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Contents

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 desk study carried out by Geotechnical and Environmental Associates Limited (GEA) on the instructions of Faithful+Gould, on behalf of London Borough of Camden, with respect to the redevelopment of the site through the demolition of the existing buildings and subsequent construction of a number of mixed-use buildings of between six storeys and 24 storeys mixed use buildings, providing 350 new homes and mixed employment space, including areas of external hardstanding and communal soft landscaping. The purpose of the work has been to determine the history of the site, to assess the potential for contamination, to provide preliminary information on the expected ground conditions and to provide preliminary information on foundation options with regard to the proposed development of the site.

Desk Study Findings

The earliest map studied, dated 1851, shows the southern half of the site to be occupied by the Midland Counties Railway Goods Depot and the northern half by a road bisecting the site in a north-south alignment. Apart from the goods depot, which is labelled as Saint Pancras Station, no other buildings or railway lines are shown on this map. The next available map, dated 1874, shows the southern extent of the site to be occupied a large railway goods shed, with the remainder of the site occupied by railway sidings. The surrounding area was largely in use for the railways, including a coal depot to the east and an engine shed and workshop roughly 80 m to the southeast. Terraced housing is shown roughly 10 m to the west of the northern half of the site. Regents Canal was located roughly 150 m to the southwest of the site. Between 1938 and 1946, a conveyor factory was constructed roughly 60 m to the east of the northern half of the site, with works directly to the north of this. The conveyor factory was demolished between 1968 and 1969. At some time between 1974 and 1982, the area was developed with a number of commercial units constructed on site and the surrounding area developed with residential buildings. The site and the surrounding area appears to be their current configuration by 1985, following the construction of the commercial units in the northern half of the site by this time. In addition, an electrical substation is shown directly to the south of the northern half of the site and the substation in the west of the southern half by this time. The site and surrounding area have since remained essentially unchanged.

The site is expected to be directly underlain by the London Clay Formation, although a thickness of made ground is likely to be present associated with former uses of the site. Records of a series of boreholes along the railway to the east and between the two site areas, sourced from the BGS borehole database, indicate that made ground extended to depths of between 0.60 m and 2.10 m and locally in excess of3.40 m, but typically less than 1.00 m. The London Clay initially comprised a weathered layer of firm locally stiff brown mottled grey fissured clay to depths of between 7.30 m and 10.65 m (21.70 m OD and 17.98 m OD). Occasional gravel is present towards the top of this stratum. Beneath the weathered layer, the London Clay comprised stiff becoming very stiff grey fissured clay, becoming sandy towards the base to a depth of 37.15 m (-8.52 m OD). Beneath this the Upper Mottled Beds of the Lambeth Group was encountered to the maximum depth of the BGS boreholes, of 40.01 m (-11.38 m OD). Groundwater was encountered as seepages at depths of between 1.40 m and 1.90 m in only a selection of boreholes within the made ground or London Clay.

Contamination Risk Assessment

On the basis of the findings of the research carried out, there is considered to be a LOW to MEDIUM risk of there being a contamination linkage at this site. A risk from soil gas is not envisaged.

Foundation Assessment

Given the expected moderate to high loads of the proposed buildings, piled foundations will be required. For the expected ground conditions at this site, some form of bored pile could be considered. In view of the expected moderate and locally significant thickness of made ground and the underlying clay soils, conventional rotary bored piles could be adopted with relatively short lengths of casing or, alternatively, consideration could be given to the use of bored piles installed using continuous flight auger (cfa) techniques, which would negate the requirement for temporary casing.

In the design of the piles, consideration should be given to any existing or proposed trees and their future growth or removal, which may impact the pile shaft adhesion at shallow depths.

1.0 Introduction

Geotechnical and Environmental Associates Limited (GEA) has been commissioned by Faithful+Gould, on behalf of London Borough of Camden, to carry out a desk study at 120-136 Camley Street and 3-30 Cedar Way, London N1C 4PG.

1.1 Proposed Development

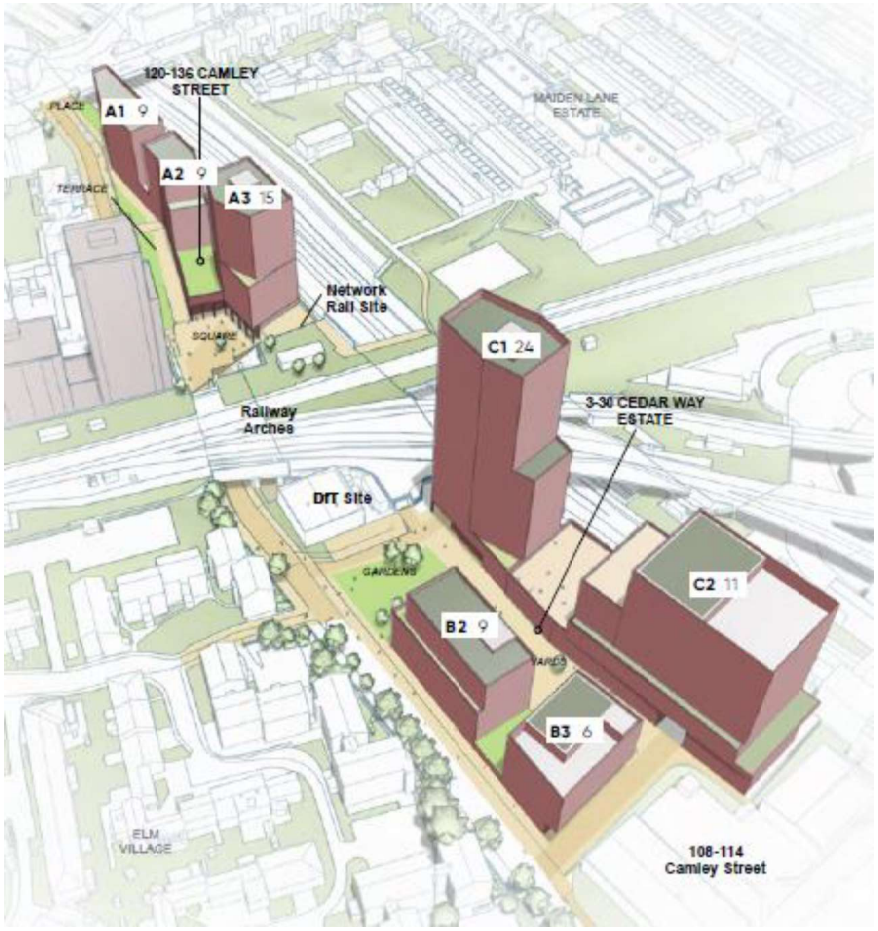
It is understood that it is proposed to redevelop the site through the demolition of the existing buildings and construction of a number of between six-storey and 24-storey mixed use buildings with areas of external hardstanding and communal soft landscaping. The drawing opposite shows the proposed layout.

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

1.2 Purpose of work

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

- check the history of the site and surrounding area, particularly with respect to any previous or present potentially contaminative uses;
- to provide an assessment of the risk of encountering unexploded ordnance (UXO);
- to research the geology and hydrogeology of the site;
- to check records of data on groundwater, surface water and other publicly available environmental data;
- to use the information obtained in the above searches to carry out a qualitative risk assessment with respect to subsurface contamination; and
- to provide preliminary comments on foundation options.



1.3 Scope of work

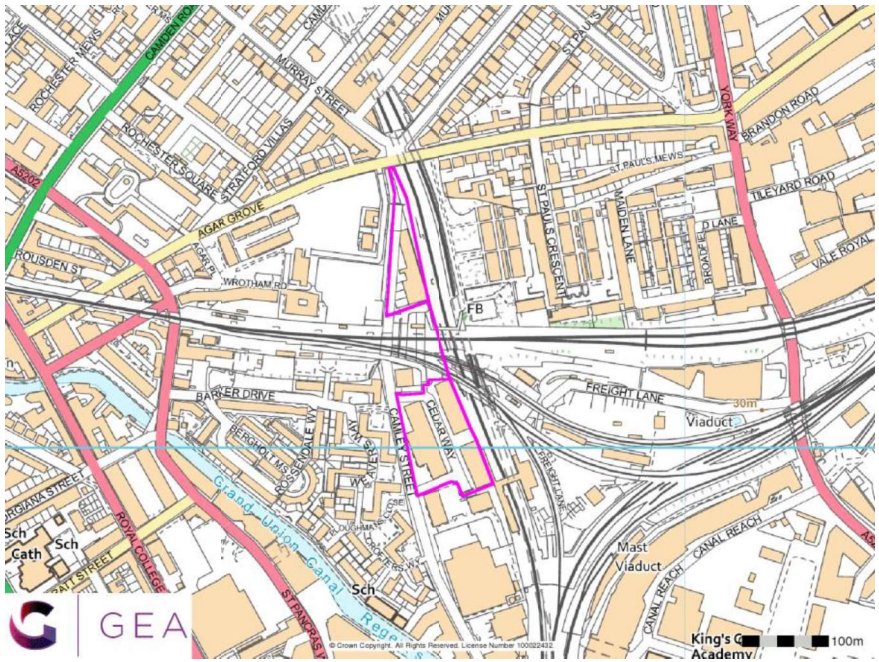
In order to meet the above objectives, a desk study was carried out, comprising, in summary, the following activities:

- a review of historical Ordnance Survey (OS) maps supplied from the Envirocheck database;
- a review of publicly available environmental data sourced from the Envirocheck database;
- a review of publicly available planning records held on the Camden website;
- a preliminary unexploded ordnance (UXO) risk assessment carried out by 1st Line Defence;
- a review of readily available geologic maps; and
- provision of a report presenting and interpreting the above data, together with our advice and recommendations with respect to the proposed development.

2.0 The Site

2.1 Site Description

The site is located in the London Borough of Camden, approximately 490 m east of Camden Road railway station and 750 m to the northeast of Mornington Crescent London Underground station. The site is divided into two parts by railway lines running in an east to west orientation through roughly the centre of the site and Network Rail land. Both areas front onto Camley Street to the west and are bounded by a railway line to the east. The northern half is bounded to the north by Agar Grove and the southern half is bounded to the south by Unit Nos 108 to 114 Camley Street. The northern half of the site may be additionally located by National Grid Reference 529683, 184200 and the southern half of the site by 529721, 184014 and both are shown on the map extract below.



A walkover of the site was completed by a geotechnical engineer from GEA in May 2023. The northern half of the site is roughly triangular, with maximum dimensions of 160 m north to south by 40 m east to west. This area was occupied by a single-storey commercial building along the southern half of the eastern boundary, with areas of hardstanding to the west of these. The building is subdivided into nine separate units, with each unit occupied by a vehicle garage / repairer. The hardstanding, and much of Camley Street in the west of the site was used for vehicle storage.

The northern half of the northern part of the site comprises what appears to be a builder's storage yard, with an area of hardstanding to the south of this. A number of drums and above ground storage tanks were identified across the site, including within the builder's storage yard, and areas of suspected hydrocarbon surface staining were observed across the site. Semi-mature deciduous trees are present in the south, central west and north of the site, of up to roughly 12 m in height. The area directly to the west of the site is roughly 2 m higher than the site and supported by a retaining wall along the western boundary of the site. The site is sensibly level. A selection of photos of the northern half of the site are presented below and opposite.

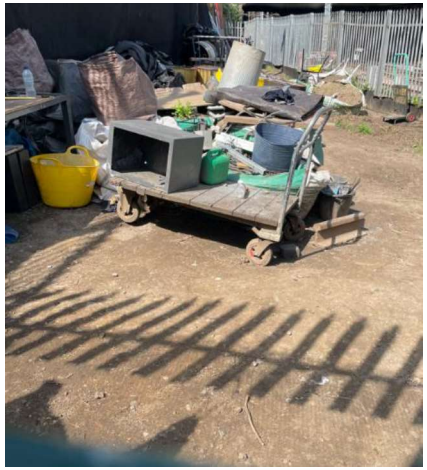
View of commercial units in the northern half of the site, looking south along Camley Street

Left: Above ground storage tank with visible staining in roughly the centre west of site

Above: Above ground storage tank with visible staining towards the north of the site

Below: View of northern storage compound, looking north

Right: One example of drums observed across much of the northern half of the site



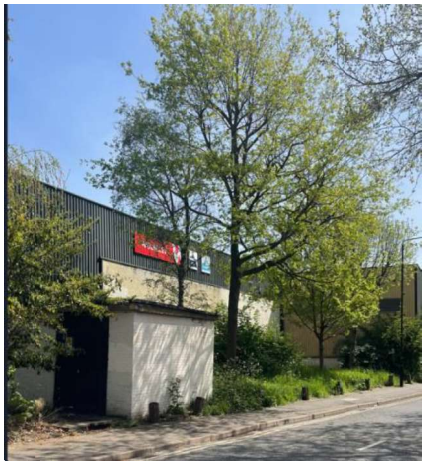
The southern half of the site is roughly rectangular in shape with maximum dimensions of 130 m north to south by 80 m east to west. At the time of the walkover, it was occupied by three two-storey commercial units, two along the eastern boundary and one along the western boundary. Cedar Way runs through the centre of the site in a roughly crescent shape to join up with Camley Street in the north and south of the site. The units were occupied by Veolia, a municipal services depot, Idverde, grounds maintenance, IMS Smithfield and Daily Fish, both food wholesalers, Wolseley, a plumbing supply store, and offices. Two of the units were undergoing refurbishment at the time of the site walkover. An above ground storage tank was identified inside Idverde unit, and appeared to be in a good condition. The tank was labelled as containing 2500 litres of gas oil diesel and did not appear to be bunded. Some localised staining was noted on the side of the tank, but no visible surface staining was noted beneath or around the tank.

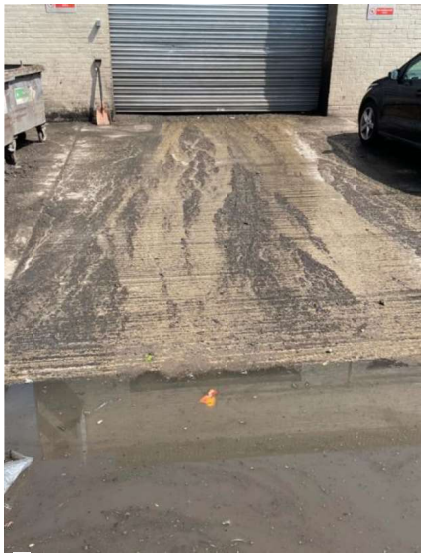
The site slopes gently down towards the west and the area to the south of the site is roughly 2 m lower than the site and is supported by a retaining wall along the southern boundary of the site.

The area is primarily covered in hardstanding, with the exception of an area of soft landscaping in the west of the site, with a number of mature and semi-mature deciduous trees in this area, which are up to about 10 m in height. In addition, a number of semi-mature deciduous trees, of up to roughly 12 m in height, are present adjacent to the retaining wall in the south of the site. The hardstanding in front of the northern most Veolia shutter door was covered in wet mud during the walkover, with an area of standing water with abundant sediment on Cedar Way in front of this.

An electricity substation is present in the west of the southern area. A selection of photos from the southern area are presented below and opposite.

View of southern half of site, looking north along Cedar Way





Above: View of soft landscaping and electricity substation in west of site, looking south along Camley Street.

Right: Liquid and mud on surface from northern most Veolia unit

2500 litres above ground gas oil diesel tank within the Idverde unit, to the south of the shutter door.

2.2 Site History

The site history has been researched by reference to internet sources and historical Ordnance Survey (OS) maps obtained from the Envirocheck database.

The earliest map studied, dated 1851, shows the southern half of the site to be occupied by the Midland Counties Railway Goods Depot and the northern half by a road bisecting the site in a north-south alignment. Apart from the goods depot, which is labelled as Saint Pancras Station, no other buildings or railway lines are shown on this map.

The next available map, dated 1874, shows the southern extent of the site to be occupied a large railway goods shed, with the remainder of the site occupied by railway sidings. The surrounding area was largely in use for the railways, including a coal depot to the east and an engine shed and workshop roughly 80 m to the southeast. Terraced housing is shown roughly 10 m to the west of the northern half of the site. Regents Canal was located roughly 150 m to the southwest of the site.

Between 1938 and 1946, a conveyor factory was constructed roughly 60 m to the east of the northern half of the site, with works directly to the north of this. The conveyor factory was demolished between 1968 and 1969.

At sometime between 1974 and 1982, the area was developed with a number of commercial units constructed on site and the surrounding area developed with residential buildings. The site and the surrounding area appears to be thier current configuration by 1985, following the construction of the commercial units in the northern half of the site by this time. In addition, an electrical substation is shown directly to the south of the northern half of the site and the substation in the west of the southern half by this time. The site and surrounding area have since remained essentially unchanged.

2.2.1 Planning History

A search of planning records held by the London Borough of Camden has shown the following planning applications pertaining to the site.

Location	Planning Ref No	Registration Date	Details
Unit 20 Cedar Way	8601368	23/07/1986	Erection of an external ventilation duct at the rear
Unit 13Cedar Way	K13/12/C/36952	22/09/1983	Formation of windows on rear elevation and internal alterations to provide ancillary office and showroom
Unit 30 Cedar Way	PEX0000153	22/02/2000	Change of use from B1 (business) to B8 (warehousing) with ancillary wholesale trade counter and external alterations to provide new entrance door and 2 new windows on front elevation
Unit 9 Cedar Way	PEX0100746	05/09/2001	Conversion of part of the footway access into the site to provide parking for five car parking spaces together with the installation of bollards on the opposite footway
Units 15-24 Cedar Way	2004/1110/P	12/03/2004	A replacement external staircase with a small single storey ground floor extension underneath to contain electrical equipment, new and replacement of windows and doors throughout (PVCu) and the installation of security shutters on openings throughout
Unit 10 Cedar Way	2004/1573/A	19/04/2004	Display of signs
Unit 30 Cedar Way	2004/1575/A	19/04/2004	Display of signs
Unit 26 Cedar Way	2004/4914/P	10/01/2005	Change of use from Class B1 to Class B8 (warehouse)
Unit 9 Cedar Way	2005/3734/P	28/09/2005	Application for a Certificate of Lawfulness for the proposed change of use of the ground floor from storage use (Class B8) to a catering kitchen (Class B1)
Unit 28 Cedar Way	2006/1092/P	14/03/2006	Certificate of lawfulness for the existing use of the unit as a catering butcher
Unit 9 Cedar Way	2006/0463/P	15/03/2006	Change of use of from storage and distribution (Class B8) to light industrial use (Class B1c), and installation of new extract system
Unit 28 Cedar Way	2006/2338/P	30/05/2006	Use of the unit as a catering butcher (Class B1)

Location	Planning Ref No	Registration Date	Details
Land adjacent to 120 Camley Street	2007/2558/P	20/06/2007	Erection of 4 m high pole with attached security camera to Camley Street frontage
Unit 21-22 Cedar Way	2021/3719/P	03/09/2021	Use of premises for business use (Class E)
Unit 24 Cedar Way	2023/0418/P	01/03/2023	Change of use from storage and distribution (Class B8) to business use (Class E(g))

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 Envirocheck report has not indicated any recorded landfill sites within 1 km of the site, and additionally, no areas of potentially infilled land within 250 m of the site. Three waste management facilities, a single waste transfer and two waste treatment or disposal sites are located within 250 m of the site and are summarised below. The three waste management facilities are located 66 m, 129 m and 249 m to the southeast of the site. Each of these commenced operations between 1995 and 1997 and surrendered their licence between 1999 and 2002. The waste transfer site is located 64 m to the southeast and is operational, accepting dry cell batteries, electric cables/wire, and inert wastes, solidified tar, pitch, bitumen, wood, paper, plastics, tin cans and cement between 10000 tonnes and 25000 tonnes per year. The waste treatment and disposal sites are both still operational and located 250 m to the southeast of the site. These are very large, accepting over 250000 tonnes per year, of inert wastes, non-putrescible waste, sand excavated road metal, topsoil, hardcore, brick, stone and concrete.

No pollution incidents to controlled waters are recorded within 250 m of the site.

There are 20 contemporary trade directory entries listed on site and a further 16 within 100 m of the site. The most notable contemporary trade directories are summarised below.

Distance	Location	Entry	Active / Inactive
On site	134 Camley Street	Garage Services	Inactive
On site	136 Camley Street	Garage Services	Active
On site	120 Camley Street	Garage Services	Inactive
On site	130 Camley Street	Garage Services	Inactive
On site	120 Camley Street	Garage Services	Inactive
On site	128 Camley Street	Garage Services	Inactive
On site	122 Camley Street	Garage Services	Active
On site	120 Camley Street	Car Body Repairs	Active
On site	124 Camley Street	Garage Services	Inactive
On site	124 Camley Street	Garage Services	Active
On site	134 Camley Street	Car engine tuning and diagnostic services	Active
On site	132 Camley Street	Garage Services	Inactive
On site	126 Camley Street	MOT Testing Centre	Inactive
On site	122 Camley Street	Garage Services	Active
On site	126 Camley Street	Garage Services	Active
On site	128 Camley Street	Garage Services	Active
On site	Unit 30, Cedar Way	Central Heating Supplies and Equipment	Active
On site	27 Cedar Way	Meat Product Manufacturers and Wholesaler	Inactive
On site	Unit 20-21, Cedar Way	Distribution Services	Inactive
On site	23 Cedar Way	Printers	Inactive
5 m S	110-112 Camley Street	Food Products Manufacturers	Inactive
19 m S	Unit 16, Cedar Way	Textile Manufacturer	Inactive
59 m N	Murray Street	Diamond Tool Manufacturers	Inactive
63 m N	5 Murray Street	Laundries and Launderette	Active
83 m S	110 Camley Street	Food Products Manufacturers	Active
92 m N	44 St Pauls Crescent	Engine Rebuilding and Reconditioning	Inactive

Distance	Location	Entry	Active / Inactive
92 m N	Unit F, 44 St Pauls Crescent	Furniture Manufacturers	Inactive
92 m N	Unit A, 44 St Pauls Crescent	Engineers – General	Inactive
96 m N	Unit 1, 44 St Pauls Crescent	Electrical Engineers	Active

There are no fuel filling stations within 250 m of the site, with the nearest located 293 m to the north of the site, which is open. It is unlikely to have an impact on the site at this distance.

Information on Urban Soil Chemistry provided by the BGS indicates that background concentrations for lead in the vicinity of the site are likely to range between 150 mg/kg and 300 mg/kg, with a recorded lead concentration of 1602.60 mg/kg by the British Geological Survey roughly 170 m to the west of the site. Therefore, whilst relatively high concentrations of lead may be encountered within any near surface soils present on the site, a significant proportion of the measured concentration is likely to be the result of residual airborne sources, and this will need to be taken into account in any subsequent risk assessment.

The site is not located within an area of sensitive land, with the nearest located 435 m to the south of the site at Camley Street Nature Reserve.

Reference to records compiled by the Health Protection Agency (formerly the National Radiological Protection Board) indicates that the site falls within an area where less than 1% of homes are affected by radon emissions and therefore radon protective measures should not be necessary. However, where basement developments are proposed, RBKC requires that further consideration is given to the potential risks associated with radon.

A total of 27 Points of Interest relating to commercial services are listed on site and a further six within 100 m, all relating to vehicle repair and servicing. A single Point of Interest relating to Manufacturing and Production is located within 100 m of the site, a tank (generic) listed 94 m to the southeast of the site. In addition, a single Point of Interest, relating to public infrastructure, is listed within 250 m of the site, a bus and coach station, depot and companies, listed 246 m to the east.

2.4 Preliminary UXO Risk Assessment

A Preliminary UXO Risk Assessment has been completed by 1st Line Defence (report ref PA17853-00, dated 2nd May 2023), and the report is included in the appendix. The risk assessment has been carried out in accordance with the guidelines provided by CIRIA[1], which state that the likelihood of encountering and detonating UXO below a site should be assessed along with establishing the consequences that may arise. The first phase comprises a preliminary risk assessment, which should be undertaken at an early stage of the development planning. If such an assessment identifies a high level of risk, then a detailed risk assessment should be carried out by a UXO specialist, which will identify an appropriate course of action with regard to risk mitigation.

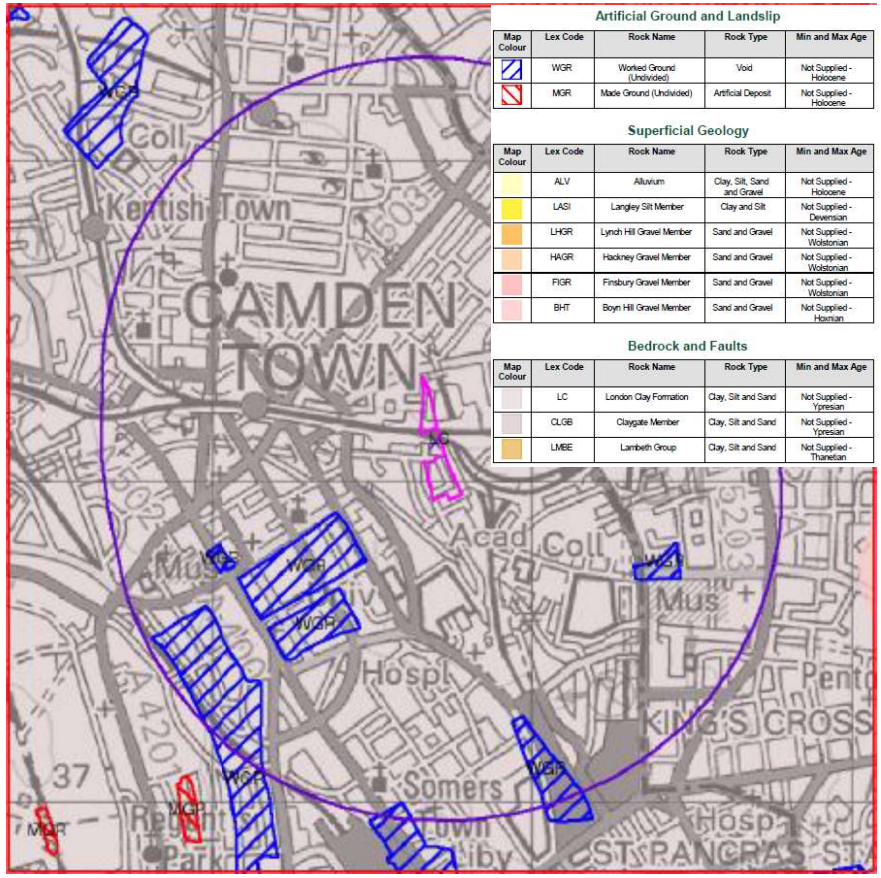
The report indicates that, during World War II (WWII), the site was located within the Metropolitan Borough of St Pancras, which sustained an overall very high bomb density with 258.4 items of ordnance recorded per 1,000 acres. London Bomb Census mapping indicates a single high explosive strike on the proposed site boundary and two additional strikes within the immediate vicinity of the site. In addition, a clearance area is recorded to the west of the site. The southern half of the site was covered by a building during the war and as such it is likely that any evidence of a UXO would have been noted, in addition, any damage is likely to have been repaired quickly in order to keep the depot and tracks operational, such that the main risk from UXO falling during the same raid after damage was sustained may have gone missing amongst debris, particularly as access is likely to be temporarily reduced during enemy action and subsequent bombing in already damaged areas may have gone unobserved. As such, it is recommended that further research, in the form of a detailed UXO risk assessment be completed, or in lieu of this, appropriate UXO risk mitigation measures.

1 CIRIA C681 (2009) *Unexploded ordnance (UXO) A guide for the construction industry*

3.0 Ground Conditions

3.1 Soil Conditions

The British Geological Survey (BGS) map of the area (as reproduced by Envirocheck below) indicates that the site is directly underlain by the London Clay.



Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	LASI	Langley Silt Member	Clay and Silt	Not Supplied - Devensian
	LHGR	Lynch Hill Gravel Member	Sand and Gravel	Not Supplied - Wolstonian
	HAGR	Hackney Gravel Member	Sand and Gravel	Not Supplied - Wolstonian
	FIGR	Finsbury Gravel Member	Sand and Gravel	Not Supplied - Wolstonian
	BHT	Boyn Hill Gravel Member	Sand and Gravel	Not Supplied - Hornian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian
	CLGB	Claygate Member	Clay, Silt and Sand	Not Supplied - Ypresian
	LMBE	Lambeth Group	Clay, Silt and Sand	Not Supplied - Thanetian

A search of the BGS borehole database has identified records of a number of boreholes advanced along the railway lines to the east and through the centre of the site. The boreholes encountered made ground to depths of between 0.60 m and 2.10 m and locally in excess of 3.40 m, but typically less than 1.00 m. London Clay was encountered beneath and was only fully penetrated in a single location, at a depth of 37.15 m (-8.52 m OD). This was underlain by the Upper Mottled Beds of the Lambeth Group, to the maximum depth investigated, of 40.01 m (-11.36 m OD).

The London Clay comprised an initial layer of firm locally stiff brown mottled orange-brown and grey silty slightly sandy clay with occasional gravel, to a depth of 3.20 m (25.64 m OD and 26.43 m OD). This was in turn underlain by firm becoming stiff brown occasionally mottled light grey fissured clay to depths of between 7.30 m and 10.65 m (21.70 m OD and 17.98 m OD). These layers are expected to represent the weathered London Clay. Beneath the weathered London Clay, it comprised stiff becoming very stiff grey fissured clay, which became sandy from 31.70 m to the base of the London Clay at a depth of 37.15 m (-8.52 m OD). The Upper Mottled Beds of the Lambeth Group comprised very stiff fissured multicoloured clay, to the maximum depth of the BGS boreholes, of 40.01 m (-11.38 m OD).

3.2 Hydrology and Hydrogeology

The London Clay Formation is classified by the Environment Agency as Unproductive Strata, referring to rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow. The London Clay cannot support a water table or effectively transmit groundwater flow because of its low permeability and cohesive nature. The permeability will be predominantly secondary, through fissures in the clay. Published data indicates the horizontal permeability of the London Clay to generally range between 1×10^{-11} m/s and 1×10^{-9} m/s.

The nearest surface water feature is the Regents Canal, located 132 m to the southwest.

A single water abstraction is located within 250 m of the site, located 162 m to the east of the site, operated by Hanson Quarry Products Europe Ltd.

The aforementioned BGS boreholes encountered seepages at depths of between 1.40 m and 1.90 m within a selection of the boreholes in either the made ground or London Clay. However, groundwater was not encountered within each borehole, suggesting that a groundwater table is not continuous.

The site is not located within a Groundwater Protection Zone and is not located within an area with potential for groundwater flooding to occur. In addition, the site is not located within an area at risk of flooding from rivers or the sea, but parts of Cedar Way and Camley Street are recorded as having a low risk (1000 year return) for surface water flooding to occur.

The site is almost entirely covered by a mixture of concrete hardstanding and buildings, with areas of soft landscaping in the north and south of the northern half of the site and in the west of the southern half. Infiltration of rainwater is generally restricted to surface water drains, such that the majority of surface runoff currently drains into combined sewers in the road.

The proposed development will slightly decrease the ratio of hardstanding on the site through the construction of the proposed buildings. This will, in theory, reduce the amount of runoff or volume or water received into the existing sewer system, or that could have a potentially adverse impact on the surrounding area. There should not, therefore, be any requirement for any mitigation measures.

4.0 Risk Assessment

4.1 Environmental Risks

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.

4.1.1 Source

The desk study findings indicate that the site has a potentially contaminative history having been occupied by railway land since prior to 1851 until some time between 1974 and 1982. This usage may have resulted in localised spillages and leaks of hydrocarbons, coal dust, metal particulates and asbestos fibres, along with possible localised spillages of handled cargoes[2]. Ash ballast may also have been used. In addition, since the site was redeveloped between 1974 and 1985 to the existing configuration of commercial units, the northern half of the site appears to have been almost solely used for vehicle repair and service, which may have resulted in localised spillages and leaks of hydrocarbons, heavy metals and solvents[3].

In addition, above ground storage tanks were identified in both site areas during the site walkover, including surface staining of the hardstanding. The tanks, drums and vehicle storage represent possible localised sources of hydrocarbon contamination. The hydrocarbon contamination represents a possible source of soil vapour.

The electrical substations, given their age, may represent possible sources of PCB contamination.

No sources of landfill gas have been identified on site or in the surrounding area.

2 Department of the Environment Industry Profile (1995) *Railway Land.* HMSO.

3 Department of the Environment Industry Profile (1996) *Road vehicle fueling, service and repair: garages and filling stations.* HMSO.

4.1.2 Receptor

The redevelopment of the site to have a mixed end use will result in end users representing high sensitivity receptors. Adjacent sites are also considered to be sensitive receptors.

As the site is directly underlain by Unproductive Strata, groundwater is not considered to be particularly sensitive receptors.

Buried services are likely to come into contact with any contaminants present within the soils through which they pass and site workers are potential receptors during construction or maintenance works.

4.1.3 Pathway

The presence of negligibly permeable London Clay directly beneath the site will limit the potential for groundwater percolation into the underlying chalk, and thus a pathway is not considered likely to exist to the principal aquifer. However, perched water above the London Clay, within the made ground may allow the migration of contaminants to neighbouring sites.

Within the site, end users will be largely isolated from direct contact with any contaminants present within the made ground by the presence of the buildings and the extent of the hardstanding, however any soft landscaping will present a potential exposure pathway.

Buried services may be exposed to any contaminants present within the soil through direct contact and site workers will come into contact with the soils during construction works. There is thus considered to be a low to moderate potential for a contaminant pathway to be present between any potential contaminant source and a target for the particular contaminant.

4.1.4 Preliminary Risk Appraisal

In accordance with the guidelines provided by CIRIA[4], the following table comprises the conceptual site model and summarises possible pollution linkages for the site.

Source	Receptor	Pathway	Probability	Consequence
Inorganic and organic contamination within near surface soils resulting from existing and past activities on site including the sources described in Section 4.1.1	End users	Ingestion of contaminated soil or dust, through skin contact or inhalation	Unlikely	Medium
	Vegetation	Uptake via soil through roots	Low likelihood	Mild
	Groundwater	Percolation and leaching of surface run-off	Unlikely	Medium
	Buried services / foundation concrete	Direct contact	Low likelihood	Mild
	Adjacent sites	Surface water flow or drain runs	Low likelihood	Mild
	Site workers	Ingestion of contaminated soil or dust, skin contact, inhalation	Low likelihood	Medium
Inorganic and organic contamination within perched water resulting from existing and past activities on site including the sources described in Section 4.1.1	End users	Direct contact	Unlikely	Medium
	Vegetation	Uptake through roots	Low likelihood	Mild
	Groundwater	Percolation and leaching of surface run-off	Unlikely	Medium
	Buried services / foundation concrete	Direct contact	Low likelihood	Mild
	Adjacent sites	Surface water flow or drain runs	Low likelihood	Mild
	Site workers	Ingestion of contaminated soil or dust, skin contact, inhalation	Low likelihood	Medium

[4] Rudland, DJ, Lancefield, RM and Mayell, PN (2001) *Contaminated land risk assessment. A guide to good practice. CIRIA C552*