the precautions required, once the layout is finalised.

At this stage it is recommended that a cover thickness of imported subsoil and topsoil of 600 mm in thickness should be specified to ensure successful plant growth, in accordance with recommendations from BRE[7]. It may be possible to reduce the final thickness of cover required, but this will need to be determined once final levels have been established and the concentrations of potential contaminants within the imported material is known.

Site workers will be protected from the contamination through adherence to normal high standards of site safety but there may be a requirement for protection of buried plastic services laid within the made ground.

9.6.1 Site Workers

Site workers should be made aware of the contamination and a programme of working should be identified to protect workers handling any soil. The method of site working should be in accordance with guidelines set out by HSE[8] and CIRIA[9] and the requirements of the Local

7 BRE (2004) *Cover systems for land regeneration. Thickness of cover systems for contaminated land.* BRE pub 465
8 HSE (1992) HS(G)66 *Protection of workers and the general public during the development of contaminated land* HMSO
9 CIRIA (1996) *A guide for safe working on contaminated sites* Report 132, Construction Industry Research and Information Association

Authority Environmental Health Officer.

9.6.2 Plastic Services

Consideration may need to be given to the protection of buried plastic services laid within the made ground. Details of the proposed protection measures for buried plastic services will in any case need to be approved by the EHO and the relevant service authority prior to the adoption of any scheme. It is possible that barrier pipe will be required or additional testing will need to be carried out.

9.7 Waste Disposal

Any spoil arising from excavations or landscaping works, which is not to be re-used in accordance with the CL:AIRE guidance[10], will need to be disposed of to a licensed tip. Under the European Waste Directive, waste is classified as being either Hazardous or Non-Hazardous and landfills receiving waste are classified as accepting hazardous or non-hazardous wastes or the non-hazardous sub-category of inert waste in accordance with the Waste Directive. Waste going to landfill is subject to landfill tax at either the standard rate of £64 per tonne (about £120 per m^3) or at the lower rate of £2.50 per tonne (roughly £5 per m^3). However, the classifications for tax purposes and disposal purposes differ and currently all made ground and topsoil is taxable at the 'standard' rate and only naturally occurring rocks and soils, which are accurately described as such in terms of the 2011 Order[11], would qualify for the 'lower rate' of landfill tax.

Based upon on the technical guidance provided by the Environment Agency[12] it is considered likely that the made ground from this site, as represented by the three chemical analyses carried out, would be classified as NON-HAZARDOUS waste under the waste code 17 05 04 (soils and stones not containing dangerous substances) and would be taxable at the standard rate. It is likely that the natural soils, if separated out, could be classified as an INERT waste also under the waste code 17 05 04. This material would be taxable at the lower rate, if accurately described as naturally occurring clay in terms of the 2011 Order on the waste transfer note. This would however need to be confirmed by the receiving landfill site.

Under the requirements of the European Waste Directive all waste needs to be pre-treated prior to disposal. The pre-treatment process must be physical, thermal, chemical or biological, including sorting. It must change the characteristics of the waste in order to reduce its volume, hazardous nature, facilitate handling or enhance recovery. The waste producer can carry out the treatment but they will need to provide documentation to prove that this has been carried out. Alternatively, the treatment can be carried out by an approved contractor. The Environment Agency has issued a position paper[13] which states that in certain circumstances, segregation at source may be considered as pre-treatment and thus excavated material may not have to be treated prior to landfilling if the soils can be "segregated" onsite by sufficiently characterising the soils in-situ prior to excavation.

The above opinion with regard to the classification of the excavated soils and its likely landfill taxable rate is provided for guidance only and should be confirmed by the receiving landfill once the soils to be discarded have been identified.

The local waste regulation department of the Environment Agency (EA) should be contacted

[10] CL:AIRE (2011) *The Definition of Waste: Development Industry Code of Practice* Version 2, March 2011
[11] *Landfill Tax (Qualifying Material) Order 2011*
[12] Environment Agency (2008) *Hazardous Waste: Interpretation of the definition and classification of hazardous waste. Technical Guidance* WM2 Second Edition Version 2.2, May 2008
[13] Regulatory Position Statement (2007) *Treating non-hazardous waste for landfill - Enforcing the new requirement* Environment Agency 23 Oct 2007

to obtain details of tips that are licensed to accept the soil represented by the test results. The tips will be able to provide costs for disposing of this material but may require further testing.

If consideration were to be given to the re-use of the soil as a structural fill on this or another site, in accordance with the Code of Practice for the definition of waste, it would be necessary to confirm its suitability for use, its certainty of use and to confirm that only as much material is to be used as is required for the specific purpose for which it was being used. A materials management plan could then be formulated and a tracking system put in place such that once placed the material would no longer be regarded as being a waste and thus waste management licensing and landfill tax would not apply.

10.0 BASEMENT IMPACT ASSESSMENT

The current development proposal is to demolish the existing building and construct a new building comprised of five storeys and eight storeys, incorporating the existing single level basement, which will be extended to the north. The excavation of the new proposed basement beneath the northern part of the site will extend to a depth of roughly 3.80 m, below existing ground floor level with a formation level likely to be within the firm London Clay.

The former River Fleet was perched on the London Clay and the source of the water was from the springs issuing from Hampstead Heath. The River Fleet has since been culverted, which will receive the water from the Heath. It is possible that Alluvium and granular deposits underlie the site, in the vicinity of the path of the former River Fleet and may surround the Fleet Sewer. However any water encountered locally within these river deposits will not be in continuity with a large body of water and therefore the proposed basement is unlikely to have any significant effect on groundwater levels as it is wholly within the London Clay, which is essentially impermeable and so does not provide any form of cut-off into less permeable strata.

The screening identified a number of potential impacts. The desk study and ground investigation information has been used below to review the potential impacts, to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

The table below summarises the previously identified potential impacts and the additional information that is now available from the site investigation in consideration of each impact.

Potential Impact	Site Investigation Conclusions
Seasonal shrink / swell (subsidence and heave)	The investigation has confirmed that the site is directly underlain by London Clay and plasticity index tests indicate the London Clay to be of moderate volume change potential at the site. Desiccation was not encountered at the locations investigated but may be present towards the northern boundary of the site, where three trees are present along Bonny Street. However it is assumed that the proposed 3.8 m deep basement extension will extend well below the potential depth of root action.
Location of public highway	Bonny Street and Camden Street are both located within 5 m of the basement excavation. A retention system will maintain the stability of the highway.
Tree protection orders – damage to roots	An arboriculturist should be consulted and their advice should be sought for guidance.
Fleet Sewer located directly beneath the site	The proposed development may have implications for the existing sewer. Contact should be made with Thames Water to

Potential Impact	Site Investigation Conclusions
	confirm this.
The site is within 100 m of a watercourse	The former River Fleet used to flow directly beneath the site which has since been culverted and forms part of the sewer system.
The proposed basement may extend below the groundwater table	This is unlikely but will be confirmed through additional investigations. The London Clay beneath the site is characterised by a very low permeability and cannot store or transmit significant quantities of groundwater. The site is not contiguous with other basement structures therefore any groundwater present would be able to flow around the proposed basement. It is not considered that the proposed basement would result in a significant change to the groundwater flow regime in the vicinity of the proposal.
Site located over a sewer	Proposed development may cause damage to sewer.

The results of the site investigation have therefore been used below to review the remaining potential impacts, to assess the likelihood of them occurring and the scope for reasonable engineering mitigation.

Shrink / swell potential of London Clay

Shrinkable clay is present within a depth that can be affected by tree roots. There is no evidence of structural movement within the existing building. The basement depth will extend well below the potential depth of root action.

Location of public highway

The proposed basement excavation will be located within 5 m of Bonny Street and Camden Street. A retention system will be adopted that maintains the stability of the excavation at all times to protect the highway. This is however standard construction practice.

Tree protection orders – damage to roots

An arboriculturist should be consulted for advice.

Proposed basement structure may extend below groundwater table

During the investigations carried out to date, perched water was encountered beneath the basement slab within the made ground of granular nature. It is unlikely that the proposed 3.80 m deep basement will extend below the water table, although this will be confirmed following additional investigations.

Fleet Sewer

The site is located over the Fleet Sewer and piled foundations and the proposed excavation may have implications for the exiting tunnel. Contact should be made with Thames Water to confirm that the proposed development will not impact their infrastructure. It is likely that a detailed ground movement analysis will be required.

11.0 OUTSTANDING RISKS AND ISSUES

This section of the report aims to highlight areas where further work is required as a result of limitations on the scope of this investigation, or where issues have been identified by this investigation that warrant further consideration. The scope of risks and issues discussed in this section is by no means exhaustive, but covers the main areas where additional work is considered to be required.

The ground is a heterogeneous natural material and variations will inevitably arise between the locations at which it is investigated. This report provides an assessment of the ground conditions based on the discrete points at which the ground was sampled, but the ground conditions should be subject to review as the work proceeds to ensure that any variations from the Ground Model are properly assessed by a suitably qualified person.

The main issue that requires careful consideration at this site is the extent to which groundwater will affect the basement excavation in the temporary condition and the level of the water table to be adopted in the permanent design. Recommendations have been made for carrying out trial excavations and further monitoring of standpipes to be installed as part of the additional investigations post-planning to address these issues, but it is important that the contractor is able to deal with inflows of groundwater that may be locally more significant than anticipated in view of the sand and silt pockets within the London Clay.

Additional investigations will be required in due course to provide greater coverage of the site.

Desiccation was not encountered at the exploratory locations investigated. However, it is possible that desiccation is present elsewhere on site. It is assumed that the basement will extend beneath the depth of any potential desiccation; however it is recommended that the basement excavation is inspected by a qualified and experienced geotechnical engineer.

It is recommended that heave movements are checked by further analysis once the loadings and final levels are known.

If during ground works any visual or olfactory evidence of contamination is identified it is recommended that further investigation be carried out and that the risk assessment is reviewed. These areas of doubt should be drawn to the attention of prospective contractors and further investigation will be required or sufficient contingency should be provided to cover the outstanding risk.

Consideration will need to be given to the proposed development on the Thames Water Sewer.

These areas of doubt should be drawn to the attention of prospective contractors and further investigation will be required or sufficient contingency should be provided to cover the outstanding risk.

APPENDIX

GEA Geotechnical & Environmental Associates

Tytenhanger House, Coursers Road, St Albans, AL4 0PG

Site	Number
140 Camden Street London, NW1 9PF	BH1

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler			Elebro Limited	J13304
	Location	**Dates**	**Engineer**	**Sheet**
	Studio at 146 Camden Street	17/10/2013	Price and Myers	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.01) 0.01	Screed		
					(0.24) 0.25	Concrete. Reinforced with 5 mm diameter rebar at a depth of 0.25 m		
0.50	D1				(0.10) 0.35	Rough concrete		
					(0.35) 0.70	MADE GROUND (pale brown sand with very rare flint gravel and occasional fragments of brick and concrete and rare ash)		
1.50	D2				(1.70)	MADE GROUND (brown sand with abundant fragments of brick and occasional concrete and rare ash)		
					2.40			
3.00	D3				(1.40)	MADE GROUND (light brown silty clay with occasional orange-brown and grey sand partings, rare flint gravel and rare fragments of brick)		
					3.80			
3.90	D4				(0.30) 4.10	Firm brown silty CLAY with occasional fine to medium subangular flint gravel and partings of orange-brown fine sand and silt		
4.20	D5					Firm brown mottled grey silty CLAY with occasional orange-brown partings of fine sand and silt and rare selenite crystals. Fine rootlets noted from 4.10 m to 5.50 m		
5.00	D6				(1.90)			
5.50	D7							
6.00	D8				6.00	Complete at 6.00m		

Remarks
Sides of borehole did not remain stable during drilling - borehole kept collapsing to a depth of 1.60 m. Not possible to install standpipe
Concrete slab cored with a 200 mm diameter core barrell
Groundwater not encountered

Scale (approx)	Logged By
1:50	HD

Figure No. J13304.BH1

GEA Geotechnical & Environmental Associates	Tyttenhanger House, Coursers Road, St Albans, AL4 0PG	Site: 140 Camden Street, London, NW1 9PF	Number: BH2
Excavation Method: Drive-in Window Sampler	Dimensions	Ground Level (mOD)	Client: Elebro Limited	Job Number: J13304
	Location: Basement level of 144 Camden Road	Dates: 17/10/2013	Engineer: Price and Myers	Sheet: 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.05) 0.05	Screed		
					(0.22) 0.27	Concrete. Reinforced with 5 mm diameter rebar at a depth of 0.27 m		
					(0.10) 0.37	Concrete		
0.60	D1				(0.05) 0.42	Rough concrete		
0.90	D2				(0.38) 0.80	MADE GROUND (brown sand with abundant fragments of brick and rare ash)		
1.00	D3				(0.20) 1.00	Firm orange-brown silty CLAY with occasional orange-brown partings of fine sand and silt and rare fine to medium subangular flint gravel		
1.50	D4					Firm brown mottled grey silty CLAY with occasional orange-brown partings of fine sand and silt and rare selenite crystals. Claystone encountered at depths of 1.60 m and 5.50 m		
2.00	D5							
2.50	D6							
3.00	D7				(4.50)			
3.50	D8							
4.00	D9							
4.50	D10							
5.00	D11							
5.50	D12				5.50	Complete at 5.50m		

Remarks
Concrete slab cored with a 127 mm diameter core barrell
Groundwater encountered beneath slab at at a depth of 0.42 m
Standpipe installed to a depth of 5.30 m - response zone from 1.00 m to 5.30 m
Groundwater measured at a depth of 0.50 m on 31/10/2013

Scale (approx): 1:50
Logged By: HD
Figure No.: J13304.BH2

Project Name:	140 Camden Street, London, NW1 9PF			Samples Received:	21/10/2013	K4 SOILS
				Project Started:	22/10/2013	
Client:	GEA			Testing Started:	05/11/2013	
Project No:	J13304	Our job/report no:	15493	Date Reported:	06/11/2013	

Borehole No:	Sample No:	Depth (m)	Description	Moisture content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing 0.425 mm (%)	Remarks
BH1	D4	3.90	Brown very gravelly CLAY (gravel is fm and angular to rounded)	22	58	23	35	27	
BH1	D6	5.00	Brown and occasional blue grey CLAY	23	65	27	38	100	
BH2	D3	1.00	Brown and occasional blue grey slightly gravelly CLAY (gravel is fm and rounded to sub-rounded)	23	64	25	39	89	
BH2	D9	4.00	Brown and occasional blue grey and orange CLAY with scattered traces of selenite	25	69	30	39	100	

Summary of Test Results

BS 1377 : Part 2 : Clause 4.4 : 1990 Determination of the liquid limit by the cone penetrometer method.
BS 1377 : Part 2 : Clause 5 : 1990 Determination of the plastic limit and plasticity index.
BS 1377 : Part 2 : Clause 3.2 : 1990 Determination of the moisture content by the oven-drying method.

UKAS TESTING 2519

Checked and Approved
Initials: K.P
Date: 06/11/2013

Test Report by K4 SOILS LABORATORY Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

Test Results relate only to the sample numbers shown above. Approved Signatories: K.Phaure (Tech.Mgr) J.Phaure (Lab.Mgr)

All samples connected with this report ,incl any on 'hold' will be stored and disposed off according to Company policy.Acopy of this policy is available on request. MSF-11/R2

GEA
Tyttenhanger House
Coursers Road
St Albans Herts
AL4 0PG

FAO Hannah Dashfield

LABORATORY TEST REPORT

Results of analysis of 3 samples received 21 October 2013

J13304- 140 Camden Street

Chemtest
The right chemistry to deliver results

Report Date
05 November 2013

Login Batch No					242371		
Chemtest LIMS ID					AJ31629	AJ31630	AJ31631
Sample ID					BH1	BH1	BH2
Sample No							
Sampling Date					17/10/2013	17/10/2013	17/10/2013
Depth					0.5m	3.0m	0.6m
Matrix					*SOIL*	*SOIL*	*SOIL*
SOP↓	Determinand↓	CAS No↓	Units↓	*			
2030	Moisture		%	M	11.1	12.1	21.9
	Stones content (>50mm)		%	M	<0.02	<0.02	<0.02
2040	Soil colour			M	brown	brown	brown
	Soil texture			M	sand	clay	sand
	Other material			M	stones	stones	stones
2010	pH			M	10.6	8.3	8.4
2300	Cyanide (total)	57125	mg kg^{-1}	M	<0.50	<0.50	<0.50
2325	Sulfide (Easily Liberatable)	18496258	mg kg^{-1}	M	1.5	1.5	7.3
2625	Total Organic Carbon		%	M	0.36	1.1	0.37
2220	Chloride (extractable)	16887006	g l^{-1}	M	0.025	0.014	0.039
2120	Sulfate (2:1 water soluble) as SO4	14808798	g l^{-1}	M	1.1		
2430	Sulfate (total) as SO4		mg kg^{-1}	M	4500	900	2000
2450	Arsenic	7440382	mg kg^{-1}	M	20	22	19
	Cadmium	7440439	mg kg^{-1}	M	0.13	0.13	<0.10
	Chromium	7440473	mg kg^{-1}	M	24	44	23
	Copper	7440508	mg kg^{-1}	M	14	30	25
	Mercury	7439976	mg kg^{-1}	M	<0.10	0.25	0.34
	Nickel	7440020	mg kg^{-1}	M	22	41	24
	Lead	7439921	mg kg^{-1}	M	93	110	120
	Selenium	7782492	mg kg^{-1}	M	<0.20	0.41	<0.20
	Zinc	7440666	mg kg^{-1}	M	59	74	51
2670	TPH >C5-C6		mg kg^{-1}	U	< 0.1	< 0.1	< 0.1
	TPH >C6-C7		mg kg^{-1}	U	< 0.1	< 0.1	< 0.1
	TPH >C7-C8		mg kg^{-1}	M	< 0.1	< 0.1	< 0.1

All tests undertaken between 21/10/2013 and 01/11/2013

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1
Report page 1 of 2
LIMS sample ID range AJ31629 to AJ31631

K4 SOILS

Project Name: 140 Camden Street, London, NW1 9PF
Client: GEA
Project no: J13304
Our job no: 15493

Summary of Test Results

BS 1377 : Part 3 :Clause 5 : 1990
Determination of sulphate content of soil and ground water : gravimetric method

Borehole No:	Sample No:	Depth m	Description	pH	Sulphate content (g/l)
BH1	D2	1.50	Brown SAND with numerous fmc brick fragments	7.1	2.46
BH1	D5	4.20	Brown mottled blue grey CLAY with scattered traces of selenite	7.1	0.24
BH2	D4	1.50	Brown mottled blue grey CLAY	7.1	0.22

Checked and Approved
Initials : kp

Date 06/11/2013

Unit 8 Olds Close Olds Approach Watford Herts WD18 9RU

GEA
Tyttenhanger House
Coursers Road
St Albans Herts
AL4 0PG

FAO Hannah Dashfield

LABORATORY TEST REPORT

Results of analysis of 3 samples
received 21 October 2013

J13304- 140 Camden Street

Chemtest
The right chemistry to deliver results

Report Date
05 November 2013

				242371		
				AJ31629	AJ31630	AJ31631
				BH1	BH1	BH2
				17/10/2013	17/10/2013	17/10/2013
				0.5m	3.0m	0.6m
				SOIL	SOIL	SOIL
2670	TPH >C8-C10		M	< 0.1	< 0.1	< 0.1
	TPH >C10-C12	mg kg-1	M	< 0.1	< 0.1	< 0.1
	TPH >C12-C16	mg kg-1	M	0.93	< 0.1	< 0.1
	TPH >C16-C21	mg kg-1	M	10	1.3	0.31
	TPH >C21-C35	mg kg-1	M	110	11	< 0.1
	Total Petroleum Hydrocarbons	mg kg-1	U	120	13	< 10
2700	Naphthalene	91203 mg kg-1	M	< 0.1	< 0.1	< 0.1
	Acenaphthylene	208968 mg kg-1	M	0.15	< 0.1	< 0.1
	Acenaphthene	83329 mg kg-1	M	< 0.1	< 0.1	< 0.1
	Fluorene	86737 mg kg-1	M	< 0.1	< 0.1	< 0.1
	Phenanthrene	85018 mg kg-1	M	0.12	< 0.1	0.2
	Anthracene	120127 mg kg-1	M	< 0.1	< 0.1	< 0.1
	Fluoranthene	206440 mg kg-1	M	1.4	< 0.1	0.24
	Pyrene	129000 mg kg-1	M	1.4	< 0.1	0.16
	Benzo[a]anthracene	56553 mg kg-1	M	2.5	< 0.1	< 0.1
	Chrysene	218019 mg kg-1	M	3.6	< 0.1	0.11
	Benzo[b]fluoranthene	205992 mg kg-1	N	4.8	< 0.1	< 0.1
	Benzo[k]fluoranthene	207089 mg kg-1	N	4.2	< 0.1	< 0.1
	Benzo[a]pyrene	50328 mg kg-1	M	5.6	< 0.1	< 0.1
	Dibenzo[a,h]anthracene	53703 mg kg-1	M	0.88	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395 mg kg-1	M	5	< 0.1	< 0.1
	Benzo[g,h,i]perylene	191242 mg kg-1	M	5.3	< 0.1	< 0.1
	Total (of 16) PAHs	mg kg-1	M	35	< 2	< 2
2920	Phenols (total)	mg kg-1	M	<0.3	<0.3	<0.3

All tests undertaken between 21/10/2013 and 01/11/2013

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

GEA Geotechnical & Environmental Associates

Tyttenhanger House
Coursers Road
St Albans
AL4 0PG

Generic Risk-Based Soil Guideline Values

Site	140 Camden Street, London, NW1 9PF	**Job Number**	J13304
Client	Elebro Limited	**Sheet**	1 / 1
Engineer	Price & Myers		

Proposed End Use Residential with plant uptake

Soil pH 8

Soil Organic Matter content % 2.5

Contaminant	Guideline Value mg/kg	Data Source
Metals		
Arsenic	32	SGV
Cadmium	10	SGV
Chromium (III)	3000	LQM/CIEH
Chromium (VI)	4.3	LQM/CIEH
Copper	2,330	LQM/CIEH
Lead	450	withdrawn SGV
Elemental Mercury	1	SGV
Inorganic Mercury	170	SGV
Nickel	130	LQM/CIEH
Selenium	350	SGV
Zinc	3,750	LQM/CIEH
Hydrocarbons		
Benzene	0.18	SGV
Toluene	320	SGV
Ethyl Benzene	180	SGV
Xylene	120	SGV
Aliphatic C5-C6	55	LQM/CIEH
Aliphatic C6-C8	160	LQM/CIEH
Aliphatic C8-C10	46	LQM/CIEH
Aliphatic C10-C12	230	LQM/CIEH
Aliphatic C12-C16	1700	LQM/CIEH
Aliphatic C16-C35	64,000	LQM/CIEH
Aromatic C6-C7	See Benzene	LQM/CIEH
Aromatic C7-C8	See Toluene	LQM/CIEH
Aromatic C8-C10	65	LQM/CIEH
Aromatic C10-C12	160	LQM/CIEH
Aromatic C12-C16	310	LQM/CIEH
Aromatic C16-C21	480	LQM/CIEH
Aromatic C21-C35	1100	LQM/CIEH
PRO (C_5 –C_{10})	646	Calc
DRO (C_{12} –C_{28})	66,490	Calc
Lube Oil (C_{28} –C_{44})	65,100	Calc
TPH	**1000**	Trigger for speciated testing

Contaminant	Guideline Value mg/kg	Data Source
Anions		
Soluble Sulphate	0.5 g/l	Structures
Sulphide	50	Structures
Chloride	400	Structures
Others		
Organic Carbon (%)	6	Methanogenic potential
Total Cyanide	140	WRAS
Total Mono Phenols	290	SGV
PAH		
Naphthalene	3.70	LQM/CIEH
Acenaphthylene	400	LQM/CIEH
Acenaphthene	480	LQM/CIEH
Fluorene	380	LQM/CIEH
Phenanthrene	200	LQM/CIEH
Anthracene	4,900	LQM/CIEH
Fluoranthene	460	LQM/CIEH
Pyrene	1,000	LQM/CIEH
Benzo(a) Anthracene	4.7	LQM/CIEH
Chrysene	8	LQM/CIEH
Benzo(b) Fluoranthene	6.5	LQM/CIEH
Benzo(k) Fluoranthene	9.6	LQM/CIEH
Benzo(a) pyrene	0.94	LQM/CIEH
Indeno(1 2 3 cd) Pyrene	3.9	LQM/CIEH
Dibenzo(a h) Anthracene	0.86	LQM/CIEH
Benzo (g h i) Perylene	46	LQM/CIEH
Total PAH	**6.3**	B(a)P / 0.15
Chlorinated Solvents		
1,1,1 trichloroethane (TCA)	12.9	LQM/CIEH
tetrachloroethane (PCA)	2.1	LQM/CIEH
tetrachloroethene (PCE)	2.1	LQM/CIEH
trichloroethene (TCE)	0.22	LQM/CIEH
1,2-dichloroethane (DCA)	0.008	LQM/CIEH
vinyl chloride (Chloroethene)	0.00064	LQM/CIEH
tetrachloromethane (Carbon tetra	0.039	LQM/CIEH
trichloromethane (Chloroform)	1.3	LQM/CIEH

Notes

Concentrations measured below the above values may be considered to represent 'uncontaminated conditions' which do not pose a risk to human health. Concentrations measured in excess of these valuesindicate a potential risk, and thus require further, site specific risk assessment.

SGV - Soil Guideline Value, derived from the CLEA model and published by Environment Agency 2009

withdrawn SGV - Former SGV, derived from the CLEA 2000 model and published by DEFRA pending confirmation of new approach to modeling lead

LQM/CIEH - Generic Assessment Criteria for Human Health Risk Assessment 2nd edition (2009)derived using CLEA 1.04 model 2009

Calc - sum of nearest available carbon range specified including BTEX for PRO fraction

B(a)P / 0.15 - GEA experince indicates that Benzo(a) pyrene (one of the most common and most carcenogenic of the PAHs) rarely exceeds 15% of the total PAH concentration, hence this Total PAH threshold is regarded as being conservative

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
49935449_1_1

Customer Reference:
J13304

National Grid Reference:
529080, 184130

Slice:
A

Site Area (Ha):
0.01

Search Buffer (m):
1000

Site Details:

Alternative S M T Ltd
140-146 Camden Street
LONDON
NW1 9PF

Client Details:

Mr S Branch
GEA Ltd
Tyttenhanger House
Coursers Road
St Albans
Herts
AL4 0PG

Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.

In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v47.0

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1			2	1
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 1		1	2	18
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature	pg 4		Yes		
Pollution Incidents to Controlled Waters	pg 4		1		2
Prosecutions Relating to Authorised Processes	pg 5				1
Prosecutions Relating to Controlled Waters					
Registered Radioactive Substances	pg 5			5	14
River Quality	pg 8		2		
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 8			1	
Water Abstractions	pg 9				14 (*12)
Water Industry Act Referrals					
Groundwater Vulnerability	pg 15	Yes	n/a	n/a	n/a
Bedrock Aquifer Designations	pg 15	Yes	n/a	n/a	n/a
Superficial Aquifer Designations			n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences				n/a	n/a
Flooding from Rivers or Sea without Defences				n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 16			1	4
Local Authority Recorded Landfill Sites					
Registered Landfill Sites					
Registered Waste Transfer Sites	pg 17			3	2
Registered Waste Treatment or Disposal Sites	pg 19				3

GEA Geotechnical & Environmental Associates

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					
Geological					
BGS 1:625,000 Solid Geology	pg 20	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 20	Yes	Yes		Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 21			Yes	Yes
BGS Urban Soil Chemistry Averages	pg 24	Yes			
Brine Compensation Area			n/a	n/a	n/a
Coal Mining Affected Areas			n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 24	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards				n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 24	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards				n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 24	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 26		41	74	194
Fuel Station Entries	pg 51			1	7

Order Number: 49935449_1_1 Date: 10-Oct-2013 rpr_ec_datasheet v47.0 A Landmark Information Group Service

GEA Geotechnical & Environmental Associates

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					

GEA Geotechnical & Environmental Associates

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: The Jim Henson Studio Property Type: Recreational & Cultural Location: 30 Oval Road, Camden Town, London, Nw1 7de Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CATM.2853 Permit Version: 1 Effective Date: 1st April 1997 Issued Date: 1st April 1997 Revocation Date: 30th September 2005 Discharge Type: Trade Discharges - Cooling Water Discharge Environment: Canal Receiving Water: Guc - Paddington Arm **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A12SE (W)	483	1	528600 184050
1	**Discharge Consents** Operator: Rushes Motion Control Property Type: Recreational & Cultural Location: 30 Oval Road, Camden Town, London, Nw1 7de Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: Cntm.1566 Permit Version: 1 Effective Date: 1st September 1994 Issued Date: 1st September 1994 Revocation Date: 1st October 1996 Discharge Type: Trade Discharges - Cooling Water Discharge Environment: Freshwater Stream/River Receiving Water: Guc - Paddington Arm **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A12SE (W)	483	1	528600 184050
2	**Discharge Consents** Operator: National Grid Company Plc. Property Type: Production & Distribution Of Electricity Location: Fitzroy Bridge Outlet, Primrosehill, Camden, London Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTMR.0387 Permit Version: 1 Effective Date: 28th March 1980 Issued Date: 28th March 1980 Revocation Date: Not Supplied Discharge Type: Trade Discharges - Cooling Water Discharge Environment: Canal Receiving Water: Grand Unioncanal **Status: Transferred from Rivers (Prevention of Pollution) Act 1951-1961** Positional Accuracy: Located by supplier to within 100m	A12SW (W)	746	1	528360 183920
3	**Local Authority Pollution Prevention and Controls** Name: Camden Cleaners Location: 122 Camden Road, London, Nw1 9ee Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC32/06 Dated: 25th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A13NE (NE)	196	2	529240 184236
4	**Local Authority Pollution Prevention and Controls** Name: W Starling Location: 9 -11 Leybourne Road, CAMDEN, NW1 8QY Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC1 Dated: 9th January 1996 Process Type: Local Authority Pollution Prevention and Control Description: PG6/34 Respraying of road vehicles **Status: Permitted** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	2	528811 184208

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
5	**Local Authority Pollution Prevention and Controls** Name: Paradise Cleaners Ltd Location: 58 Parkway, London, Nw1 7ah Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC39 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	490	2	528753 183762
6	**Local Authority Pollution Prevention and Controls** Name: Esso Location: 29 Chalk Farm Road, LONDON, NW1 8AG Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC15 Dated: 24th December 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	534	2	528567 184291
7	**Local Authority Pollution Prevention and Controls** Name: Smart Dry Cleaners Location: 104 Parkway, London, Nw1 7an Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC20 Dated: 26th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	599	2	528685 183676
7	**Local Authority Pollution Prevention and Controls** Name: Jet Petrol Station Location: 120 Parkway, LONDON, NW1 7NY Authority: London Borough of Camden, Pollution Projects Team Permit Reference: Not Given Dated: 11th December 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	646	2	528655 183640
8	**Local Authority Pollution Prevention and Controls** Name: Wm Morrisons Supermarkets Plc Location: Chalk Farm Road, London, Nw1 8aa Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC1 Dated: 26th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A12NE (W)	637	2	528439 184146
9	**Local Authority Pollution Prevention and Controls** Name: Prince Of Wales Dry Cleaners Location: 17 Prince Of Wales Road, London, Nw5 3lh Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC/DC12 Dated: 12th January 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A18SW (NW)	641	2	528777 184696
10	**Local Authority Pollution Prevention and Controls** Name: Tesco Location: 196-206 Camden Road, LONDON, NW1 9HG Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC14 Dated: 12th September 1998 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Authorised** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	657	2	529541 184593

Geotechnical & Environmental Associates

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
17	**Local Authority Pollution Prevention and Controls** Name: Texaco Location: 81-85 Chalk Farm Road, LONDON, NW1 8AR Authority: London Borough of Camden, Pollution Projects Team Permit Reference: NOT GIVEN Dated: 24th December 1998 Process Type: Local Authority Air Pollution Control Description: PG1/14 Petrol filling station **Status: Site Closed** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	845	2	528269 184381
18	**Local Authority Pollution Prevention and Controls** Name: Lex Volvo Location: 1 Dumpton Place, Gloucester Avenue, Chalk Farm, LONDON, NW1 8JB Authority: London Borough of Camden, Pollution Projects Team Permit Reference: Not Given Dated: 7th January 1994 Process Type: Local Authority Air Pollution Control Description: PG6/34 Respraying of road vehicles **Status: Authorised** Positional Accuracy: Manually positioned to the address or location	A12NW (W)	911	2	528165 184138
19	**Local Authority Pollution Prevention and Controls** Name: Castle Cement Ltd Location: Kings Cross Depot, York Way, London, N1 0AU Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC6 Dated: 15th June 1992 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	967	2	530039 184052
19	**Local Authority Pollution Prevention and Controls** Name: Hanson Products Europe Ltd Location: British Rail Goods Yard, York Way, Camden, N1 0AU Authority: London Borough of Camden, Pollution Projects Team Permit Reference: PPC8 Dated: 11th October 1993 Process Type: Local Authority Pollution Prevention and Control Description: PG3/1Blending, packing, loading and use of bulk cement **Status: Permitted** Positional Accuracy: Located by supplier to within 10m	A14SE (E)	985	2	530056 184043
20	**Local Authority Pollution Prevention and Controls** Name: Royal Mail Property Holdings Ltd Location: 1 Regis Road, LONDON, NW5 3EW Authority: London Borough of Camden, Pollution Projects Team Permit Reference: Not Given Dated: Not Supplied Process Type: Local Authority Air Pollution Control Description: PG6/10 Coating manufacturing **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the road within the address or location	A18NW (N)	975	2	528875 185083
	Nearest Surface Water Feature	A13SE (SE)	23	-	529087 184110
21	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: LONDON Authority: Environment Agency, Thames Region Pollutant: Oils - Unknown Note: Not Supplied Incident Date: 15th January 1996 Incident Reference: SE960036 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NE (N)	123	1	529100 184250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
22	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Prince Albert Road Authority: Environment Agency, Thames Region Pollutant: Not Given Note: Confirmed incident Incident Date: 4th April 1999 Incident Reference: THNE1999043097 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Approximate location provided by supplier	A7NW (SW)	887	1	528300 183700
23	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: CAMDEN TOWN Authority: Environment Agency, Thames Region Pollutant: Miscellaneous - Natural Note: Not Supplied Incident Date: 11th August 1998 Incident Reference: THNE1998039947 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	898	1	529800 183600
24	**Prosecutions Relating to Authorised Processes** Location: Regents Park Road, London, Nw1 Prosecution Text: Failure to comply with packaging waste regulations Prosecution Act: Pro97 Hearing Date: 6th September 2007 Verdict: Guilty Fine: 85000 Costs: 8836 Positional Accuracy: Manually positioned to the road within the address or location	A7NW (SW)	957	1	528192 183763
25	**Registered Radioactive Substances** Name: Proxima Concepts Location: Royal College Street,, LONDON, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: Br9600 Dated: 5th September 2002 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Application has been authorised and any conditions apply to the operatorAuthorised** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (SE)	305	1	529326 183956
26	**Registered Radioactive Substances** Name: Spirogen Ltd Location: 2, Royal College Street, London, NW1 0NH Authority: Environment Agency, Thames Region Permit Reference: CA5052 Dated: 20th December 2006 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Automatically positioned to the address	A13SW (S)	350	1	528965 183798
26	**Registered Radioactive Substances** Name: Spirogen Ltd Location: 2, Royal College Street, London, NW1 0NH Authority: Environment Agency, Thames Region Permit Reference: CA5079 Dated: 20th December 2006 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Automatically positioned to the address	A13SW (S)	350	1	528965 183798

Geotechnical & Environmental Associates

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**Registered Radioactive Substances** Name: Unilabs Clinical Pathology Location: Bewlay House, 32 Jamestown Road, LONDON, Greater London, NW1 7BY Authority: Environment Agency, Thames Region Permit Reference: BC2742 Dated: 21st October 1998 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Application made in error** Positional Accuracy: Unknown	A12SE (W)	420	1	528671 184018
27	**Registered Radioactive Substances** Name: Omnilabs (Uk) Ltd Location: Bewlay House, 32 Jamestown Road, LONDON, Greater London, NW1 7BY Authority: Environment Agency, Thames Region Permit Reference: AE8755 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Unknown	A12SE (W)	447	1	528642 184022
28	**Registered Radioactive Substances** Name: Gene Expression Technologies Ltd (Dissolved) Location: Royal College Street, London, Nw1 0tu Authority: Environment Agency, Thames Region Permit Reference: Bt4478 Dated: 25th November 2002 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	605	1	529476 183677
29	**Registered Radioactive Substances** Name: Proxima Concepts Location: Royal College Street, London, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: Br9618 Dated: 5th September 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Application has been authorised and any conditions apply to the operatorAuthorised** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	676	1	529548 183646
29	**Registered Radioactive Substances** Name: Royal Veterinary College Location: University Of London, Royal College Street, LONDON, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: Bi1188 Dated: 9th June 2000 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Minor variation to authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	676	1	529548 183646
29	**Registered Radioactive Substances** Name: Royal Veterinary College Location: University Of London,Royal College Street, LONDON, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: CC8028 Dated: 27th January 2009 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Substantial variation to authorisation under RSA **Status: Application has been authorised and any conditions apply to the operatorAuthorised** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	677	1	529548 183645

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
29	**Registered Radioactive Substances** Name: Royal Veterinary College Location: The Beaumont Animals Hospital, Royal College Street, LONDON, Greater London, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: AE5268 Dated: 31st March 1991 Process Type: Registration under S7 RSA for the keeping and use of Radioactive materials (was RSA60 S1) Description: Registration under the Act of an open source which is also the subject of an authorisation **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	681	1	529548 183641
29	**Registered Radioactive Substances** Name: Royal Veterinary College Location: The Beaumont Animals Hospital, Royal College Street, LONDON, Greater London, NW1 0TU Authority: Environment Agency, Thames Region Permit Reference: AQ1510 Dated: 28th March 1995 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation superseded by a substantial or non substantial variationSuperseded** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	684	1	529553 183641
30	**Registered Radioactive Substances** Name: Gene Expression Technologies Ltd (Dissolved) Location: Royal College Street, London, Nw1 0tu Authority: Environment Agency, Thames Region Permit Reference: Bt4460 Dated: 25th November 2002 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Manually positioned to the road within the address or location	A9NW (SE)	677	1	529512 183613
31	**Registered Radioactive Substances** Name: London School Of Hygiene And Tropical Medicine Location: St. Pancras Hospital, 4 St. Pancras Way, LONDON, Greater London, NW1 0PE Authority: Environment Agency, Thames Region Permit Reference: AC4503 Dated: 31st March 1991 Process Type: Authorisation under S13 RSA for the disposal of Radioactive waste (was RSA60 S7) Description: Authorisation under RSA **Status: Authorisation either revoked or cancelledCancelled** Positional Accuracy: Unknown	A9NW (SE)	806	1	529689 183607
	River Quality Name: Guc (Paddington Arm) GQA Grade: River Quality E Reach: Canal Feeder - Camden Road Estimated Distance (km): 10.5 Flow Rate: Flow greater than 80 cumecs Flow Type: Canal Year: 2000	A13SW (S)	93	1	529064 184038
	River Quality Name: Guc (Regent'S Canal) GQA Grade: River Quality C Reach: Camden Road - Hertford Union Estimated Distance (km): 7.1 Flow Rate: Flow greater than 80 cumecs Flow Type: Canal Year: 2000	A13SE (SE)	143	1	529172 184024
32	**Substantiated Pollution Incident Register** Authority: Environment Agency - Thames Region, North East Area Incident Date: 9th February 2008 Incident Reference: 562771 Water Impact: Category 4 - No Impact Air Impact: Category 2 - Significant Incident Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Atmospheric Pollutants And Effects: Smoke	A12NE (W)	365	1	528712 184151

Geotechnical & Environmental Associates

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
33	**Water Abstractions** Operator: Canal And River Trust Licence Number: 28/39/39/0164 Permit Version: 101 Location: Southampton Bridge, London, Nw8 - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th December 2007 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (W)	587	1	528500 184020
33	**Water Abstractions** Operator: British Waterways Board Licence Number: 28/39/39/0164 Permit Version: 100 Location: Southampton Bridge, London, Nw8 - Regents Canal Authority: Environment Agency, Thames Region Abstraction: Amenity: Spray Irrigation - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 3840 Yearly Rate (m3): 1 Details: Pipeline Alongside The Regents Canal, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th April 1983 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (W)	587	1	528500 184020
33	**Water Abstractions** Operator: British Waterways Licence Number: 28/39/39/0164B Permit Version: Not Supplied Location: Southampton Bridge, LONDON, Nw8 Authority: Environment Agency, Thames Region Abstraction: Industrial Cooling (Cegb) Abstraction Type: Not Supplied Source: River Daily Rate (m3): 3840 Yearly Rate (m3): 1 Details: Annual Abstraction Total Aggregated To Another Licence For Quantity Purposes. Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12SE (W)	591	1	528500 184000
33	**Water Abstractions** Operator: British Waterways Board Licence Number: 28/39/39/0173 Permit Version: 100 Location: Oval Road, Camden - Grand Union Regents Canal Authority: Environment Agency, Thames Region Abstraction: Other Industrial/Commercial/Public Services: Non-Evaporative Cooling Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 20 Yearly Rate (m3): 7000 Details: Land At Oval Road, Camden, London Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th December 1994 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (W)	596	1	528490 184020

Agency & Hydrological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Thames Water Utilities Ltd Licence Number: 28/39/39/0207 Permit Version: 1 Location: Barnard Park, Islington - Borehole Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Specified S.46(4) Water Resources Act 1991 Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th January 2004 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1994	1	531020 183690
	Water Abstractions Operator: Thames Water Utilities Ltd Licence Number: Th/039/0039/057 Permit Version: 1 Location: Borehole At Barnard Park Authority: Environment Agency, Thames Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 April Authorised End: 31 March Permit Start Date: 1st April 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(E)	1998	1	531022 183681
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 39 West London Scale: 1:100,000	A13NE (W)	0	1	529076 184130
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Desination: Unproductive Strata	A13NE (W)	0	3	529076 184130
	Superficial Aquifer Designations No Data Available				
	Extreme Flooding from Rivers or Sea without Defences None				
	Flooding from Rivers or Sea without Defences None				
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				

Waste

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
37	**Licensed Waste Management Facilities (Locations)** Licence Number: 80482 Location: 28 Jamestown Road, London, NW1 7BY Operator Name: Camden London Borough Council Operator Location: Not Supplied Authority: Environment Agency - South East Region, North East Thames Area Site Category: Household Waste Amenity Sites **Licence Status: Surrendered** Issued: 15th October 1994 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 25th July 1997 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (W)	420	1	528667 184035
38	**Licensed Waste Management Facilities (Locations)** Licence Number: 80302 Location: 7 St Pancras Way, London, NW1 0PB Operator Name: Arbuckle William David Operator Location: Not Supplied Authority: Environment Agency - South East Region, North East Thames Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Issued** Issued: 5th June 1997 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NW (SE)	736	1	529591 183605
39	**Licensed Waste Management Facilities (Locations)** Licence Number: 80310 Location: off, York Way, Kings Cross, London, NW1 Operator Name: Murphy Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, North East Thames Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Surrendered** Issued: 4th September 1995 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 6th August 2002 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14SE (E)	789	1	529843 183948
40	**Licensed Waste Management Facilities (Locations)** Licence Number: 80341 Location: 1-2 Engineers Cottages York Way, London, N1 0BA Operator Name: York Way Metals Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, North East Thames Area Site Category: Metal Recycling Sites (Mixed) **Licence Status: Surrendered** Issued: 11th November 1996 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 29th October 1999 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A14SE (E)	835	1	529900 184000
41	**Licensed Waste Management Facilities (Locations)** Licence Number: 80299 Location: Kings Cross Goods Depot, Goods Way, Kings Cross, London, NW1 Operator Name: GRS (Roadstone) Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, North East Thames Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Surrendered** Issued: 30th March 1993 Last Modified: 18th September 1997 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 15th October 2002 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9NE (SE)	917	1	529908 183746

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Local Authority Landfill Coverage Name: London Borough of Camden - Has no landfill data to supply		0	6	529076 184130
	Local Authority Landfill Coverage Name: Westminster City Council - Has supplied landfill data		969	7	528216 183684
42	**Registered Waste Transfer Sites** Licence Holder: N.L.W.A. Licence Reference: CR/018 Site Location: Jamestown Road, CAMDEN, London, NW1 Operator Location: Camden Town Hall, Euston Road, CAMDEN, London, NW1 2RU Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer - Road Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st June 1977 Preceded By Licence: Not Given Superseded By Licence: DL251 Positional Accuracy: Manually positioned to the road within the address or location Boundary Quality: Not Supplied Authorised Waste: Civic Amenity/Refuse Amenity Waste House, Com + Ind.Waste Waste Oil Prohibited Waste: Clinical Wastes Difficult Waste N.O.S	A13SW (W)	351	1	528750 184000
43	**Registered Waste Transfer Sites** Licence Holder: L.B. of Camden Licence Reference: DL251 Site Location: Jamestown Road Recycling Centre, 28 Jamestown Road, CAMDEN, London, NW1 Operator Location: Old Town Hall, Haverstock Hill, CAMDEN, London, NW3 4QP Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Licence has completion certificateSurrendered Dated: 5th October 1994 Preceded By Licence: DL251 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Lead/Acid Batteries Lwra Cat. A = Inert Wastes Lwra Cat. Bi Gen.Non-Putresc Mineral Oils Mostlwra Cat. C 'Putresc' Some Lwra Cat Bii Gen. Scrap Metal W. W.For Recyling (Cats A, Bi, C) Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes N.O.S. Waste N.O.S.	A12SE (W)	401	1	528690 184020

Geotechnical & Environmental Associates

Waste

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
43	**Registered Waste Transfer Sites** Licence Holder: L.B. of Camden Licence Reference: DL251 Site Location: 28 Jamestown Road, CAMDEN, London, NW1 Operator Location: Old Town Hall, Haverstock Hill, CAMDEN, London, NW3 4QP Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st April 1987 Preceded By Licence: CR/018 Superseded By Licence: DL251 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Civic Amenity/Refuse Amenity Waste Max.Waste Permitted By Licence(Stated) Metal Scrap Waste Mineral Oil Prohibited Waste: Clinical Wastes Notifiable Wastes Special Wastes	A12SE (W)	401	1	528690 184020
44	**Registered Waste Transfer Sites** Licence Holder: Murphy Ltd Licence Reference: DL599 Site Location: Br Goods Yard, Off York Way, Kings Cross, London, Nw1 Operator Location: 2 Ashley House, Ashley Road, LONDON, Greater London, N17 9LZ Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Small (Equal to or greater than 10,000 and less than 25,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 4th September 1995 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Located by supplier to within 100m Boundary Quality: Not Supplied Authorised Waste: Dry Cell Batteries Electric Cable/Wire Max.Waste Permitted By Licence Most Lwra Cat. A = Inert Wastes Solidified Tar, Pitch, Bitumen Wood, Paper, Plastics, Tincans, Cement Prohibited Waste: Clinical - As In Coll/Disp.Regs Of '88 Special Wastes Waste N.O.S.	A14SE (E)	788	1	529840 183940
45	**Registered Waste Transfer Sites** Licence Holder: Rutland (Haulage) Ltd Licence Reference: DL241 Site Location: 2 Camley Street, KINGS CROSS, London, NW1 Operator Location: 64 Pancras Road, Kings Cross, CAMDEN, London, NW1 Authority: Environment Agency - Thames Region, North East Area Site Category: Transfer Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Licence Status: Record supersededSuperseded Dated: 1st December 1986 Preceded By Licence: Not Given Superseded By Licence: DL241 Positional Accuracy: Manually positioned to the address or location Boundary Quality: Not Supplied Authorised Waste: Commercial Waste Construction Ind. Wastes Max.Waste Permitted By Licence(Stated) Prohibited Waste: Clinical Wastes Notifiable Wastes Putrescible Waste Special Wastes	A9SW (SE)	871	1	529620 183450

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: London Clay	A13NE (W)	0	3	529076 184130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NE (W)	0	4	529076 184130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13NW (W)	76	4	529000 184130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13SE (S)	130	4	529076 184000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A13SW (SW)	151	4	529000 184000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A18NE (N)	871	4	529076 185000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A18NW (N)	874	4	529000 185000

Geotechnical & Environmental Associates

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A14NE (E)	925	4	530000 184130
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: London Arsenic Concentration: no data Cadmium Concentration: no data Chromium Concentration: no data Lead Concentration: no data Nickel Concentration: no data	A14SE (E)	934	4	530000 184000
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 528869, 184298 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 14.00 mg/kg Cadmium Measured Concentration: 0.30 mg/kg Chromium Measured Concentration: 88.00 mg/kg Lead Measured Concentration: 1420.00 mg/kg Nickel Measured Concentration: 28.00 mg/kg	A13NW (NW)	267	3	528869 184298
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 529298, 184298 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.00 mg/kg Cadmium Measured Concentration: 0.60 mg/kg Chromium Measured Concentration: 80.00 mg/kg Lead Measured Concentration: 1603.00 mg/kg Nickel Measured Concentration: 31.00 mg/kg	A13NE (NE)	279	3	529298 184298
	BGS Measured Urban Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Grid: 529183, 183833 Soil Sample Type: Topsoil Sample Area: London Arsenic Measured Concentration: 16.00 mg/kg Cadmium Measured Concentration: 4.90 mg/kg Chromium Measured Concentration: 109.00 mg/kg Lead Measured Concentration: 248.00 mg/kg Nickel Measured Concentration: 37.00 mg/kg	A13SE (S)	316	3	529183 183833

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Urban Soil Chemistry Averages Source: British Geological Survey, National Geoscience Information Service Sample Area: London Count Id: 7189 Arsenic Minimum Concentration: 1.00 mg/kg Arsenic Average Concentration: 17.00 mg/kg Arsenic Maximum Concentration: 161.00 mg/kg Cadmium Minimum Concentration: 0.30 mg/kg Cadmium Average Concentration: 0.90 mg/kg Cadmium Maximum Concentration: 165.20 mg/kg Chromium Minimum Concentration: 13.00 mg/kg Chromium Average Concentration: 79.00 mg/kg Chromium Maximum Concentration: 2094.00 mg/kg Lead Minimum Concentration: 11.00 mg/kg Lead Average Concentration: 280.00 mg/kg Lead Maximum Concentration: 10000.00 mg/kg Nickel Minimum Concentration: 2.00 mg/kg Nickel Average Concentration: 28.00 mg/kg Nickel Maximum Concentration: 506.00 mg/kg	A13NE (W)	0	3	529076 184130
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130
	Potential for Ground Dissolution Stability Hazards No Hazard				
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	51	3	529070 184180
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (N)	99	3	529068 184227
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	129	3	529199 184165
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130

Geotechnical & Environmental Associates

Geological

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Radon Potential - Radon Affected Areas Affected Area: The property is in a lower probability radon area, as less than 1% of homes are above the action level Source: British Geological Survey, National Geoscience Information Service	A13NE (W)	0	3	529076 184130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
48	**Contemporary Trade Directory Entries** Name: Diamond Roach Location: 1a, Bonny Street, London, NW1 9PE Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	44	-	529074 184173
49	**Contemporary Trade Directory Entries** Name: Warren Evans Location: 3a, Prowse Place, London, NW1 9PH Classification: Bed & Mattress Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	56	-	529063 184184
49	**Contemporary Trade Directory Entries** Name: Motorweld Location: 11-14, Ivor Street, London, NW1 9PJ Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A13NW (N)	104	-	529064 184233
49	**Contemporary Trade Directory Entries** Name: Sun & Seed Location: 7, Ivor Street, London, NW1 9PL Classification: Food Products - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (N)	135	-	529071 184264
49	**Contemporary Trade Directory Entries** Name: Key Production (London) Ltd Location: 7-8, Jeffreys Place, London, NW1 9PP Classification: Record, Tape & CD Manufacturers & Wholesalers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (N)	149	-	529057 184277
50	**Contemporary Trade Directory Entries** Name: Clearest Colour Print Location: 17-19, Bonny Street, London, NW1 9PE Classification: Printers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	77	-	529127 184187
50	**Contemporary Trade Directory Entries** Name: C & D Print Solutions Location: 17-19, Bonny Street, London, NW1 9PE Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	77	-	529127 184187
51	**Contemporary Trade Directory Entries** Name: E D C Technology Location: 88-90, Camden Road, London, NW1 9EA Classification: Carpet, Curtain & Upholstery Cleaners **Status: Active** Positional Accuracy: Manually positioned to the address or location	A13SE (E)	103	-	529177 184113
51	**Contemporary Trade Directory Entries** Name: Proform Uk Ltd Location: 88-90, Camden Road, London, NW1 9EA Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	103	-	529177 184113
51	**Contemporary Trade Directory Entries** Name: Service Point Location: 203, Royal College Street, London, NW1 0SG Classification: Copying & Duplicating Machines & Supplies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	152	-	529226 184112
52	**Contemporary Trade Directory Entries** Name: Urgent Detergent Location: 160, Camden Street, London, NW1 9PT Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	125	-	529006 184233
52	**Contemporary Trade Directory Entries** Name: Urgent Detergent Location: 160, Camden Street, London, NW1 9PT Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	125	-	529006 184233

GEA Geotechnical & Environmental Associates

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
53	**Contemporary Trade Directory Entries** Name: Terminix Peter Cox Ltd Location: 231, Royal College Street, London, NW1 9LT Classification: Damp & Dry Rot Control **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	131	-	529153 184235
54	**Contemporary Trade Directory Entries** Name: Arthur'S Location: 49 Kentish Town Rd, London, NW1 8NX Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13NW (NW)	144	-	528947 184193
55	**Contemporary Trade Directory Entries** Name: Camden Bike Breakers Location: 178b, Royal College Street, London, NW1 0SP Classification: Motor Cycle Breakers & Dismantlers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	146	-	529212 184179
55	**Contemporary Trade Directory Entries** Name: Blaire Air Conditioning Location: 176, Royal College Street, London, NW1 0SP Classification: Air Conditioning & Refrigeration Contractors **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (E)	152	-	529223 184166
55	**Contemporary Trade Directory Entries** Name: Camden Tyre Services Location: 166, Royal College Street, London, NW1 0SP Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	168	-	529242 184151
56	**Contemporary Trade Directory Entries** Name: Nk Print & Design Location: 186, Royal College Street, London, NW1 9NN Classification: Printers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	153	-	529181 184240
56	**Contemporary Trade Directory Entries** Name: Radiance Printers Location: Execo House, 182, Royal College Street, London, NW1 9NN Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	155	-	529189 184234
56	**Contemporary Trade Directory Entries** Name: Heaven Location: 112a Camden Rd, London, NW1 9EE Classification: Dry Cleaners **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (NE)	160	-	529210 184216
56	**Contemporary Trade Directory Entries** Name: D Jansen Location: 65, Camden Road, London, NW1 9EU Classification: Gas Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	177	-	529203 184251
56	**Contemporary Trade Directory Entries** Name: Home Cleaning (London) Location: 69, Camden Road, London, NW1 9EU Classification: Cleaning Services - Domestic **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	188	-	529214 184257
57	**Contemporary Trade Directory Entries** Name: Stars Digital Ltd Location: 47, Kentish Town Road, London, NW1 8NX Classification: Photo & Digital Imaging Bureaus **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	159	-	528930 184194
57	**Contemporary Trade Directory Entries** Name: Cross Design & Print Location: 47, Kentish Town Road, London, NW1 8NX Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NW (NW)	159	-	528930 184194

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
57	**Contemporary Trade Directory Entries** Name: E Supplier Ltd Location: 49, Kentish Town Road, London, NW1 8NX Classification: T-Shirts **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	184	-	528914 184217
57	**Contemporary Trade Directory Entries** Name: Adam Engineering Ltd Location: 49, Kentish Town Road, London, NW1 8NX Classification: Metal Workers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	184	-	528914 184217
57	**Contemporary Trade Directory Entries** Name: Victory Motorcycles Location: 49, Kentish Town Road, London, NW1 8NX Classification: Motor Cycle Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	184	-	528914 184217
57	**Contemporary Trade Directory Entries** Name: The Fremantle Corporation Location: 2, Water Lane, London, NW1 8NZ Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	200	-	528886 184192
57	**Contemporary Trade Directory Entries** Name: Jacks Motors Location: 2, Torbay Street, London, NW1 8RR Classification: Mot Testing Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	225	-	528876 184230
57	**Contemporary Trade Directory Entries** Name: J F S Location: 2a, Torbay Street, London, NW1 8RR Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	225	-	528876 184230
57	**Contemporary Trade Directory Entries** Name: Prowers Place Autos Location: 2, Torbay Street, London, NW1 8RR Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	225	-	528876 184230
57	**Contemporary Trade Directory Entries** Name: Harry Motors Location: 17, Leybourne Road, London, NW1 8QY Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	227	-	528866 184214
58	**Contemporary Trade Directory Entries** Name: Think Tank Media Location: 7-8, Jeffreys Place, London, NW1 9PP Classification: Printers **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13NW (N)	171	-	529058 184299
59	**Contemporary Trade Directory Entries** Name: C & M Cars & Ecobikes Location: 152 Royal College St, London, NW1 0TA Classification: Car Dealers - Used **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SE (E)	189	-	529262 184098
60	**Contemporary Trade Directory Entries** Name: Rapha Racing Location: 22-24, Camden Road, London, NW1 9DP Classification: Leisure & Sportswear Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (S)	193	-	529009 183949
61	**Contemporary Trade Directory Entries** Name: Pegram Bianco Location: 183, Royal College Street, London, NW1 0SG Classification: Cabinet Makers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	205	-	529260 184041

Geotechnical & Environmental Associates

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	**Contemporary Trade Directory Entries** Name: S E I Bass Location: 142, Royal College Street, London, NW1 0TA Classification: Musical Instrument - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (E)	229	-	529290 184049
62	**Contemporary Trade Directory Entries** Name: Ideal Cars Location: Randolph St, London, NW1 0SS Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (E)	209	-	529282 184160
62	**Contemporary Trade Directory Entries** Name: Panther Office Ltd Location: 38, Bruges Place, London, NW1 0TL Classification: Office Furniture & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	228	-	529303 184134
63	**Contemporary Trade Directory Entries** Name: Mikes Coachworks Ltd Location: 8, Torbay Street, London, NW1 8RR Classification: Car Body Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	235	-	528875 184251
63	**Contemporary Trade Directory Entries** Name: James Phelps Ltd Location: 9, Hawley Road, London, NW1 8RP Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	269	-	528852 184278
63	**Contemporary Trade Directory Entries** Name: Phelps Location: 9, Hawley Road, London, NW1 8RP Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (NW)	269	-	528852 184278
64	**Contemporary Trade Directory Entries** Name: Buchanan Motors Location: 128a, Camden Road, London, NW1 9EE Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	236	-	529263 184273
65	**Contemporary Trade Directory Entries** Name: Stock Motors Co Location: 77-79 Randolph St, London, NW1 0SR Classification: Garage Services **Status: Active** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (E)	255	-	529324 184187
65	**Contemporary Trade Directory Entries** Name: Burlington Camden Location: 90-94, Baynes Street, London, NW1 0TZ Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	278	-	529352 184157
65	**Contemporary Trade Directory Entries** Name: Burlingtons Camden Location: 90-94, Baynes Street, London, NW1 0TZ Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	278	-	529352 184157
65	**Contemporary Trade Directory Entries** Name: 88 Car Repairs Location: 87 Baynes St, London, NW1 0TZ Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13NE (E)	285	-	529360 184146
66	**Contemporary Trade Directory Entries** Name: Infolink Communications Ltd Location: 2, Camden Road, London, NW1 9DL Classification: Telecommunications Equipment & Systems **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	258	-	528954 183902

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	**Contemporary Trade Directory Entries** Name: Morton Stockwell Location: 14, Leybourne Road, London, NW1 8QY Classification: Classic Car Specialists **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	258	-	528831 184210
67	**Contemporary Trade Directory Entries** Name: R J Motors Location: 8, Leybourne Road, London, NW1 8QY Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned in the proximity of the address	A13NW (W)	266	-	528830 184230
67	**Contemporary Trade Directory Entries** Name: R T Coachworks Location: 8, Leybourne Road, London, NW1 8QY Classification: Car Body Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	266	-	528830 184230
67	**Contemporary Trade Directory Entries** Name: K & P Coachwork Location: 12, Leybourne Road, London, NW1 8QY Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	271	-	528817 184209
67	**Contemporary Trade Directory Entries** Name: F & A Motors Location: 10, Leybourne Road, London, NW1 8QY Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	-	528811 184208
67	**Contemporary Trade Directory Entries** Name: W Starling Location: 9-11, Leybourne Road, London, NW1 8QY Classification: Car Body Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	-	528811 184208
67	**Contemporary Trade Directory Entries** Name: Ardi Location: 9-11, Leybourne Road, London, NW1 8QY Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	276	-	528811 184208
67	**Contemporary Trade Directory Entries** Name: Totos Car Clinic Location: 10-11 Leybourne Rd, London, NW1 8QY Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NW (W)	278	-	528810 184208
67	**Contemporary Trade Directory Entries** Name: Davey Autos Ltd Location: 6, Haven Street, London, NW1 8QX Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	300	-	528782 184184
67	**Contemporary Trade Directory Entries** Name: A J Autos Location: 6, Haven Street, London, NW1 8QX Classification: Car Engine Tuning & Diagnostic Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (W)	300	-	528782 184184
68	**Contemporary Trade Directory Entries** Name: Metalhead Location: 220, Camden High Street, London, NW1 8QR Classification: T-Shirts **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (W)	270	-	528819 184049
68	**Contemporary Trade Directory Entries** Name: Leather Land Location: 230, Camden High Street, London, NW1 8QS Classification: Leather Garments & Products **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (W)	289	-	528791 184081

Geotechnical & Environmental Associates

Industrial Land Use

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
68	**Contemporary Trade Directory Entries** Name: Leather Clad Location: 247, Camden High Street, London, NW1 7BU Classification: Leather Garments & Products **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SW (SW)	297	-	528807 184004
69	**Contemporary Trade Directory Entries** Name: Digital Bate.Net Ltd Location: Unit 9, 43, Carol Street, London, NW1 0HT Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (S)	272	-	529041 183860
69	**Contemporary Trade Directory Entries** Name: Vrsion Ltd Location: Unit 1, 43, Carol Street, London, NW1 0HT Classification: Photographic Equipment & Supplies - Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SW (S)	272	-	529041 183860
69	**Contemporary Trade Directory Entries** Name: Skin2hide Ltd Location: Unit 6, 43, Carol Street, London, NW1 0HT Classification: Clothing Accessory Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13SW (S)	272	-	529041 183860
70	**Contemporary Trade Directory Entries** Name: P B P Services Ltd Location: 88, Camden Street, London, NW1 0JA Classification: Commercial Cleaning Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	276	-	529204 183886
71	**Contemporary Trade Directory Entries** Name: Brian Crisp Location: 1, Wilmot Place, London, NW1 9JS Classification: Photographic Processors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (N)	292	-	529141 184414
72	**Contemporary Trade Directory Entries** Name: Foot Locker (Uk) Ltd Location: 195, Camden High Street, London, NW1 7BT Classification: Leisure & Sportswear Manufacturers & Wholesalers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	317	-	528864 183893
73	**Contemporary Trade Directory Entries** Name: Finesse Ltd Location: Unit 7, St. Pancras Commercial Centre, Pratt Street, London, NW1 0BY Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	330	-	529376 183993
73	**Contemporary Trade Directory Entries** Name: Rugina Ltd Location: Unit 7, St. Pancras Commercial Centre, Pratt Street, London, NW1 0BY Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	330	-	529376 183993
73	**Contemporary Trade Directory Entries** Name: Big Apple Clothing Co Ltd Location: Unit 3, St. Pancras Commercial Centre, Pratt Street, London, NW1 0BY Classification: Clothing & Fabrics - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	334	-	529348 183938
73	**Contemporary Trade Directory Entries** Name: Akermans Chocolates Ltd Location: Unit 11, St. Pancras Commercial Centre, Pratt Street, London, NW1 0BY Classification: Confectionery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	366	-	529395 183953
74	**Contemporary Trade Directory Entries** Name: D Webster & Son Location: 109, Kentish Town Road, London, NW1 8PB Classification: Joinery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NW (N)	334	-	528960 184442

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
196	**Contemporary Trade Directory Entries** Name: Peplink Design Location: Unit 4,Church Studios,Camden Pk Rd, London, NW1 9AY Classification: Leather Products - Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	981	-	529814 184774
197	**Contemporary Trade Directory Entries** Name: Hanson Pre-Mix Location: Kings Cross, London, N1 0AU Classification: Concrete & Mortar Ready Mixed **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A14SE (E)	982	-	530056 184080
198	**Contemporary Trade Directory Entries** Name: Butcher Ltd Location: 8, Fitzroy Road, London, NW1 8TX Classification: Plaster Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A12SW (W)	987	-	528090 184099
199	**Contemporary Trade Directory Entries** Name: Stonegate Cleaning Location: Flat 4, Stonegate, St. Silas Place, London, NW5 3QP Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A17SW (NW)	993	-	528235 184657
200	**Contemporary Trade Directory Entries** Name: Medical Optics Ltd Location: Unit 1, Dove Commercial Centre, 109, Bartholomew Road, London, NW5 2BJ Classification: Medical Equipment Maintenance & Repairs **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (N)	997	-	529426 185063
200	**Contemporary Trade Directory Entries** Name: Basis Lighting Ltd Location: Unit 3-4, Dove Commercial Centre, 109, Bartholomew Road, London, NW5 2BJ Classification: Lighting Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A19NW (N)	997	-	529426 185063
200	**Contemporary Trade Directory Entries** Name: Elizabeth Neville Location: Dove Commercial Centre, 109, Bartholomew Road, London, NW5 2BJ Classification: Bookbinders **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (N)	997	-	529426 185063
201	**Contemporary Trade Directory Entries** Name: A4 Office Furniture Location: 32, Goldington Street, London, NW1 1UE Classification: Office Furniture & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	998	-	529701 183353
201	**Contemporary Trade Directory Entries** Name: A4 Office Furniture Location: 32, Goldington Street, London, NW1 1UE Classification: Office Furniture & Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	998	-	529701 183353
202	**Fuel Station Entries** Name: Mark Kass Location: 85-89, Camden Road, Camden Town,, LONDON, Greater London, NW1 9EX Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	365	-	529285 184428
203	**Fuel Station Entries** Name: Morrisons Camden Location: Chalk Farm Road, Chalk Farm, London, Greater London, NW1 8AA Brand: Morrisons Premises Type: Hypermarket **Status: Open** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	530	-	528547 184151

Geotechnical & Environmental Associates

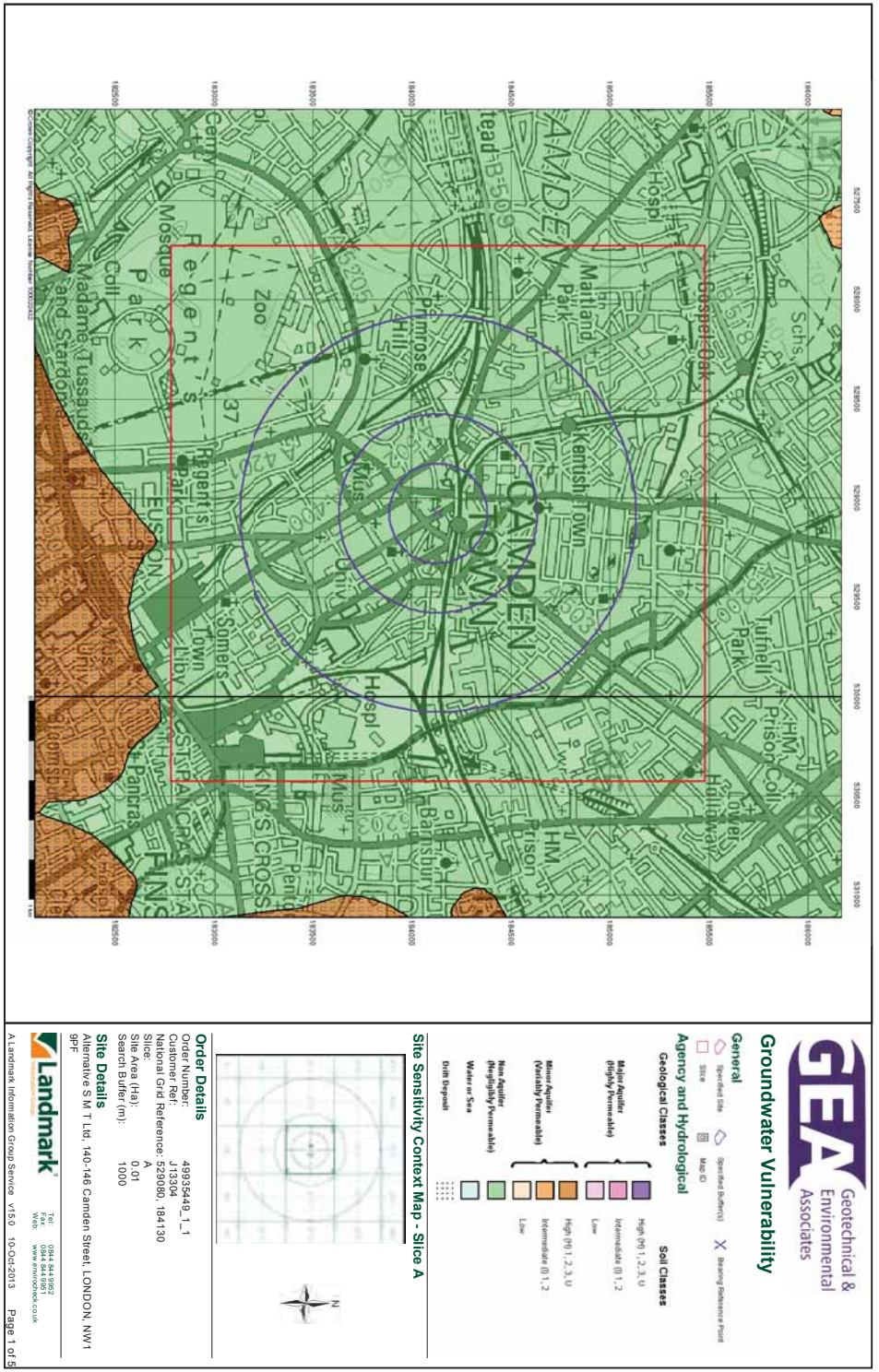
Industrial Land Use

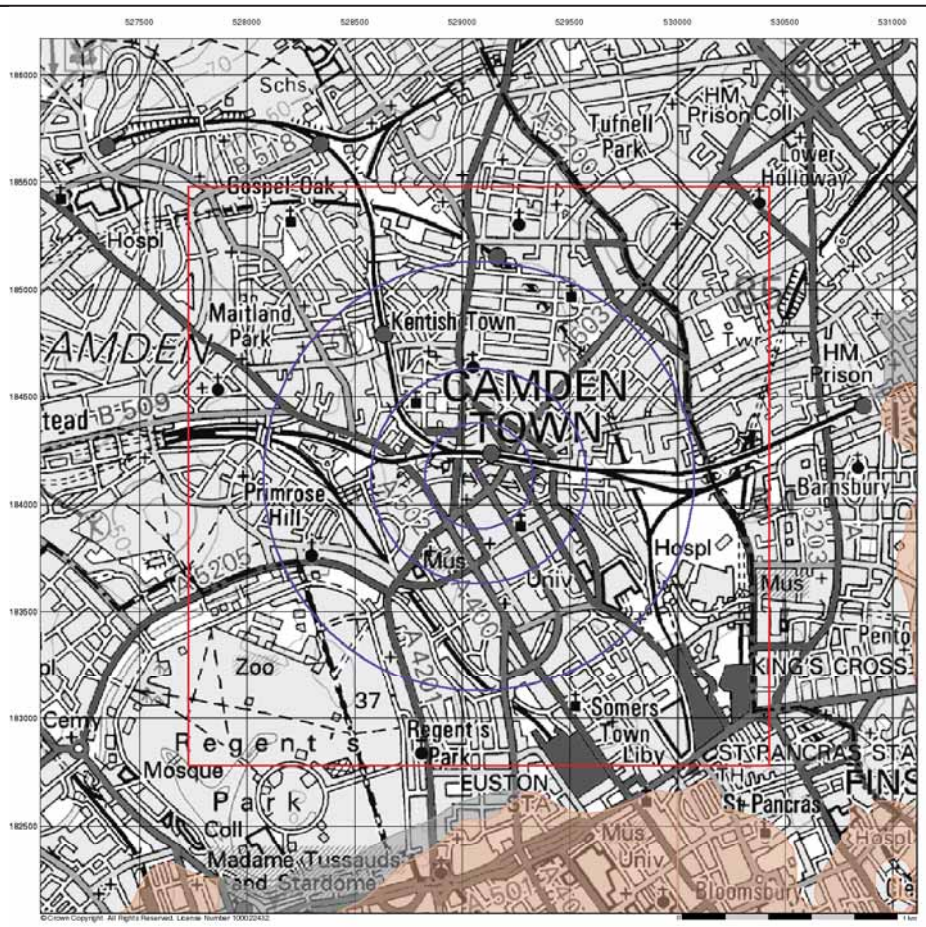
Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
204	**Fuel Station Entries** Name: Chalk Farm Service Station Location: 32-33, Chalk Farm Road, London, NW1 8AJ Brand: ESSO Premises Type: Petrol Station **Status: Closed** Positional Accuracy: Manually positioned to the address or location	A12NE (W)	534	-	528567 184291
205	**Fuel Station Entries** Name: Parkway Filling Station Location: 120 Parkway, Camden Town, LONDON, NW1 7AN Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Approximate location provided by supplier	A12SE (SW)	550	-	528582 183889
206	**Fuel Station Entries** Name: Camden Express Location: 196-206, Camden Road, London, NW1 9HG Brand: ESSO Premises Type: Petrol Station **Status: Open** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	657	-	529541 184593
207	**Fuel Station Entries** Name: Fairways Garage Location: 139-143 Camden Road, Sandal Road, Camden Town, LONDON, NW1 9HA Brand: Total Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	697	-	529530 184658
208	**Fuel Station Entries** Name: St Georges Service Station Location: 47 Mornington Crescent, Regents Park, LONDON, NW1 7RB Brand: Obsolete Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Located by supplier to within 100m	A8SE (S)	711	-	529094 183419
209	**Fuel Station Entries** Name: Star Chalk Farm Location: 81-85 Chalk Farm Road, Chalk Farm, LONDON, NW1 8AR Brand: Texaco Premises Type: Not Applicable **Status: Obsolete** Positional Accuracy: Approximate location provided by supplier	A17SW (W)	968	-	528174 184481

Useful Contacts

Contact	Name and Address	Contact Details
1	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 08708 506 506 Email: enquiries@environment-agency.gov.uk
2	**London Borough of Camden - Pollution Projects Team** Seventh Floor, Town Hall Extension, Argyle Street, London, WC1H 8EQ	Telephone: 020 7278 4444 Fax: 020 7860 5713 Website: www.camden.gov.uk
3	**British Geological Survey - Enquiry Service** British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
4	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmark.co.uk Website: www.landmarkinfo.co.uk
5	**Natural England** Northminster House, Northminster Road, Peterborough, Cambridgeshire, PE1 1UA	Telephone: 0845 600 3078 Fax: 01733 455103 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
6	**London Borough of Camden** Town Hall, Judd Street, London, WC1H 9JE	Telephone: 020 7974 4444 Fax: 020 7974 6866 Email: info@camden.gov.uk Website: www.camden.gov.uk
7	**Westminster City Council - Environmental Health Department** Council House, Marylebone Road, London, NW1 5PT	Telephone: 020 7641 1317 Fax: 020 7641 1142 Website: www.westminster.gov.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / SEPA have a charging policy in place for enquiries.





GEA Geotechnical & Environmental Associates

Superficial Aquifer Designation

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A

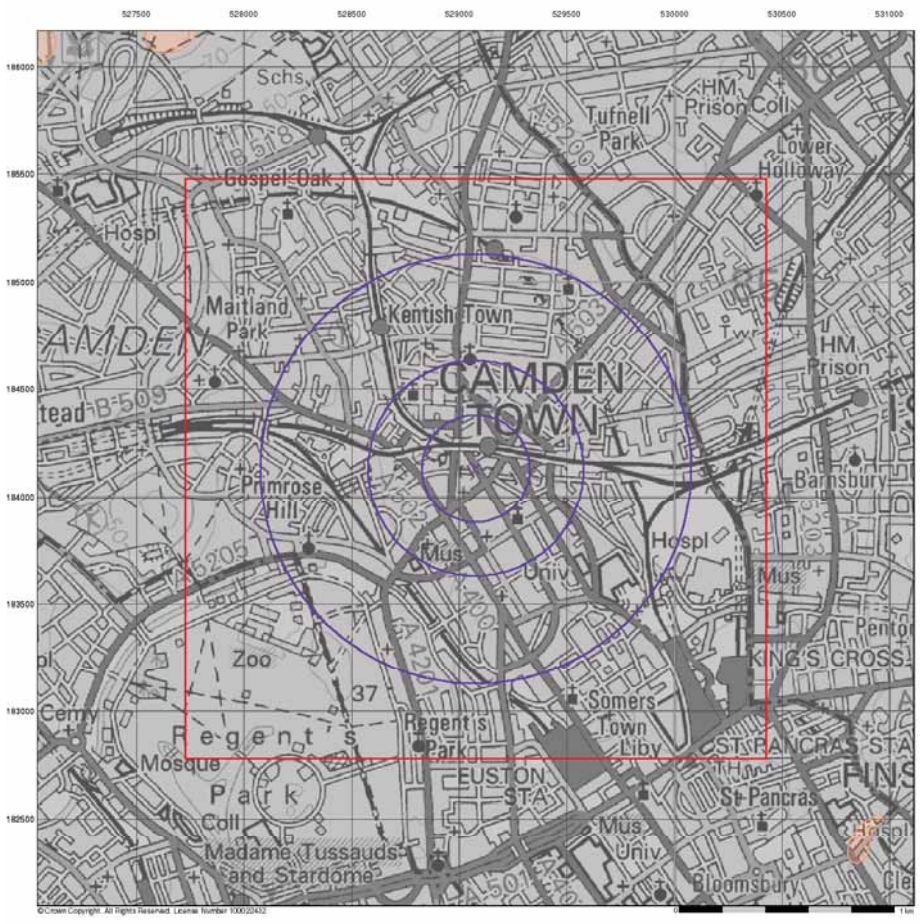
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

Bedrock Aquifer Designation

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown

Site Sensitivity Context Map - Slice A

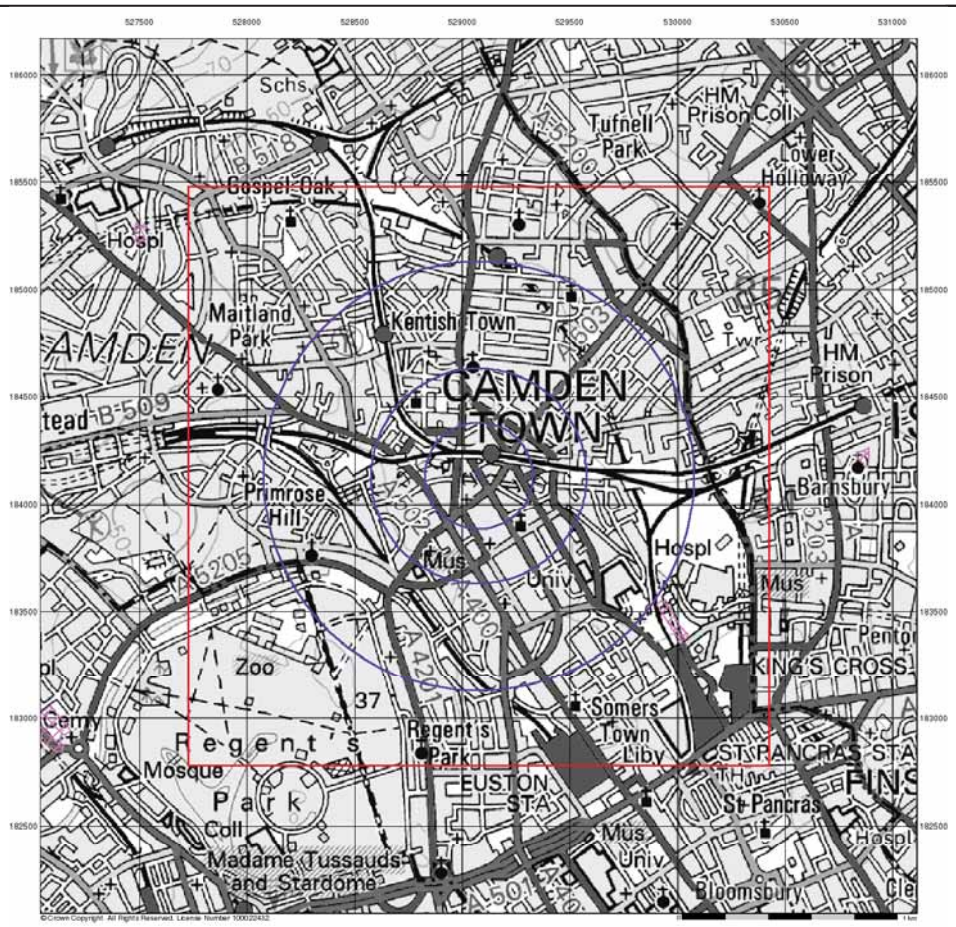
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Geotechnical & Environmental Associates

Sensitive Land Uses

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Sensitive Land Uses

- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area

Site Sensitivity Context Map - Slice A

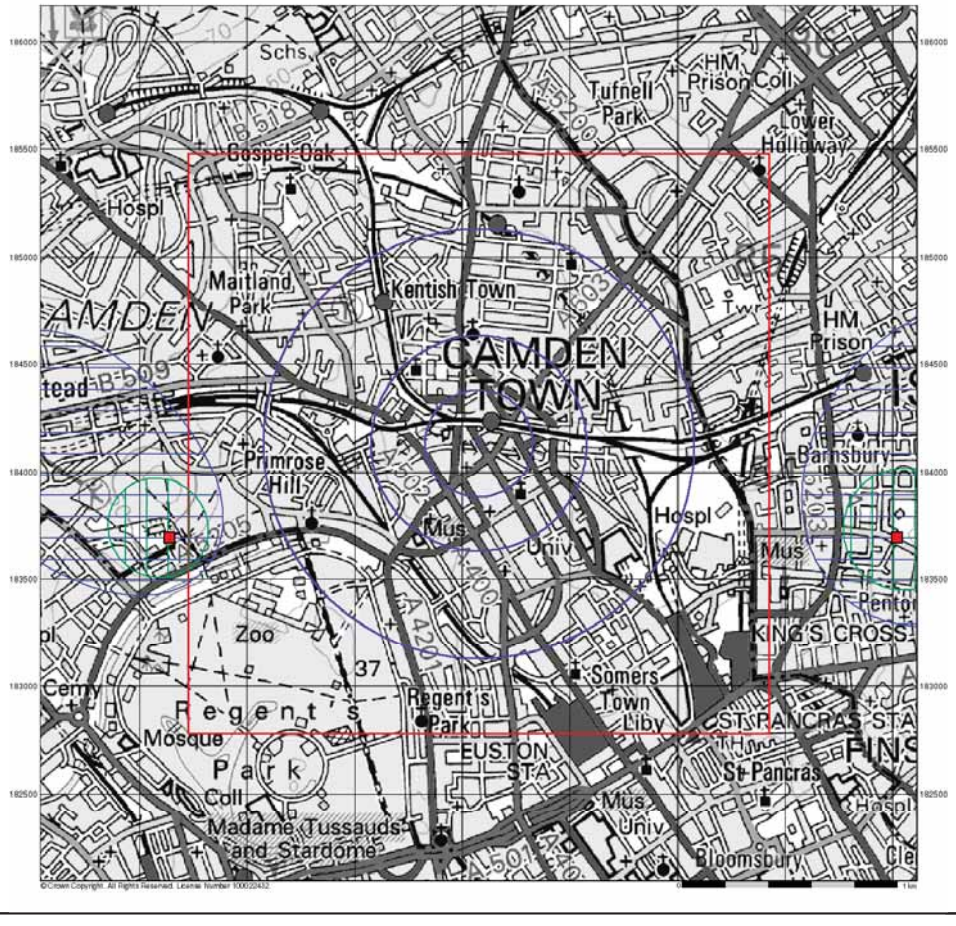
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Geotechnical & Environmental Associates

Source Protection Zones

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

- Source Protection Zone I
- Source Protection Zone II
- Source Protection Zone III
- Zone of Special Interest
- Source Protection Zone Borehole

Site Sensitivity Context Map - Slice A

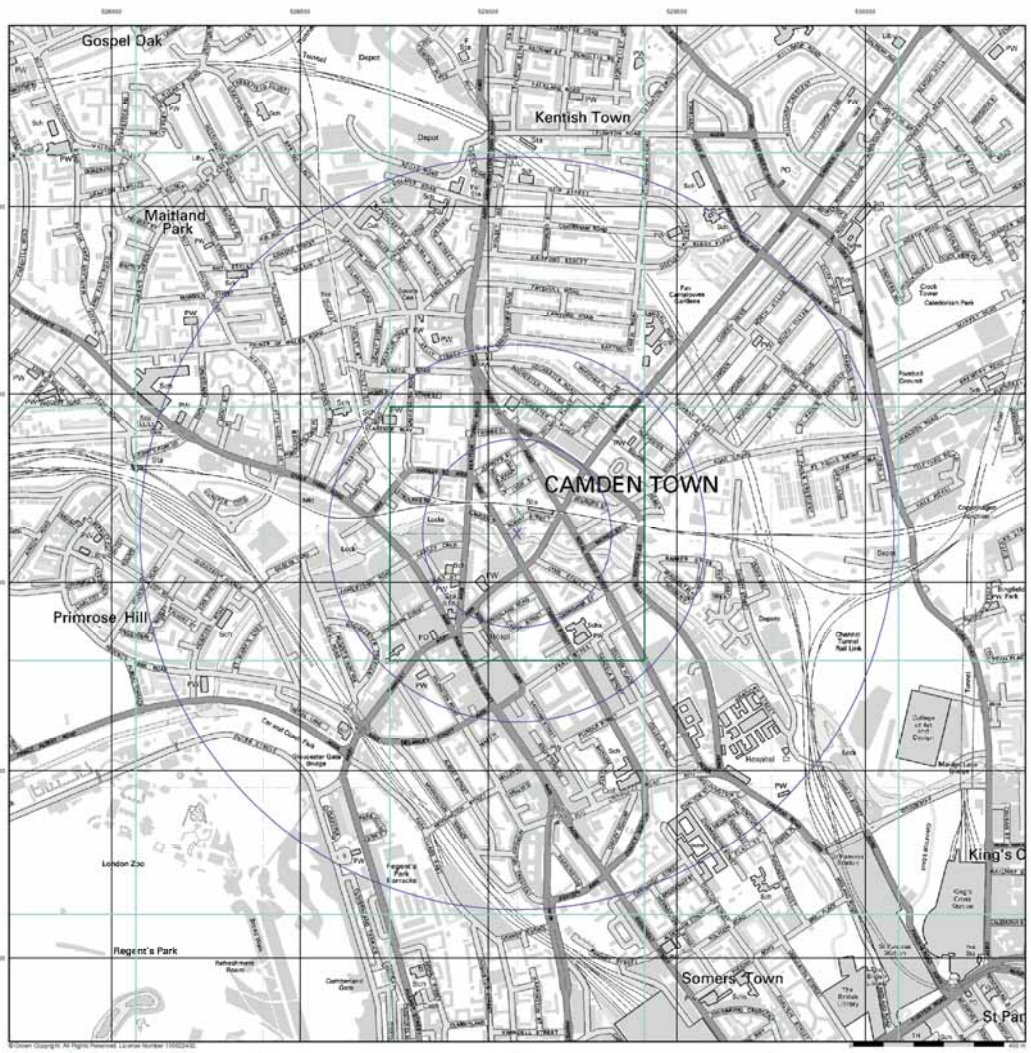
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

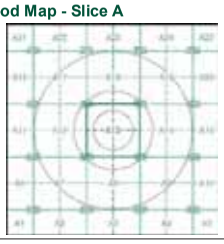


GEA Geotechnical & Environmental Associates

General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)
- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



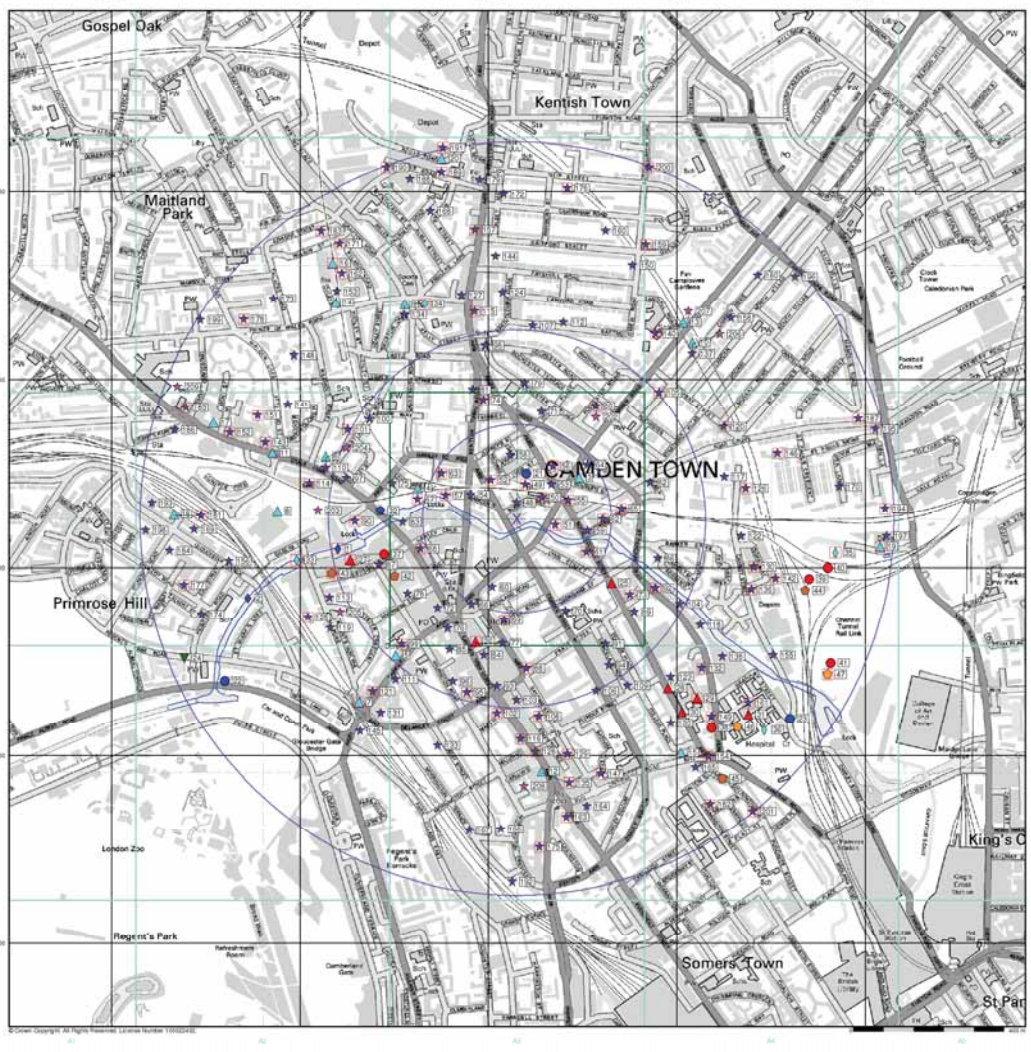
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

General
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

Agency and Hydrological
- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

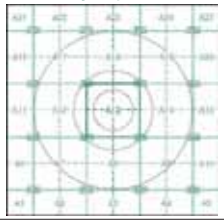
Geological
- BGS Recorded Mineral Site

Industrial Land Use
- Contemporary Trade Directory Entry
- Fuel Station Entry

Waste
- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Hazardous Substances
- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

Site Sensitivity Map - Slice A



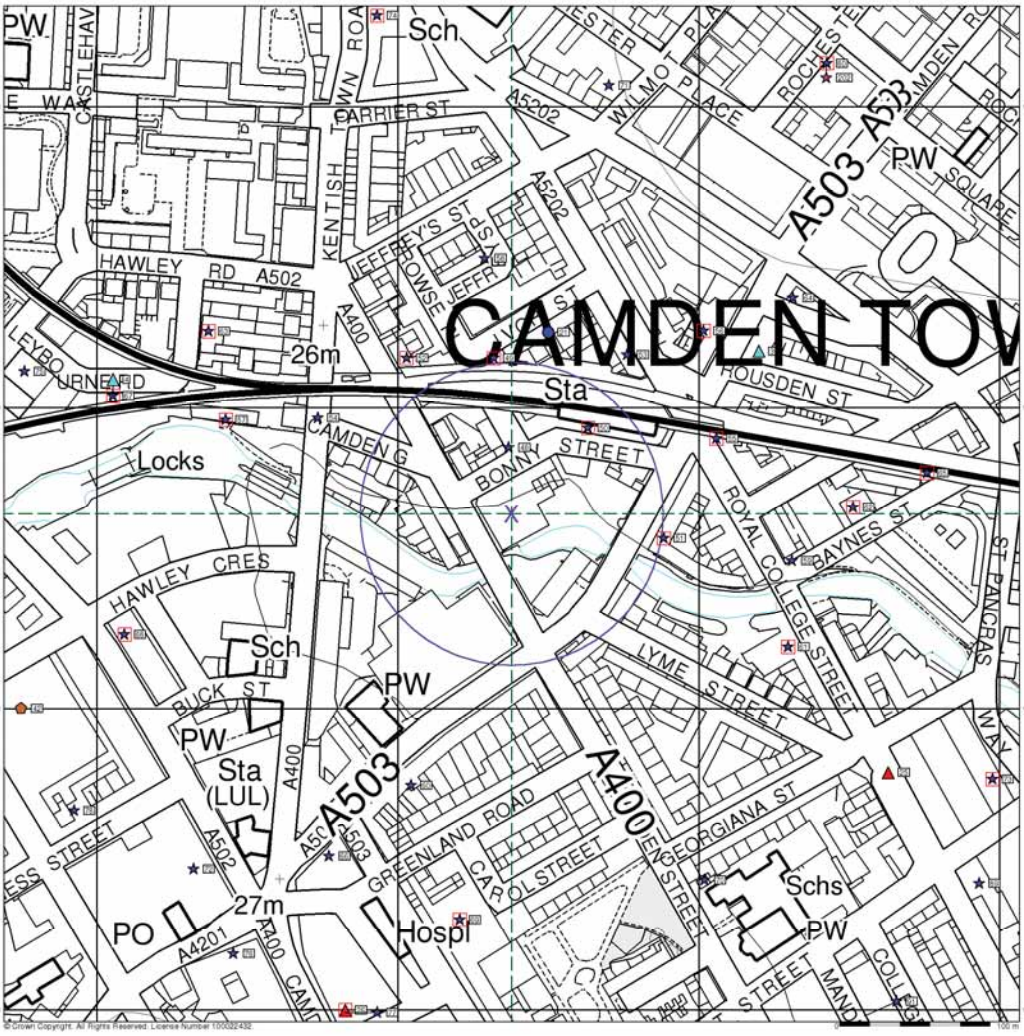
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	1000

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

General
Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological
Contaminated Land Register Entry or Notice (Location)
Contaminated Land Register Entry or Notice
Discharge Consent
Enforcement or Prohibition Notice
Integrated Pollution Control
Integrated Pollution Prevention and Control
Local Authority Integrated Pollution Prevention and Control
Local Authority Pollution Prevention and Control
Local Authority Pollution Prevention and Control Enforcement
Pollution Incident to Controlled Waters
Prosecution Relating to Authorised Processes
Prosecution Relating to Controlled Waters
Registered Radioactive Substance
River Network or Water Feature
River Quality Sampling Point
Substantiated Pollution Incident Register
Water Abstraction
Water Industry Act Referral

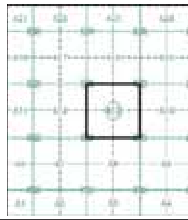
Geological
BGS Recorded Mineral Site

Industrial Land Use
Contemporary Trade Directory Entry
Fuel Station Entry

Waste
BGS Recorded Landfill Site (Location)
BGS Recorded Landfill Site
EA Historic Landfill (Buffered Point)
EA Historic Landfill (Polygon)
Integrated Pollution Control Registered Waste Site
Licensed Waste Management Facility (Landfill Boundary)
Licensed Waste Management Facility (Location)
Local Authority Recorded Landfill Site (Location)
Local Authority Recorded Landfill Site
Registered Landfill Site
Registered Landfill Site (Location)
Registered Landfill Site (Point Buffered to 100m)
Registered Landfill Site (Point Buffered to 250m)
Registered Waste Transfer Site (Location)
Registered Waste Transfer Site
Registered Waste Treatment or Disposal Site (Location)
Registered Waste Treatment or Disposal Site

Hazardous Substances
COMAH Site
Explosive Site
NIHHS Site
Planning Hazardous Substance Consent
Planning Hazardous Substance Enforcement

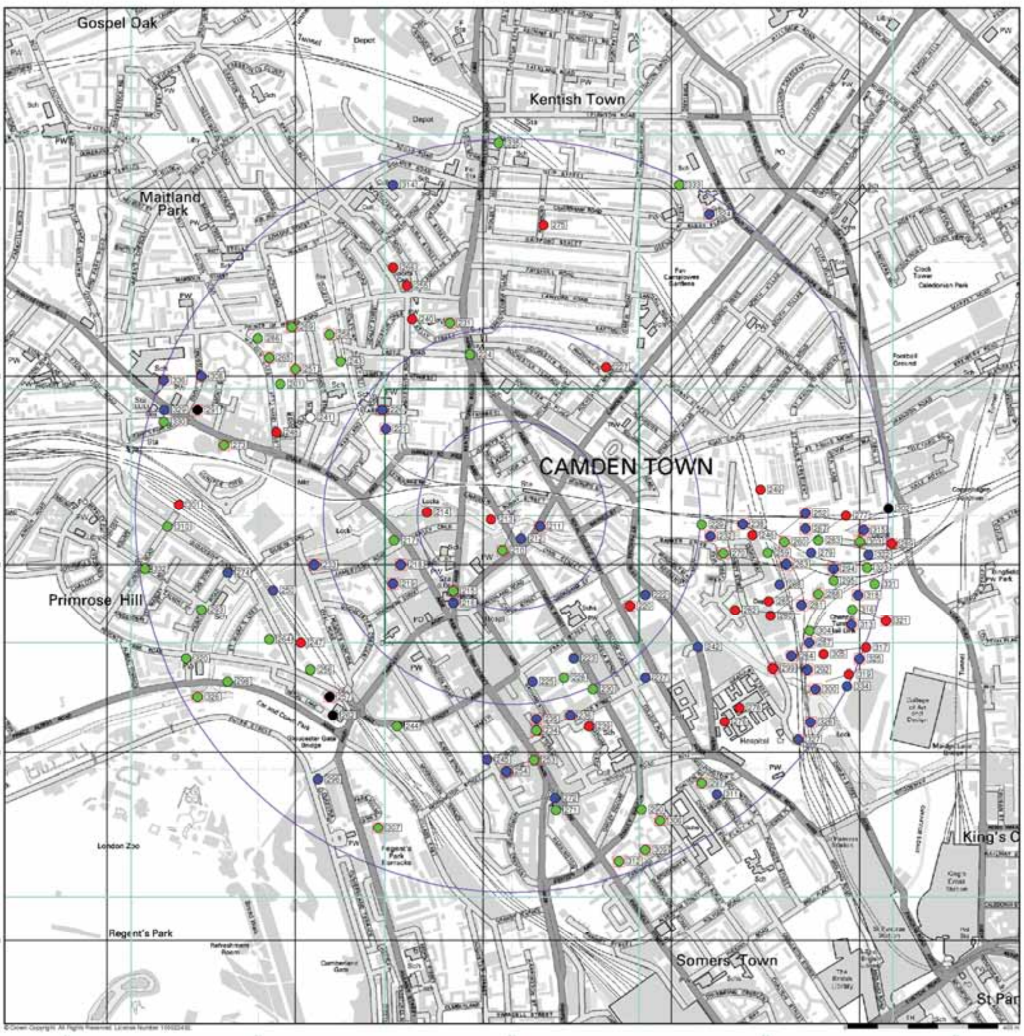
Site Sensitivity Map - Segment A13



Order Details
Order Number: 49935449_1_1
Customer Ref: J13304
National Grid Reference: 529080, 184130
Slice: A
Site Area (Ha): 0.01

Site Details
Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

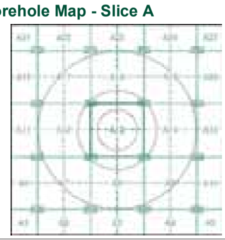
General
Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological (Boreholes)
BGS Borehole Depth 0 - 10m
BGS Borehole Depth 10 - 30m
BGS Borehole Depth 30m +
Confidential
Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



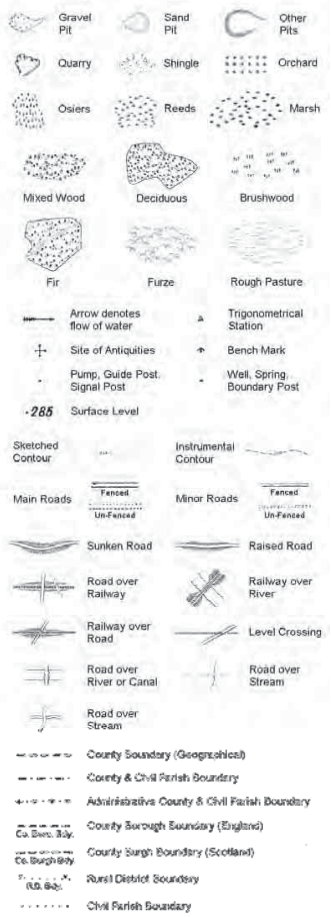
Order Details
Order Number: 49935449_1_1
Customer Ref: J13304
National Grid Reference: 529080, 184130
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

Site Details
Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

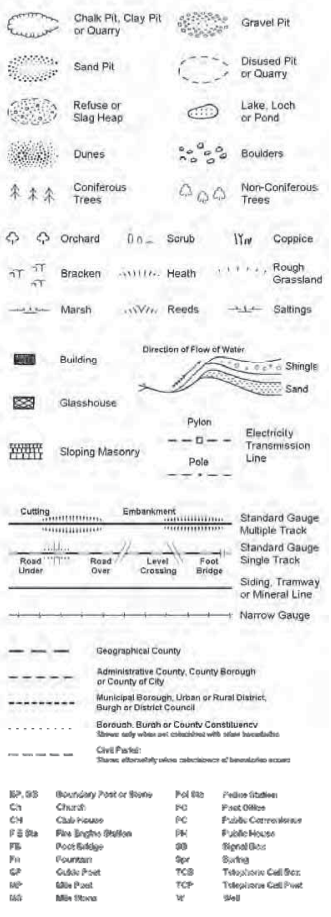
Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series 1:10,560



Ordnance Survey Plan 1:10,000



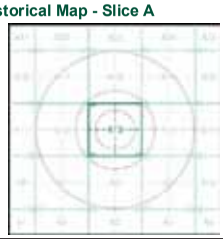
1:10,000 Raster Mapping

Geotechnical & Environmental Associates

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Middlesex	1:10,560	1873 - 1882	3
Middlesex	1:10,560	1879	4
London	1:10,560	1896	5
Essex	1:10,560	1920	6
London	1:10,560	1920	7
London	1:10,560	1938	8
Essex	1:10,560	1938	9
Ordnance Survey Plan	1:10,000	1940 - 1951	10
Historical Aerial Photography	1:10,560	1949 - 1950	11
Ordnance Survey Plan	1:10,000	1957 - 1958	12
Ordnance Survey Plan	1:10,000	1962 - 1968	13
Ordnance Survey Plan	1:10,000	1967	14
Ordnance Survey Plan	1:10,000	1972 - 1976	15
Ordnance Survey Plan	1:10,000	1979	16
Ordnance Survey Plan	1:10,000	1984	17
London	1:25,000	1985	18
Ordnance Survey Plan	1:10,000	1990 - 1996	19
10K Raster Mapping	1:10,000	2006	20
10K Raster Mapping	1:10,000	2013	21

Historical Map - Slice A



Order Details

Order Number: 49935449_1_1
Customer Ref: J13304
National Grid Reference: 529080, 184130
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 1000

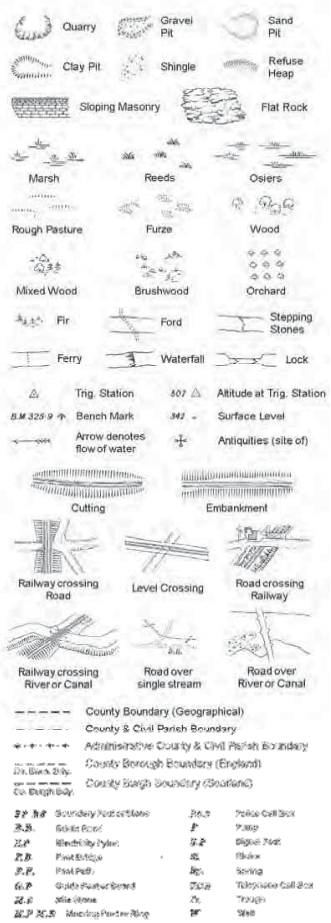
Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

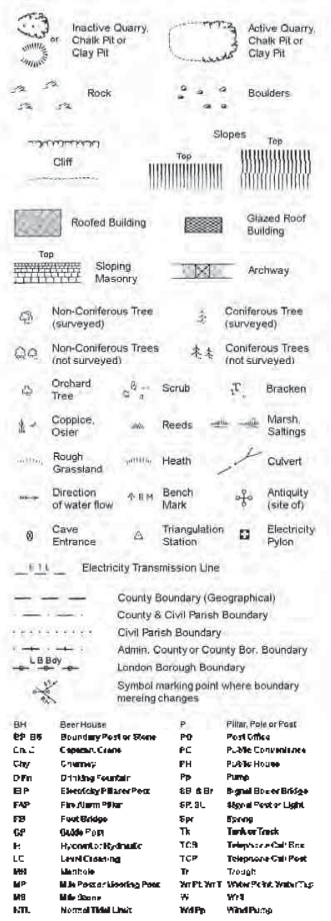
Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

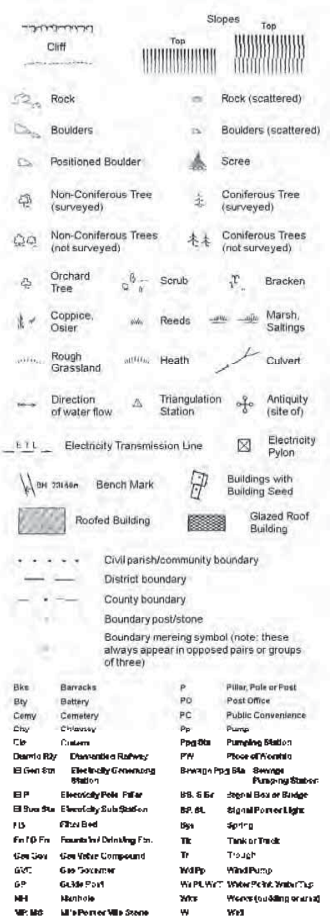
Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



Large-Scale National Grid Data 1:2,500 and 1:1,250

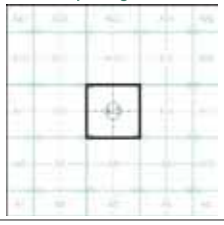


Geotechnical & Environmental Associates

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
London	1:2,500	1875	2
London	1:2,500	1896	3
London	1:2,500	1916	4
Historical Aerial Photography	1:1,250	1946	5
Ordnance Survey Plan	1:1,250	1953 - 1954	6
Additional SIMs	1:1,250	1953 - 1986	7
Ordnance Survey Plan	1:2,500	1954 - 1955	8
Additional SIMs	1:1,250	1955	9
Ordnance Survey Plan	1:1,250	1962 - 1969	10
Ordnance Survey Plan	1:1,250	1968 - 1975	11
Ordnance Survey Plan	1:2,500	1970 - 1971	12
Supply of Unpublished Survey Information	1:1,250	1973 - 1975	13
Additional SIMs	1:1,250	1982 - 1987	14
Large-Scale National Grid Data	1:1,250	1991	15
Large-Scale National Grid Data	1:1,250	1991 - 1995	16
Large-Scale National Grid Data	1:1,250	1991 - 1994	17
Large-Scale National Grid Data	1:1,250	1992 - 1995	18
Large-Scale National Grid Data	1:1,250	1996	19

Historical Map - Segment A13



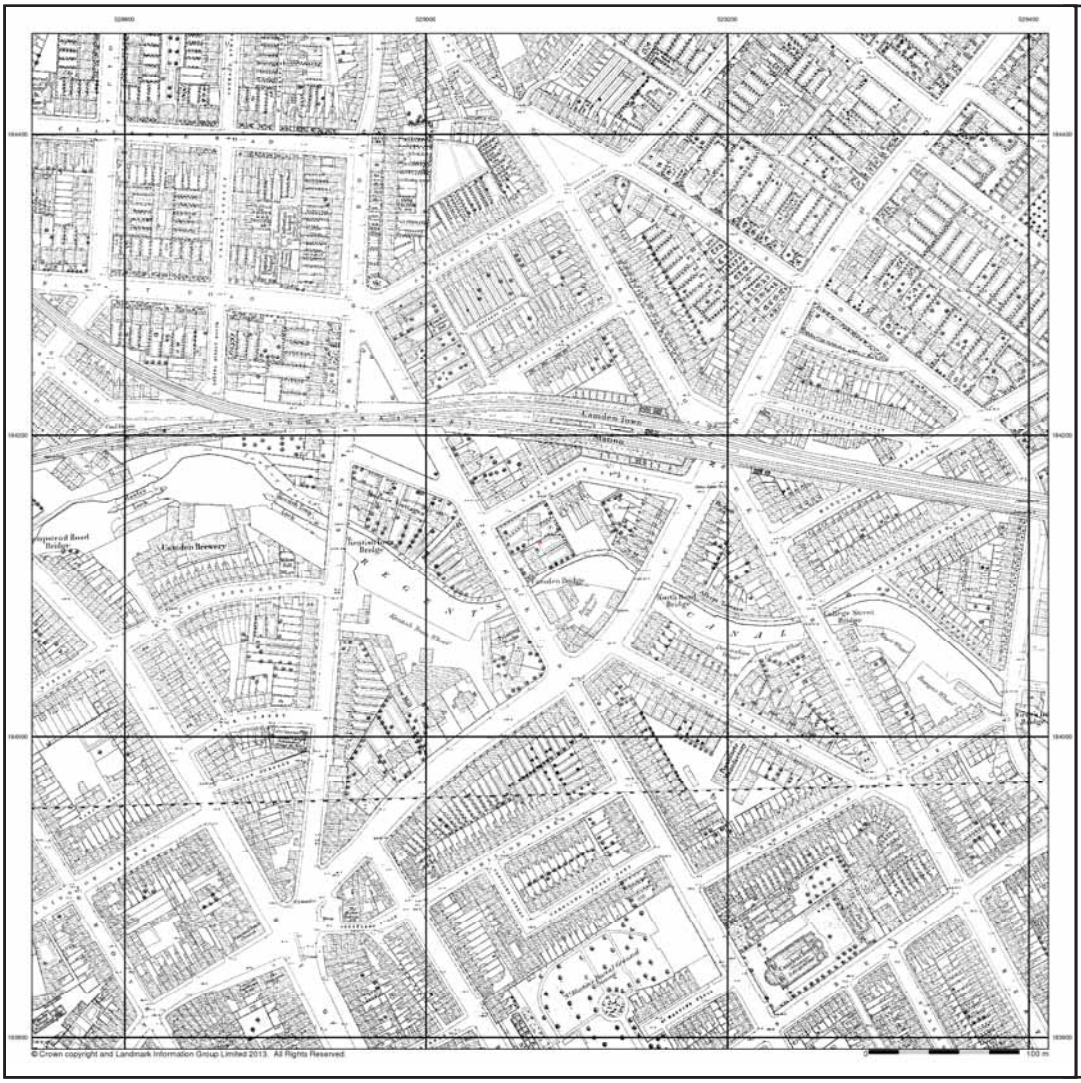
Order Details

Order Number: 49935449_1_1
Customer Ref: J13304
National Grid Reference: 529080, 184130
Slice: A
Site Area (Ha): 0.01
Search Buffer (m): 100

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

London

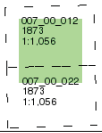
Published 1873

Source map scale - 1:1,056

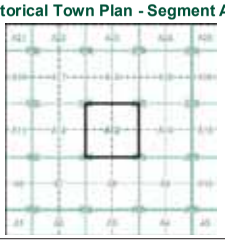
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



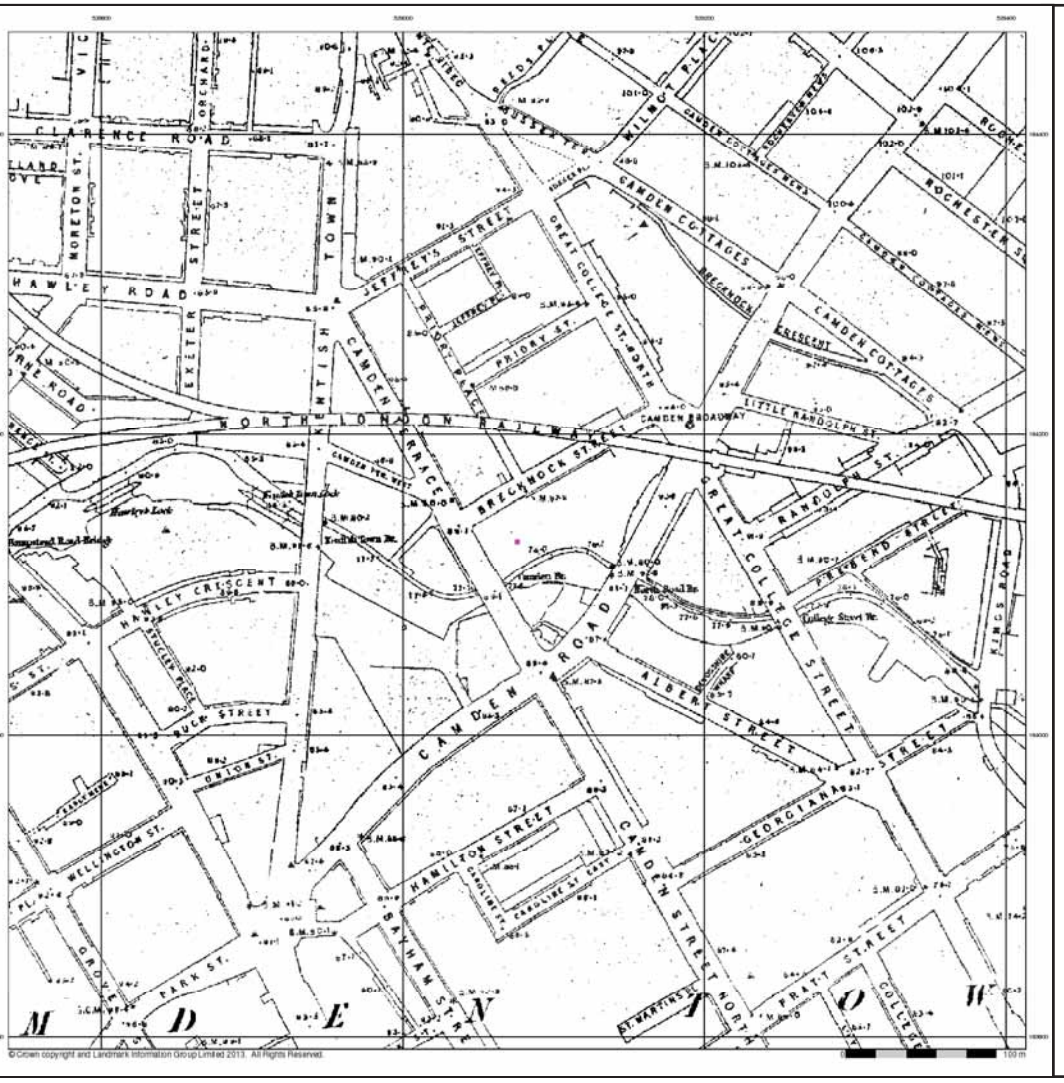
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

London

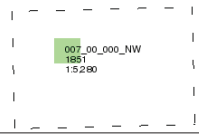
Published 1851

Source map scale - 1:5,280

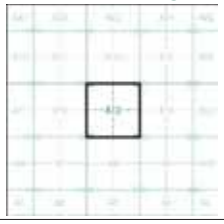
The historical town plans shown derive from Ordnance Survey mapping from the early to mid 1850s. The 1:2640 scale was introduced in the early 1850s, to survey districts covered by the Local Boards of Health and for a map of the Osborne Estate of Queen Victoria. The general style is similar to that of the early 1:2500s published shortly afterwards.
1:5280 scale was surveyed shortly afterwards in the mid 1850s as general purpose mapping with a standard of content similar to the more contemporary 1:10,560 mapping. The scale was also used for a reduction of the 1:1056 'skeleton survey' of London that was undertaken between 1848 and 1850.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



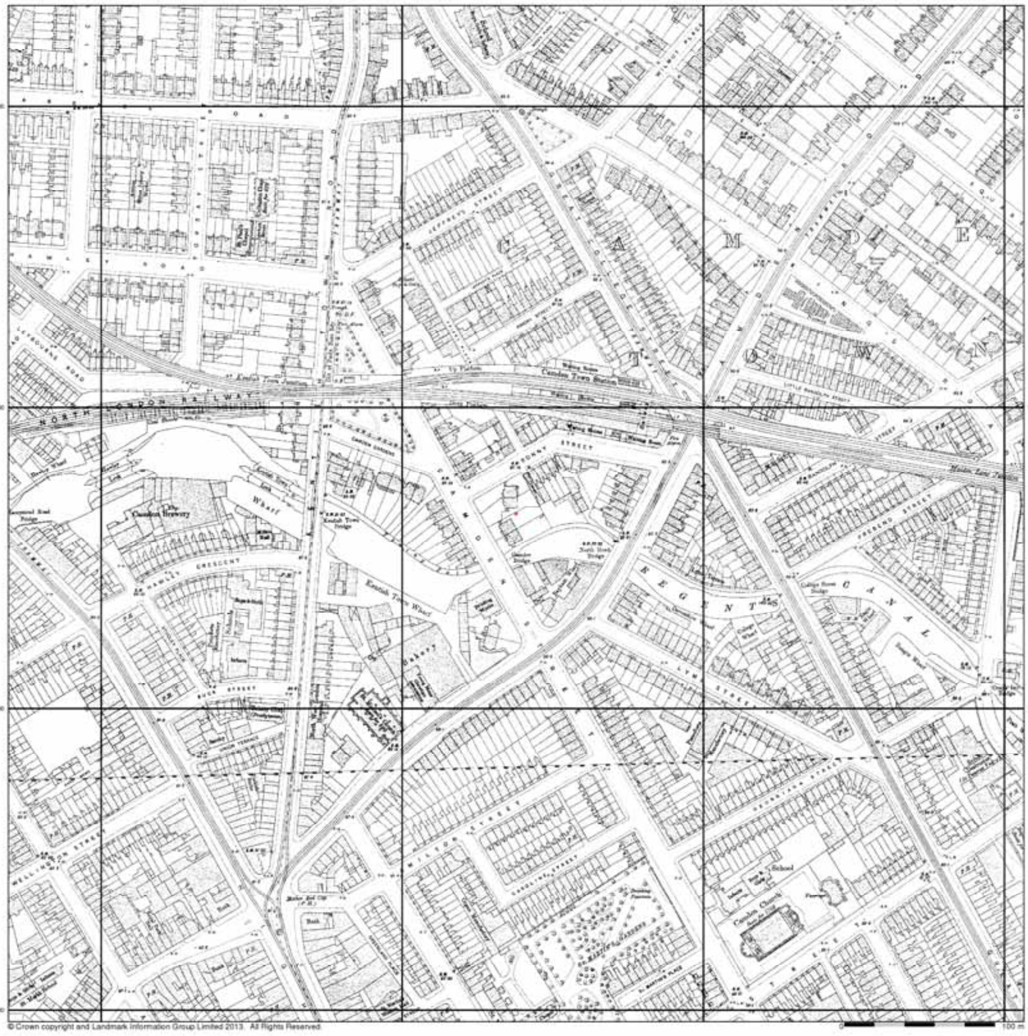
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Geotechnical & Environmental Associates

London

Published 1895

Source map scale - 1:1,056

The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

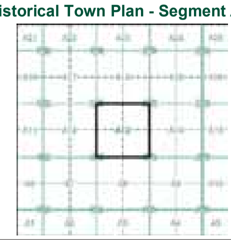
Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

007_00_012
1895
1:1,056

007_00_022
1895
1:1,056

Historical Town Plan - Segment A13



Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	0

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Geotechnical & Environmental Associates

London

Published 1875

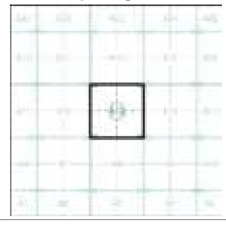
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

016_00
1875
1:2,500

Historical Map - Segment A13



Order Details

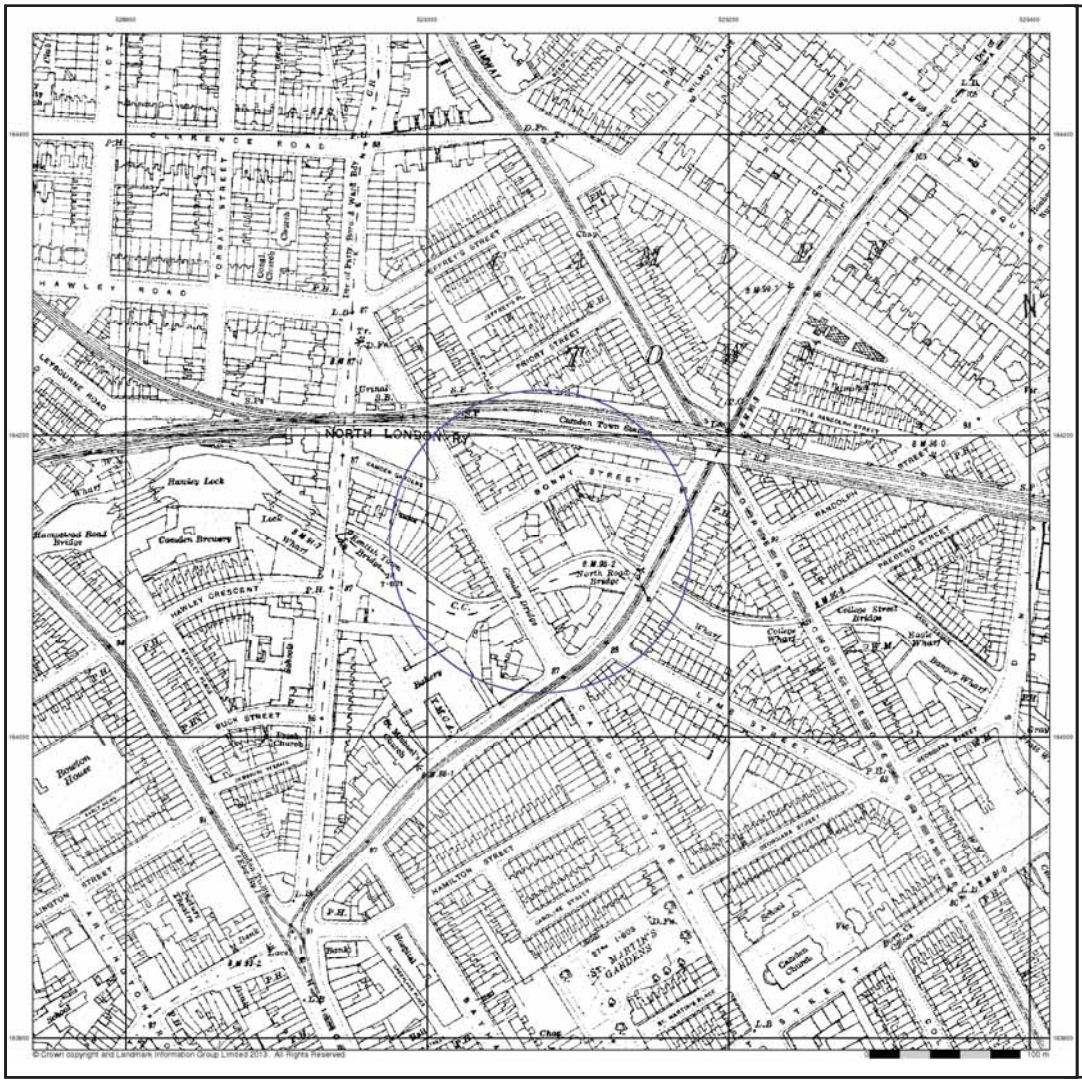
Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

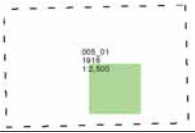
London

Published 1916

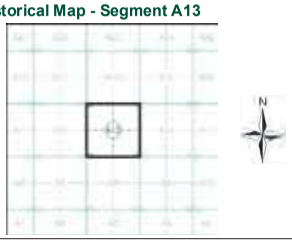
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



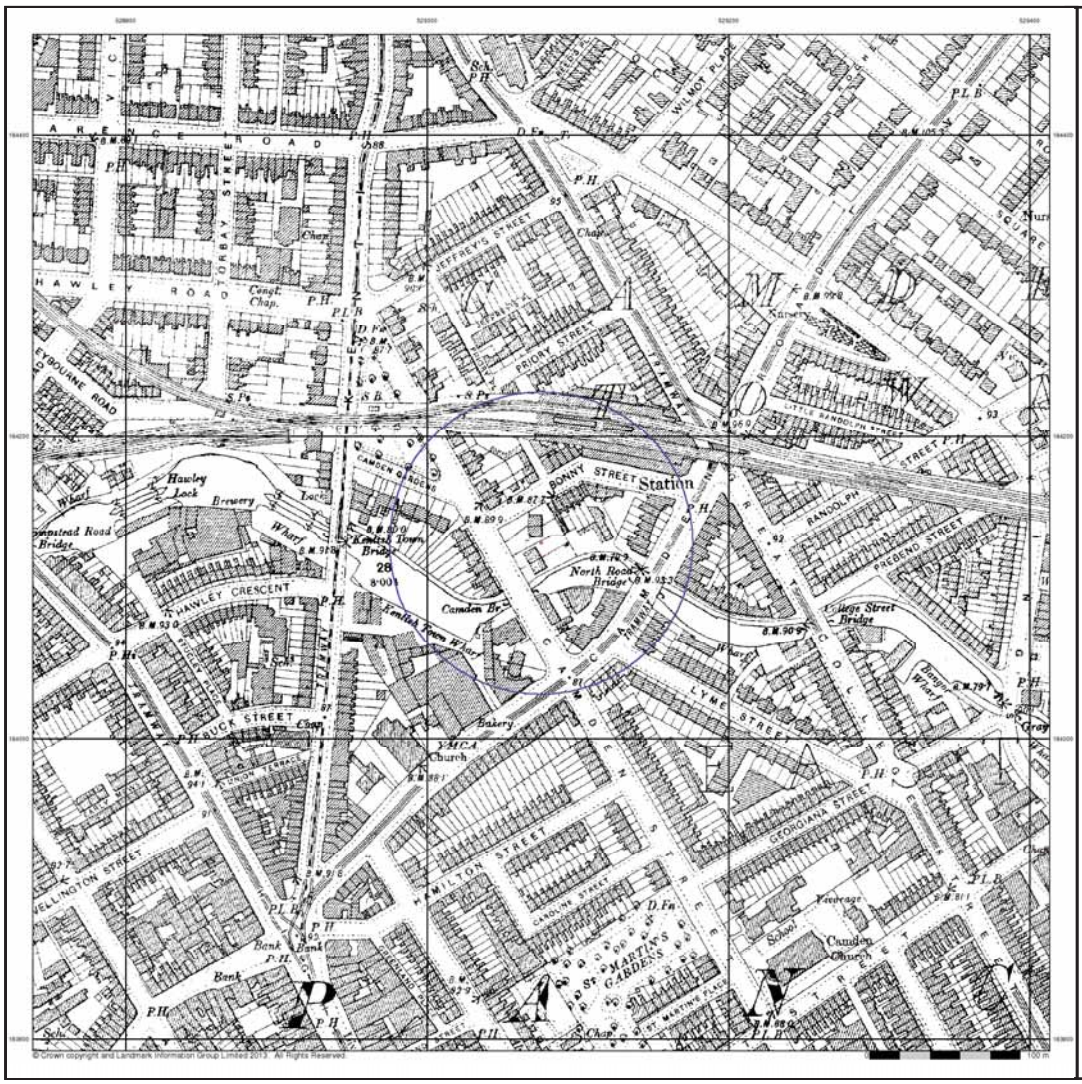
Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



GEA Geotechnical & Environmental Associates

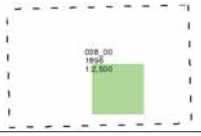
London

Published 1896

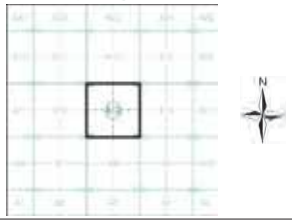
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	49935449_1_1
Customer Ref:	J13304
National Grid Reference:	529080, 184130
Slice:	A
Site Area (Ha):	0.01
Search Buffer (m):	100

Site Details

Alternative S M T Ltd, 140-146 Camden Street, LONDON, NW1 9PF

Landmark Information Group
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk