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CHARLTON RIVERSIDE
PRELIMINARY RISK ASSESSMENT

RAMBOLL ENVIRON

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EXECUTIVE SUMMARY

Ramboll Environ UK Limited (Ramboll Environ) was commissioned by Leopard Guernsey Anchor Propco Limited (the Client) to carry out a Preliminary Risk Assessment (PRA) with regard to potential land contamination for the proposed residential-led mixed-use redevelopment of a site at VIP Trading Estate and VIP Industrial Estate, Anchor and Hope Lane, London, SE7 7TE (the 'application site') known as Charlton Riverside (the 'proposed development'). The review was undertaken by desk based research and also included a site inspection.

The development proposals, which are currently being refined through the on-going pre-application design and planning process, are envisaged to comprise the following key elements:

- Demolition of existing buildings and structures on the application site;
- Development of residential, leisure and commercial uses; and
- Associated car parking, landscaping and public realm improvements.

Potentially contaminative historical uses at the application site have included a rope works and subsequent general industrial uses; however no significantly contaminative uses such as bulk fuel or chemical storage have been identified. Overall the application site is considered to have a contaminative potential no different from any site with a general industrial past.

Current activities at the application site are industrial. The following activities take place which would in general terms be considered potentially contaminative, albeit no visual evidence of significant contamination was observed during the application site visit:

- Heavy goods vehicle dismantling, maintenance and repair at Units A and B;
- Car maintenance and repair at Units 5, 6, 9 and 22;
- Car dismantling and storage of waste components and fluids at Unit 22;
- Vehicle body refinishing and respraying at Unit 22;
- Pipe welding and fabrication works at Units 13, 14, 15, 19, 20 and 23;
- Engineering works at Units 2, 3, 4, 7, 8, 10, 12 and 26; and
- Vehicle maintenance and storage at the Unit 63.

Surrounding properties are also considered to have a potential for contamination due to past and current uses, including rope works, wharves, paint works and a foundry. In respect of groundwater, the application site is located in a setting of high sensitivity due to the underlying Principal Chalk Aquifer. However, this is largely overlain by superficial deposits of Alluvium which may provide some protection to the underlying Chalk from the downwards migration of surface-derived contamination (if present). The application site is not situated within an Environment Agency (EA) designated groundwater Source Protection Zone.

In respect to surface water, the application site is considered to be located in a setting of moderate sensitivity as the River Thames is located approximately 10m north of the application site at its nearest point.

The Preliminary Risk Assessment that has been undertaken for this report has identified the following:

- The application site comprises two separate plots of land: Plot A, to the north and Plot B, to the south-west. Current activities at the application site include vehicle repair, dismantling and maintenance, vehicle refinishing, metal fabrication, engineering works and a hire vehicle depot and are considered potentially contaminative as would be the case for any industrial uses that include small-scale oil and chemical storage. Potential contaminants at the application site include hydrocarbon oils, and other common industrial contaminants cannot be ruled out such as PAHs, heavy metals, solvents, PCBs and asbestos. However, no significantly contaminative uses such as bulk fuel or chemical storage have been identified.

- Potentially contaminative historic uses of the application site have included a rope works located on Plot A. In this respect the site is no different from any site with a general industrial past. No specific highly contaminative or out-of-the-ordinary industrial uses have been identified as having taken place on-site.
- Historically, the application site has been surrounded by uses including the remainder of the on-site rope works, an area of wharves, and other industrial uses such as a foundry and paintworks. Surrounding uses are considered potentially contaminative, in general terms, as would be the case for any site in an industrial setting. No specific off-site contaminative issues have been identified currently however.
- The application site is considered to be located in a setting of high sensitivity due to the underlying Principal Chalk Aquifer; however this is largely overlain by less permeable superficial deposits of Alluvium which may offer some level of protection to the underlying strata. The vulnerability of the groundwater is also reduced due to the likely depth to groundwater which was estimated to be approximately 9 m below ground level in close proximity to the application site. The application site is not situated within an EA designated groundwater Source Protection Zone.
- The application site is considered to be located in a setting of moderate sensitivity in relation to surface water resources as the River Thames is located approximately 10 m away from the most northerly extent of the application site at its nearest point, albeit some 100 m from the main area proposed for development.

In the UK, a risk-based approach is used to assess the potential impact associated with ground contamination as summarised in the Conceptual Site Model (CSM). No specific highly contaminative activities have been identified as having taken place on site. Rather the former uses of the application site (primarily as part of a wider rope works and more recent small-scale industrial uses) indicate a potential for soil and ground contamination similar to any site with a general industrial past.

The Environmental Health Department of the Royal Borough of Greenwich Council stated that the application site has not been identified for further review under Part 2A of the Environmental Protection Act 1990. In its current use, the Council considers the application site to be a low priority for further review, however on development, site investigations will be required through the planning process.

Further inspection of internal and external areas of the site and a Phase II environmental site investigation and risk assessment will be required at the detailed design stage to determine whether or not remediation is required, and the scope thereof. In the event that remediation is required, it should be noted that as is standard with the redevelopment of a brownfield site like this, the development proposals will adopt a standard approach (isolation or removal of the contamination source and/or by 'engineering' measures such as capping of the site area) to prevent a source-pathway-receptor linkage and thereby avoiding exposure of site occupiers and any construction workers to contaminated soils (if any), and mitigating risks (if any) to Controlled Waters.

Overall, and subject to the additional precautionary investigations and an appropriate level of remediation (if required), Ramboll Environ considers it unlikely that the application site, when developed, would be considered 'contaminated land' as defined by Part 2A of the Environmental Protection Act 1990 (i.e. there is not a complete contaminant-pathway-receptor connection).

1. INTRODUCTION

1.1 Background

Ramboll Environ UK Limited (Ramboll Environ) was commissioned by Leopard Guernsey Anchor Propco Limited (the Client) to carry out a Preliminary Risk Assessment (PRA) with regards to potential land contamination for the proposed redevelopment of a site comprising two plots of land at VIP Trading Estate and VIP Industrial Estate, Anchor and Hope Lane, London, SE7 7TE (the 'application site'). The PRA is required in relation to the proposed residential-led mixed-use redevelopment of the existing industrial estate, known as the Charlton Riverside Project (the 'proposed development').

1.2 Objectives

The objectives of the PRA were to assess the potential for soil and/or groundwater contamination, both at and in the vicinity of the application site, and assess its significance in terms of risks to future site occupants, controlled waters and potential environmental liabilities to the Applicant. For example, this includes the possibility of investigation and remedial actions being enforced by the Regulatory Authorities or other parties.

1.3 Scope

The scope of the PRA was as follows:

- Site reconnaissance to assess the potential for soil and groundwater contamination as a result of current uses, and review of evidence of previous uses and activities at the application site;
- Review of historical land uses and operations at the application site and on neighbouring land, to assess the potential for soil, groundwater and surface water contamination;
- Review of a third party environmental database to assess the potential for contamination at the application site and surrounding area;
- Review of available geological, hydrogeological and hydrological data associated with the application site;
- Regulatory enquiries, in particular, to establish the status of the application site under the Contaminated Land Regulations (Part IIA of the Environmental Protection Act 1990[1]) and search for records of previous use and any known records of previous contamination issues at the application site; and
- A Preliminary Land Contamination Risk Assessment to identify the plausible pollutant linkages for the proposed development.

A site inspection was undertaken, but no sampling or analysis of soils, waters or other materials was undertaken for the purposes of this review.

1.4 Proposed Development

The development proposals are summarised below:

The development proposals will involve the demolition of existing buildings and erection of nine buildings ranging from 2 to 28 storeys in height for Class C3 residential use, with Class B1 employment space and flexible uses comprising Class A1 (retail), Class A3 (Café/ Restaurant), Class D1 (Community Use) and Class D2 (Leisure) at ground floor and first floor level, alterations to existing vehicular access and creation of new pedestrian access from Hope and Anchor

[1] Department for Environmental & Rural Affairs, 2012. Environmental Protection Act 1990: Part 2A. Contaminated Land Statutory Guidance. DEFRA.

Lane and the riverside, creation of new areas of open space and landscaping together with the provision of associated car parking, cycle space, refuse and recycling storage, plant and all other associated works.

2. SITE INSPECTION

The site inspection was carried out by Charles Collins of Ramboll Environ on 26th April 2016. The purpose of the site inspection was to identify current potentially significant sources of contamination on the application site. Representatives of tenanted areas of the site were not available for comment at the time of inspection.

Access was not available into the following areas of the application site at the time of inspection:

- Internal areas of all units; and
- External areas of Units A and B (access was restricted due to emergency service attendance at the premises at the time of inspection).

Notwithstanding the above, it is considered that appropriate access to the application site was provided during the site inspection to identify potentially significant sources of contamination. Further inspection of the application site including internal areas of all units may be required at a later date in order to inform the design of subsequent investigations.

2.1 Site Location and Setting

The application site is located at VIP Trading Estate and the VIP Industrial Estate, Anchor and Hope Lane, London, SE7 7TE at National Grid Reference (NGR) 541110E, 178940N (refer to Figure 1, Appendix 1). The application site comprises two plots of land referred to as 'Plot A' (VIP Industrial Park) and 'Plot B' which are further described below.

The surrounding land uses, as confirmed during the site inspection, are detailed in Tables 2.1-2.4.

Table 2.1: Adjacent and Surrounding Land uses to Plot A

Direction	Description	Distance
North	Commercial units comprising Anchorage Point Industrial Estate	Adjacent – 100 m
East	Commercial and industrial units including a casting foundry and depot.	Adjacent – 100 m
South	Commercial and light industrial units comprising Ropery Business Park.	Adjacent – 100 m
West	Electricity Substation	Adjacent
	Residential properties at Atlas Gardens and Derrick Gardens.	Adjacent – 50 m
	Anchor and Hope Lane with a distribution centre and units comprising Lombard Trading Estate beyond.	50 – 100 m

Table 2.2: Adjacent and Surrounding Land Uses to Plot B

Direction	Description	Distance
North	Residential properties at Atlas Gardens.	Adjacent
East	Commercial and light industrial units comprising Ropery Business Park.	Adjacent
South	Commercial and retail properties comprising Charlton Gate Business Park	Adjacent – 100 m

Direction	Description	Distance
West	Anchor and Hope Lane	Adjacent
	Commercial units comprising Lombard Trading Estate and Anchor and Hope Business Park	10 – 100 m

2.2 Site Description

The application site is irregular in shape and covers an area of approximately 2.53 ha, as shown in Figure 2 (Appendix 1). As indicated above, the application site comprised two separate plots of land: Units 1-26 and Units A and B VIP Industrial Park to the north (herein referred to as 'Plot A') and a second plot of land located to the south-west comprising two commercial premises at VIP Trading Estate (herein referred to as 'Plot B'). A strip of land providing a direct access link to the southern bank of the River Thames extends from the north of Plot A. The location and extent of each plot is shown in Figure 2 and described in further detail below.

The ground surface within the application site is generally level at approximately 3.550 metres above ordnance datum (mAOD) but slopes from -0.550m (3.000 mAOD) at the south west corner to +0.350m (3.900 mAOD) at north east corner. The adjacent retaining wall, towards the east boundary edge is at +1.000m (4.550 mAOD) and the highest point is at the river front, at approximately +2.000m (5.550 mAOD).

2.2.1 Plot A

The northern plot of land (Plot A) is developed to comprise 28 commercial units as outlined in Table 2.3:

Table 2.3 Plot A Tenancy Schedule

Unit	Tenant	Nature of Activities
Units A & B	Truck Align London Ltd	HGV body and chassis repairs
Unit 1	KPT Solutions	MOT station for lorries
Unit 2	Frankis Engineering/Fastline	Manufacture of lifts and lift components
Units 3 & 4	Delmark Engineering	Design and manufacture of specialist lifting equipment
Unit 5 & 6	GVA Autos	MOT station for cars
Unit 7 & 8	Compak Ramps Limited	Manufacture of access ramps for buses
Unit 9	Mushers Garage	Taxi repair
Unit 10	Ideal Elevators Limited	Repair, service and maintenance of lifts
Unit 11	KPT Solutions	Tool and consumable supplier to construction industry
Unit 12	Extreme Lift Services Ltd	Manufacture of lifts and lift components
Unit 13	Page Pipeline Solutions Ltd	Pipe welding works
Units 14/15/19/20 & 23	Pipe Services (Fabrication) Ltd	Pipe welding works
Unit 16	Star Beers	Beer distributor
Unit 17 & 18	KPT Solutions	MOT station for lorries

Unit	Tenant	Nature of Activities
Unit 21	Airstream Events	Event management company.
Unit 22	Stephen John Taylor t/a Charlton Car Care	Vehicle repair garage.
Unit 24	D.Swires t/a D.Swires Refinishing	Vehicle body refinishing / paint spraying.
Unit 25	KPT Solutions	Storage of construction supplies.
Unit 26	Fastline Equipment Ltd	Manufacture of lifts and lift components

External areas at Plot A include a concrete surfaced access road, mixed concrete and asphalt surfaced areas to the front of each unit and asphalt surfaced car-parking areas. External hardstanding occupies approximately 40% of the application site area. The concrete and asphalt surfacing was observed to be in generally fair condition with locally poor condition surfacing as summarised below:

- The external yard area to the front (north) of Units 22-24 was surfaced with concrete hardstanding observed to be in poor condition with cracking and vegetation penetrations noted in areas used for vehicle, waste and oil storage;
- The section of access road running adjacent to the eastern site boundary was observed to be in poor condition, being made up of a mixture of concrete and asphalt surfacing noted to be broken in places with patchy repairs; and
- The concrete hardstanding in the external yard area to the side and rear (north) of Units A and B used for heavy goods vehicle storage and dismantling was observed to be broken and penetrated by vegetation. Access to this area was limited and the inspection was carried out visually from a neighbouring property.

2.2.2 Plot B

The southern plot of land (Plot B) is developed to comprise two commercial units as outlined in Table 2.4:

Table 2.4 Plot B Tenancy Schedule

Unit	Tenant	Nature of Activities
Workshop and Yard (Unit 63)	Northgate Vehicle Hire Ltd	Hire vehicle storage and maintenance
Building and Yard (Unit 64)	Access Solutions Scaffolding Ltd	Scaffolding depot

External areas at Plot B include a concrete surfaced access road, concrete surfaced areas to the front of each unit and concrete/asphalt surfaced yard areas. The concrete and asphalt surfacing was observed to be in generally good condition. External hardstanding occupies approximately 65% of the application site area. Plot B is bordered by a strip of wooded landscaping along the western site boundary. Landscaped areas occupy approximately 15% of the Plot B site area.

2.3 Materials Storage and Handling

2.3.1 Underground Storage Tanks

It is understood that there are no known current or former underground storage tanks (USTs) at the application site, and there was no evidence of such (e.g. no vent pipes, fill ports, or dispensing equipment) observed by Ramboll Environ during the site inspection.

2.3.2 Above-Ground Storage Tanks

It is understood that there are no known current or former above ground storage tanks (ASTs) at the application site. No ASTs were observed by Ramboll Environ at the time of the site inspection.

2.3.3 Other Storage

Inspection of fuel and chemical storage was limited by access restrictions as indicated above. Internal areas of the units on-site were not accessible at the time of the Ramboll Environ site inspection.

External inspection identified limited oil and chemical storage as follows:

Plot A

- Unit 22 – Charlton Car Care

Approximately four 205 litre drums assumed to contain engine oil were observed to be located in the workshop area of Unit 22 along with a number of smaller containers of chemicals associated with car maintenance of less than 25l in capacity. No secondary containment measures were noted.

Plot B

- Workshop and Yard (Unit 64) – Northgate Vehicle Hire Ltd

Several containers of liquids associated with vehicle maintenance of less than 25 litres in capacity were observed to be stored in the Northgate Vehicle Hire workshop, from external inspection. Visual inspection suggested general housekeeping to be good on the premises with no evidence of spillage or staining on the visible floor surfacing.

2.4 Air Emissions

No significant sources of emissions to air were identified in the areas of the application site accessible for inspection at the time of Ramboll Environ's review and based on the information obtained it is considered unlikely that current activities at the application site would require emissions authorisation from the regulatory authorities. No environmental permits were identified from an environmental database search (see Section 3.5 below).

Current activities on site are not expected to yield significant emissions to air.

It is understood that there are no known environmental permits relating to air emissions held by tenants and a compliance audit has not been undertaken by Ramboll Environ.

Heating systems are likely to vary between individual units. Access to internal areas of the units was not possible at the time of inspection and therefore all potential sources of air emissions may not have been identified.

2.5 Water, Drainage and Wastewater

It is understood that all water used at the application site is supplied by municipal mains supply and the application site does not abstract water from groundwater or surface water sources.

It is also understood that all foul water produced at the application site is directed off-site via municipal sewers. A site drainage plan was not available for review during the site inspection. It is understood that there are no known oil/water interceptors across the application site. Visual inspection indicated that a three-stage interceptor may be present at the unit occupied by Northgate Vehicle Hire at Plot B.

It is understood that wastewater from the application site comprises domestic effluent and that there are no known trade effluent consents or discharge consents held by the application site. The need for such consents is usually at the discretion of the local sewerage company and the EA. In any case this would be a tenant responsibility.

2.6 Waste

A review of waste documentation was not included in the scope of the assessment. Based on Ramboll Environ's site inspection, storage of routine waste is not considered a significant ground contamination issue.

Each tenant is responsible for the wastes they generate; waste skips and wheeled bins are located within or outside each of the units. No staining or visual evidence of leachate was observed on the ground in the vicinity of these skips and bins. In addition, several of the units generate wastes for disposal that may potentially contain contaminants as follows:

Plot A

- Units A and B – Truck Align London Ltd

Scrap heavy goods vehicles, bodies and associated components were observed to be stored in the yard area to the rear (east) and side (north) of Units A&B on poorly surfaced ground as indicated in Section 2.2.1 above. The concrete hardstanding was noted to be in poor condition with broken areas penetrated by vegetation.

- Unit 22 – Charlton Car Care & Unit 24 – Swires Refinishing

Scrap vehicles and components were observed in the yard area to the front (north) of Units 22 and 24. Fluids including engine oil were noted to be leaking on to poorly surfaced concrete hardstanding and visual evidence of leachate staining was observed to an area of approximately 10 m x 5 m in size.

Eight 205 litre drums containing waste oil were observed in the same area with visual evidence of spillage and staining noted to the immediately surrounding concrete hardstanding. No secondary containment measures were observed.

Evidence of waste burning was observed in the yard area to the front of these units and staining to the surrounding hardstanding was noted to an area of approximately 5 m x 5 m in size.

- Unoccupied Northern Strip of Land

Fly tipped wastes including vehicle components and empty or partially full 205 litre drums of unknown liquids were observed to be present on an unoccupied strip of land which connects Plot A to the southern bank of the River Thames.

Plot B

Storage of potentially contaminative wastes was not observed in the external areas of the units on Plot B. It is expected that waste fluids from vehicle maintenance are produced at the workshop and yard unit (Unit 63) occupied by Northgate Vehicle Hire, however limited inspection of the workshop indicated the use of appropriate storage and housekeeping practices.

2.7 Building Construction and Deleterious Materials

The buildings on site are constructed with brick walls and corrugated pitched roofs with metal cladding on the upper exterior of the walls of some units. Unit 25 was observed to be of a brick construction with a corrugated cement sheet roof.

2.7.1 Asbestos Containing Materials

No asbestos reports were available for review at the time of Ramboll Environ's inspection. An asbestos survey in accordance with HSG264 (Asbestos - The Survey Guide, HSE 2012) has not been undertaken by Ramboll Environ and is outside the scope of this assessment. However, suspected ACMs were observed in the form of cement roofing sheets at Unit 25.

By way of background under the Control of Asbestos Regulations (2012), the "duty holder" for a building is required to assess where asbestos is or may be present and to develop and implement an ACM management plan, with review and updating as appropriate. The "duty holder" is the party who has, by virtue of contract or tenancy, an obligation for the repair and maintenance of the building.

2.7.2 Polychlorinated Biphenyls

No equipment likely to utilise polychlorinated biphenyls was observed at the application site (e.g. no electricity substations or hydraulic lifts were observed). An electricity substation was observed off-site, adjacent to the west of Plot A which may potentially utilise PCB-based oils.

2.7.3 Ozone Depleting Substances (ODS)

No evidence of ozone depleting substances (such as refrigerant gases) was observed; however ODS containing equipment may be present inside the units. The responsibility for compliance with legislation regarding refrigerant gases would be expected to rest with the tenant. Refrigerant gases are not considered to pose a ground contamination risk.

2.8 Other Issues

It is understood there is no known history of complaints, enforcements or other regulatory actions regarding the application site or immediate surrounding properties related to environmental conditions. There are no known previous spill events reported at the application site.

While Ramboll Environ has not undertaken an ecological survey of the application site, suspected Japanese Knotweed, an invasive species listed under Schedule 9 to the Wildlife and Countryside Act 1981 was identified on-site adjacent to the northern site boundary of Plot B within an area currently used for car parking. A Phase 1 Habitat Survey Report of the application site, undertaken in 2015 by Aspect Ecology, reported that Japanese Knotweed had been identified in this area. By way of background, it is an offence to plant or otherwise cause species listed in Schedule 9 to the Wildlife and Countryside Act 1981 to spread.

2.9 Key Issues Identified From the Site Inspection

2.9.1 The Application Site

The application site comprises two separate plots of land: the northern parcel (comprising Units 1-26 and Unit 50 VIP Industrial Estate, and the southern parcel (comprising three unnumbered units off Anchor and Hope Lane known as VIP Trading Estate).

Current activities on the application site are considered potentially contaminative, as would be the case for any industrial uses that include small scale oil storage. Control measures will therefore be required as part of the proposed development and these are not typically complex.

Potentially contaminative activities on site include storage and dismantling of scrap vehicles and components, vehicle repair and maintenance, metal fabrication, automotive refinishing and engineering works. However, no significant potentially contaminative uses have been identified, for example bulk fuel or chemical storage and the potential for contamination is considered to be no different from any other site with a general industrial use.

Small scale storage of potentially hazardous materials is undertaken at units across the application site; however, this is not considered to pose a significant risk of ground contamination.

No evidence of previous environmental investigations (such as the presence of monitoring boreholes) was identified during the site inspection. No evidence of gas protection measures was observed during Ramboll Environ's visit.

Suspected Japanese Knotweed was identified adjacent to the norther site boundary of Plot B with Derrick Gardens. As previously stated, a previous ecology survey undertaken at the application site had confirmed the presence of Japanese Knotweed. Control measures will be required during the proposed development.

2.9.2 The Surroundings

As shown in Figure 2 (Appendix 1), the majority of the surrounding area comprises commercial/industrial properties and limited residential development. Surrounding uses are considered potentially contaminative, in general terms, as would be the case for a site in an industrial setting. No specific off-site contaminative issues have been identified currently however.

3. SITE HISTORY

3.1 Historical Map Records

A number of historical maps were examined as part of the environmental review. The historical development of the application site and surrounding area is detailed below. Selected historical maps are presented in Appendix 2.

3.1.1 The Application Site

Plot A

The map of 1869 shows the application site to predominantly comprise undeveloped land with a railway line and embankment present along the eastern side boundary which was no longer present by 1896. The central area of the application site was labelled as Allotment Gardens by 1920. By 1953-1955 the south of the application site had been largely developed to include a building of warehouse appearance and yard space associated with a rope works which extended off-site into the surrounds to the south. The rope works was labelled as a 'works' after 1971. A second, smaller, works building had been constructed adjacent to the western site boundary by 1975.

By 1991, the former buildings on Plot A (i.e. the current site layout) had been reconfigured to comprise an arrangement of approximately 28 commercial/industrial units with associated access roadways, car parking and hardstanding. No further changes to the site layout were recorded up the most recent map dated 2016.

Plot B

The earliest available map of 1869 shows the application site to predominantly comprise undeveloped land, bisected from east to west by a footpath. An unlabelled structure encroached on the northern site boundary. By 1869 the footpath and structure in the north of the application site were no longer present. Historical maps dated 1953-1955 show two tennis courts to be present in the south of the application site.

On the 1993-1995 map, Plot B is shown in its current configuration with two commercial units occupying approximately 25% of the total site area with the remainder allocated as yard space.

3.1.2 The Surrounds

The map of 1869 shows the surrounds to be largely undeveloped with the River Thames and associated wharves bordering the application site approximately 10 m adjacent to the north. The application site was bordered to the west by Anchor and Hope Lane and to the east and south by undeveloped land. Charlton Station and the accompanying railway lines were located approximately 290 m to the south with ballast pits located beyond approximately 350 m to the south. The ballast pits were linked to Charlton Ballast Jetty adjacent to the north of the application site by a railway branch line which ran the length of the eastern site boundary of Plot A.

The area previously occupied by ballast pits (350m south) had been developed to comprise a disinfectant works by 1896 and the railway branch line linking the ballast pits to the jetty adjacent to the north of the application site was no longer present. A timber yard was present 50 m to the west of the application site and a paint works had been developed approximately 25 m the east of the application site.

By 1920, a glass bottle works was present approximately 25 m to the west of the application site and another paint works had been developed approximately 10 m to the south-west. The former disinfectant works 350 m south was labelled as old chalk pits. Two residential developments

labelled as Atlas Gardens and Derrick Gardens were developed immediately adjacent to the west of the application site.

A rope works was present on site by 1953-1955 with buildings extending approximately 200 m into the surrounds to the south of the application site.

By 1962-1967 the immediate surrounds had been subject to further development to comprise the New Charlton industrial area with unspecified works and depot premises present adjacent to the north, south, east and west of the application site. The former glass bottle and paint works to the west of the application site were labelled as unspecified works.

By 2006, the site of the former rope works which extended off-site in the surrounds adjacent to the south of the application site had been redeveloped to comprise an arrangement of commercial units labelled as Ropery Business Park.

No further significant changes to the site surrounds were noted on mapping up to the most recently available map of 2016.

3.2 Environmental Health Department Records

Ramboll Environ has obtained confirmation from the Environmental Health Department of the Royal Borough of Greenwich Council that the application site has not been identified for further review under Part 2A of the Environmental Protection Act 1990 at present. In its current use, the Council considers the application site to be a low priority for further review, however on development, site investigations will be required through the planning process.

The Council also confirmed the following in respect of the application site:

- There are no known contamination issues associated with the application site, or sites in the near vicinity;
- There are no known records of landfills on or near the application site; and
- The Council is not aware of any private water abstractions in the area.

3.3 Planning Records

Ramboll Environ searched the planning records in relation to the application site, available on the Royal Borough of Greenwich Council online planning portal. A summary of the planning records is presented in the following paragraphs.

3.3.1 Plot A

Table 3.1 summarises the relevant planning applications for the northern plot.

Table 3.1: Plot A Planning Records

Planning Application Reference	Date	Details	Decision
10/3141/F	November 2010	Unit 50 (Units A and B) Erection of a single storey industrial building enclosing a commercial spray booth.	Approved

3.3.2 Plot B

A search of planning records available on the Royal Borough of Greenwich Council online planning portal did not reveal any relevant applications in relation to Plot B.

3.4 Petroleum Licensing Authority Records

An enquiry was submitted to the Petroleum Licensing Officer at London Fire and Emergency Planning Authority in order to establish if the application site is currently, or has previously, been licensed for the bulk storage of petroleum products. The response did not reveal any relevant records in relation to the application site.

3.5 Environmental Databases

Table 3.4 summarises the environmental information obtained by Ramboll Environ from a proprietary 3rd party database.

Table 3.2: Summary of Key Environmental Database Information

Data Type		On-Site	Within 250 m	Within 500 m	Within 1 km	Details of nearest relevant record within 250 m of the Application Site
Contaminated Land Register entries		0	0	1	0	None
Prosecutions or enforcement actions		0	0	1	0	None
Pollution incidents		0	2	2	3	A category 3 minor incident involving oils was recorded 217m NE of the site on 14/12/1998. A category 3 minor incident involving oils was recorded 220m NE of the site on 07/12/1990.
Recorded Landfill Sites		0	0	0	2	None
Registered Waste Sites		0	2	6	9	DS Smith Recycling UK Ltd - HCI waste transfer station and treatment, 107m NE. Situsec Contractors Ltd – transfer station taking non-biodegradable wastes 244m NE (license expired).
Environmental Permits	Part A(1)	0	0	3	1	None
	Part A(2)	0	0	0	0	None
	Part B	0	1	9	15	Permit registered to Tarmac Ltd for PG3/15 Mineral drying and roadstone coating processes 146 m NE.
Control of Major Accident Hazards Sites (COMAH)`		0	0	0	0	None
Fuel Stations		0	1	3	1	Woolwich Road Self-Serve located approximately 114 m south of the application site, listed as obsolete.

Data Type	On-Site	Within 250 m	Within 500 m	Within 1 km	Details of nearest relevant record within 250 m of the Application Site
Contemporary trade directory entries	12	65	94	174	Active entries on-site include: lifting equipment, commercial vehicle body repairers, lift manufacturers and car body repairs. Active entries within 250m include: air conditioning equipment and systems, printers, MOT testing centres, gearboxes, freight forwarders, builders merchants, blinds and print finishers.
Registered radioactive substances	0	0	0	0	None. Information on certain radioactive substance authorisations is not publicly accessible.
EA discharge consents	0	1	4	6	Closest consent held by Thames Water Utilities 197m north-east of the site for sewage discharge of storm overflow.
Radon affected area (Y/N)	N	-	-	-	N/A
Designated ecological sites	0	1	0	2	The Thames Estuary (a Marine Nature Reserve) is located 9m north of the site.

By way of background, the 'LinesearchbeforeUdig' database lists pipelines distributing crude oil and refined hydrocarbon products owned and/or operated by a number of UK pipeline operators, including BPA, BP, ConocoPhillips, Esso, Government Pipelines and Storage System, Sabic, Shell and Total. According to the database, there are no records of underground oil or refined hydrocarbon products pipelines on the application site or within 250 m.

The application site is not located in a "Radon Affected Area". According to the Building Research Establishment, radon protection measures are not required for new buildings at this location.

3.6 Potential for Historical Contamination

Plot A

Plot A remained largely undeveloped the mid-20th century. In terms of potential ground contamination, a rope works was present from the 1950s to the 1990s and the buildings were subsequently reconfigured to comprise the current layout with uses which may have included the use and storage of chemicals, fuels and oils. Other industrial contaminants cannot be ruled out.

Plot B

Plot B remained largely undeveloped until the early 1990s at which time this portion of the application site was developed to comprise a two industrial units with associated yard space, the use of which may have some contaminative potential.

3.6.1 The Application Site

The application site was developed for industrial use (as part of a wider rope works) by the 1950s, prior to which it had been undeveloped land and allotment gardens. Rope works were common in port areas such as this. In general terms, the general use as a rope works would be considered potentially contaminative, for example from storage and use of oil (e.g. for heating or equipment maintenance), asbestos (from use in buildings) and polycyclic aromatic hydrocarbons (in ash waste, from heating of tar). In this respect this site is no different from any site with a general industrial past and no specific highly contaminative or out-of-the-ordinary industrial uses have been identified as having taken place on site (e.g. no in-filled pits, no chemically intensive processes, no bulk underground tank farms). Indeed, the southern land plot of the application site (Plot B) did not appear to be part of the operational works, and included tennis courts. Search of a third party publically available environmental database has identified no records of pollution incidents, prosecutions or enforcement actions on site, and similarly no records of contaminated land registrations or landfills on site. Overall it is considered that the application site has contaminative potential that is typical of brownfield sites in urban areas that have former industrial uses.

3.6.2 Surrounding Area

Historically, the application site has been surrounded by undeveloped land and then mixed residential, industrial and commercial uses. The site surrounds are considered to have a greater contaminative potential to the application site itself, albeit typical of an urban historically industrial area. Surrounding uses have included the remained of the on-site rope works (which extended off-site) an area of wharves (north, along the River Thames) and other industrial uses such as a foundry and paintworks.

4. ENVIRONMENTAL SETTING

Desk based research was undertaken regarding the geology, hydrogeology and hydrology of the application site and its surroundings to establish the potential for contaminants (if present) to migrate towards, or away from, the application site. The vulnerability and sensitivity of the application site and its surroundings in relation to ground and surface water were also researched. Information was obtained from the following:

- Published geological maps from the British Geological Society (BGS);
- Online BGS Geology of Britain Map Viewer;
- Publicly available BGS Borehole Records;
- Environment Agency (EA) databases;
- A proprietary 3rd party environmental database procured by Ramboll Environ; and
- Previous intrusive site investigations.

4.1 Geology and Hydrogeology

According to the British Geological Survey (BGS) 1:50,000 mapping of the area (Sheet 271, Dartford) and the online BGS Geology Map Viewer, the majority of the application site is directly underlain by superficial deposits of Alluvium (clay silty, peaty, sandy). The underlying solid geology at the application site comprises the Lewes Nodular Chalk Formation.

There is record of a BGS borehole record (ref: TQ47NW1624) located approximately 10 m west of the application site. This encountered:

- 0.9 m of Made Ground comprising tarmac and concrete over ash stone fill and sandy gravel of tarmac, concrete and brick;
- The Made Ground was recorded as underlain by silty Clay/Peat/Alluvium to a depth of 9.1 m;
- The Alluvium was underlain by coarse sandy flint gravel recorded as the Lambeth Group to a depth of 14.0 m;
- White chalk was encountered underlying the Lambeth Group to final depth of 20.0m bgl (below ground level); and
- Groundwater was encountered at 9.5 m during drilling with the resting water level recorded at approximately 7.7 m bgl.

The superficial Alluvium deposits are classified by the EA as a Secondary Undifferentiated Aquifer; this has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type. The underlying Chalk is classified as a Principal Aquifer as it contains layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale.

According to the Coal Authority, the application site is not located in a Coal Mining Affected Area. The BGS has stated that the application site is located in an area where other (non-coal) mining activities are rare.

According to the Landmark Envirocheck database, there are seven licensed groundwater abstractions within 1 km of the application site as detailed within Table 4.1. There are no groundwater abstractions for potable public supply within 2 km of the application site.

Table 4.1: Licensed Groundwater Abstractions within 1 km of Application Site

Operator	Distance (Direction from Application Site)	Purpose
United Marine Aggregates Ltd	470 m (W)	Mineral Products: Mineral Washing and Process Water
United Marine Aggregates Ltd	522 m (W)	Sand And Gravel Washing
Tarmac Ltd	551 m (W)	Mineral Products: Mineral Washing and Process Water
Tarmac Ltd	566 m (W)	Mineral Products: Mineral Washing and Process Water
Sainsbury's Supermarkets Ltd	930 m (W)	Food And Drink: Non-Evaporative Cooling
Sainsbury's Supermarkets Ltd	936 m (W)	Food And Drink: Non-Evaporative Cooling
Sainsbury's Supermarkets Ltd	940 m (W)	Other Industrial/Commercial/Public Services: Make-Up Or Top Up Water

The application site is not situated within an EA designated groundwater Source Protection Zone.

4.2 Surface Water

The nearest identified surface water course is the River Thames located approximately 10 m to the north of the application site.

According to the EA, the application site is located in Flood Risk Zone 3 (High Probability). This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%) in any year. The application site benefits from flood defences protecting the application site from the River Thames to the north in the event of a river flood with a 1 per cent (1 in 100) chance of happening each year, or a flood from the sea with a 0.5 per cent (1 in 200) chance of happening each year. If the defences were not there, these areas would be flooded. Flood defences do not completely remove the chance of flooding, however, and can be overtopped or fail in extreme weather conditions.

By way of background, it should be noted that the information from regulatory flood maps (as outlined above) have been developed to be used in strategic planning and is not intended to provide site-specific information. However, the mapping can provide a useful indication of whether further consideration or assessment of flood risks to a site may be required.

There are seven licensed surface water abstractions within 1 km of the application site as detailed within Table 4.2. There are no surface water abstractions for potable public supply within 2 km of the application site.

Table 4.2: Licensed Surface Water Abstractions within 1 km of the Application Site

Operator	Distance (Direction from Application Site)	Purpose
Day Group Ltd	450 m (W)	Mineral Products: Dust Suppression
United Marine Aggregates Ltd	583 m (W)	Mineral Washing
Day Group Ltd	638 m (W)	Other Industrial/Commercial/Public

Operator	Distance (Direction from Application Site)	Purpose
		Services: Dust Suppression
Cemex UK Materials Ltd	690 m (NW)	Mineral Products: Mineral Washing
Cemex UK Materials Ltd	717 m (NW)	Mineral Products: Mineral Washing
United Marine Aggregates Ltd	750m (W)	Mineral Products: Mineral Washing
St Albans Sand And Gravel Company Limited	766 m (W)	Mineral Products: Mineral Washing

4.3 Environmental Sensitivity and Vulnerability

The application site is considered to be located in a setting of high sensitivity due to the underlying Principal Chalk Aquifer; however this is largely overlain by less permeable superficial deposits of Alluvium (as well as the Lambeth Group). The Alluvium may provide some protection to the underlying Chalk from the downward migration of surface-derived contamination (if present).

The application site is considered to be located in moderate sensitivity setting in relation to surface water resources as the River Thames is located within 10 m of the most northerly extent of the application site, albeit further away (some 100 m) from the main area proposed for development.

5. PRELIMINARY RISK ASSESSMENT

5.1 Introduction

A qualitative assessment of the risks associated with potential soil and groundwater contamination has been made through the formulation of a CSM. The CSM presents the contaminant, pathway and receptor scenario for the application site in terms of the plausible pollutant linkages for future redevelopment.

The findings of Ramboll Environ's Phase I review have been taken into account in this model.

5.2 Proposed Development

The development proposals, which are currently being refined through the on-going pre-application design and planning process, are envisaged to comprise the following key elements:

- Demolition of existing buildings and structures on the application site;
- 975 residential units provided within 9 buildings ranging in height from 2 to 28 storeys, including extensive private gardens and roof terraces;
- 1,560 sqm (GIA) of office space;
- Ancillary residential facilities including gym, swimming pool, changing rooms totalling 864 sqm (GIA);
- 690 sqm (GIA) of flexible retail/restaurant/café/leisure use;
- 407 sqm (GIA) of community uses;
- Extensive external public realm improvements and landscaping including a 1.a neighbourhood park within Plot A and a 2,063 sqm podium garden within Plot B; and
- Parking, services, plant and circulation.

5.3 Potential Contaminants

The following potential sources of contamination have been identified at the application site following the Phase I review:

- Historical use of Plot A as part of a rope works;
- Development of Plots A and B to comprise VIP Trading estate and subsequent use as light industrial and commercial premises since the mid-20th century;
- Heavy goods vehicle dismantling, maintenance and repair at Units A and B;
- Car maintenance and repair at Units 5, 6, 9 and 22;
- Car dismantling and storage of waste components and fluids at Unit 22;
- Vehicle body refinishing and respraying at Unit 22;
- Pipe welding and fabrication works at Units 13, 14, 15, 19, 20 and 23;
- Engineering works at Units 2, 3, 4, 7, 8, 10, 12 and 26;
- Vehicle maintenance and storage at the Unit 63; and
- Asbestos containing materials within existing buildings.

Hydrocarbons from possible oil storage and use are considered a primary potential contaminant. However the presence of other common industrial contaminants cannot be ruled out such as PAHs, heavy metals, solvents, PCBs and asbestos.

5.4 Pathways and Receptors

5.4.1 Human Health

In terms of the proposed development, potential human health receptors would include future site users and ground workers during construction works. Pathways between the 'Contaminant' and the 'Receptor' include direct contact, ingestion and inhalation of contaminated soil. It is understood that the proposed development is likely to include public landscaped areas and may (subject to the emerging design) include private gardens. Taking this into consideration, it is likely that areas of soft landscaping will require a clean cover of top soil, and that areas of private residential gardens (if any) will require a break layer and clean cover of top soil, to break the contaminant pathway.

An additional pathway identified would be ingress of vapour and land gas (if present) into buildings. Elevated levels of land gases (if present) at the application site should be mitigated through appropriate building design and gas protection measures.

5.4.2 Controlled Waters

The following Controlled Water Receptors have been identified:

- Groundwater within the Chalk, which is classified as a Principal Aquifer.

The groundwater is considered to be of high sensitivity as groundwater in the Chalk is classified as a Principal Aquifer. Groundwater has been encountered in the vicinity of the application site at approximately 9 m bgl. The overlying superficial deposits of Alluvium at the application site are also considered to offer some level of protection to the deeper aquifer and due to the depth to groundwater it is considered unlikely that a significant risk to Controlled Waters exists.

However, there are potential active pathways present (e.g. 'contaminant' migration from the soil to groundwater). Further investigation would better characterise this 'contaminant-pathway-receptor' connection for Controlled Waters which may be required as a planning condition for the development.

5.4.3 Third Party Land

Third party-land is a potential off-site receptor or source of contamination (if present) within groundwater and/or as land gas. The nearest residential properties are located immediately adjacent to the west of the Plot A and the north of the Plot B; however, due to the depth to groundwater in the vicinity of the application site, it is considered unlikely that off-site receptors would be affected by contamination migrating within the groundwater. Potential sources of ground contamination in the surrounds include wharves, historical paint works, a rope works, a casting foundry, numerous unspecified works and depots. The surrounds are considered to have a greater potential for contamination than the application site itself.

5.4.4 Construction Workers

It should be noted that this risk assessment is not intended to assess transient risks to site workers during redevelopment or other construction workers. These risks are dealt with by other legislation and regulations, including the Health and Safety at Work Act, 1974 and the Control of Substances Hazardous to Health Regulations 2002 and subsequent amendments.

5.4.5 Buildings

Contaminants in the ground have the potential to affect building materials and services, and a risk assessment will need to be undertaken by the development contractor to ensure building materials, water supply pipes, etc. are appropriately designed and specified.

5.5 Conclusion of Preliminary Risk Assessment

Based on the PRA and the on-going development plans, Ramboll Environ considers that a number of potential sources of contamination have been identified in relation to current and historical uses both on-site and in the near surrounds. Furthermore, Ramboll Environ understands that there has not yet been ground investigation at the application site. Therefore further assessment will need to be undertaken prior to development, as would be standard practice.

Ramboll Environ considers that the planned further investigation work will fully determine environmental risks and the need (or not) for remediation for the whole application site. Additional inspection of the application site, including all internal and external areas would be undertaken to inform the investigation design.

In Ramboll Environ's experience the contamination that is likely to be present could be addressed through standard remediation techniques as the application site is not significantly different to many brownfield developments.

Risk assessment and remediation actions that may be considered as part of the detailed design comprise the following:

- Completion of an appropriate site investigation and risk assessment focussed on the proposed development; and
- Remediation of contamination that is shown to represent an unacceptable risk to site users or Controlled Waters.

Ramboll Environ envisages that if required, the main methods of remediation may comprise the following (although the need for, and scope of such, would be dependent on the findings of the investigation work and appropriate risk assessments):

- Encapsulation of the soil and groundwater through the building design (i.e. preventing site users being exposed to the soil);
- Placement of a break layer and a clean cover of top soil in private gardens (if any);
- Installation of gas protection within the building design (e.g. gas protection membranes); and
- Localised soil contamination hotspot removal and or in-situ treatment of soil and groundwater.

In addition, a piling risk assessment would be undertaken to minimise pollution risks to Controlled Waters and clean soil would be imported in landscaped areas.

As with any brownfield site a number of health and safety and other precautions would be implemented (e.g. isolation of drinking water supply pipes from the surrounding soil). This is standard and routinely undertaken on brownfield sites across the UK.

6. CONCLUSIONS

The findings of the PRA are summarised as follows:

- The application site comprises two separate plots of land: Plot A, to the north and Plot B, to the south-west. Current activities at the application site include vehicle repair, dismantling and maintenance, vehicle refinishing, metal fabrication, engineering works and a hire vehicle depot and are considered potentially contaminative as would be the case for any industrial uses that include small-scale oil and chemical storage. However, no significantly contaminative uses such as bulk fuel or chemical storage have been identified;
- Potentially contaminative historic uses of the application site have included a rope works located on Plot A. In this respect the application site is no different from any site with a general industrial past. No specific highly contaminative or out-of-the-ordinary industrial uses have been identified as having taken place on-site;
- Historically, the application site has been surrounded by uses including the remainder of the on-site rope works, an area of wharves, and other industrial uses such as a foundry and paintworks. Surrounding uses are considered potentially contaminative, in general terms, as would be the case for any site in an industrial setting. No specific off-site contaminative issues have been identified currently however.
- The application site is considered to be located in a setting of high sensitivity due to the underlying Principal Chalk Aquifer; however this is largely overlain by less permeable superficial deposits of Alluvium which may offer some level of protection to the underlying strata. The vulnerability of the groundwater is also reduced due to the likely depth to groundwater which was estimated to be approximately 9 m bgl in close proximity to the application site. The application site is not situated within an EA designated groundwater Source Protection Zone; and
- The application site is considered to be located in a setting of moderate sensitivity in relation to surface water resources as the River Thames is located approximately 10m away from the most northerly extent of the application site at its nearest point, albeit some 100 m from the main area proposed for development.

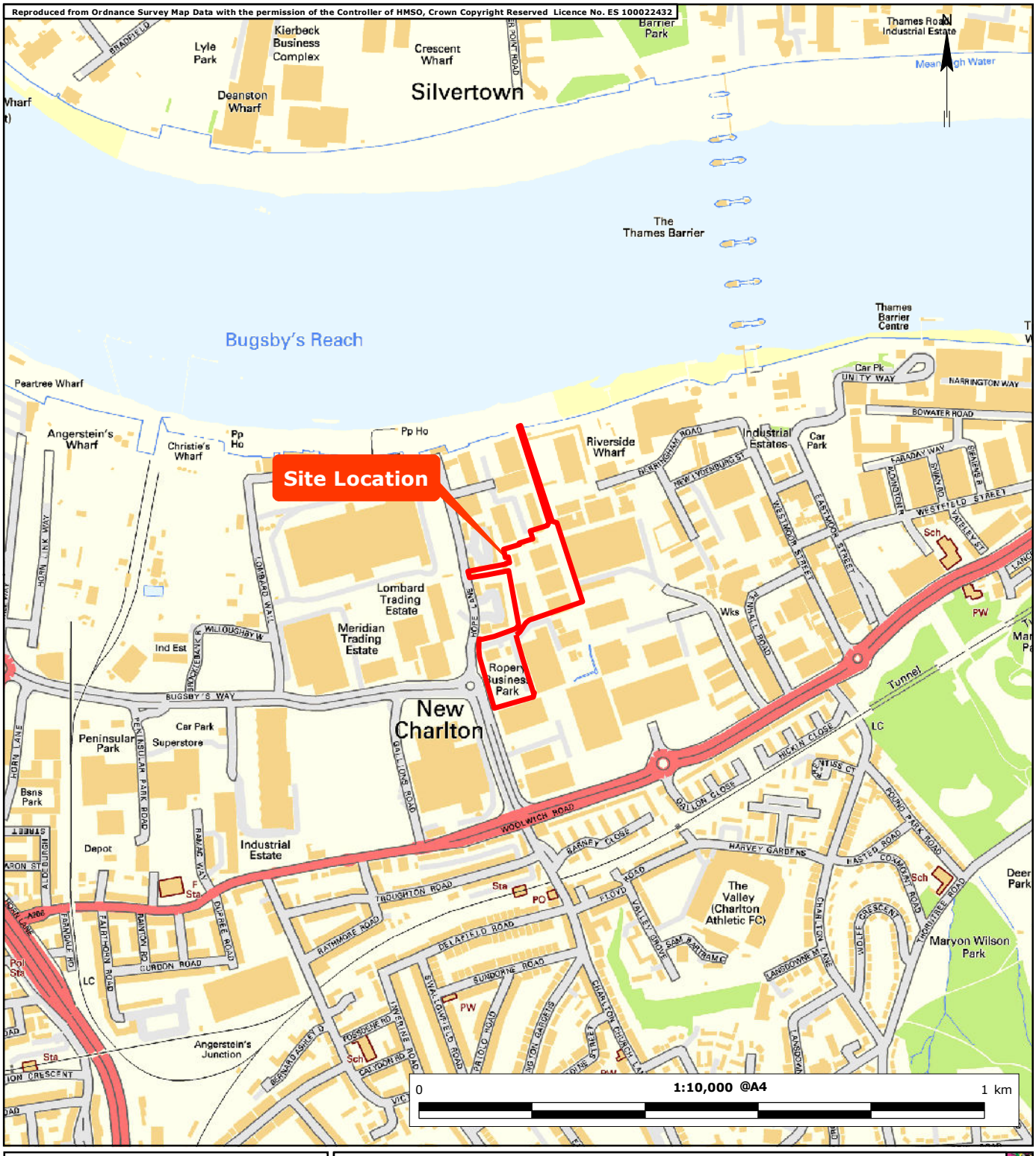
In the UK, a risk-based approach is used to assess the potential impact associated with ground contamination as summarised in the CSM. No specific highly contaminative activities have been identified as having taken place on site. Rather the former uses of the application site (primarily as part of a wider rope works and more recent small-scale industrial uses) indicate a potential for soil and ground contamination similar to any site with a general industrial past.

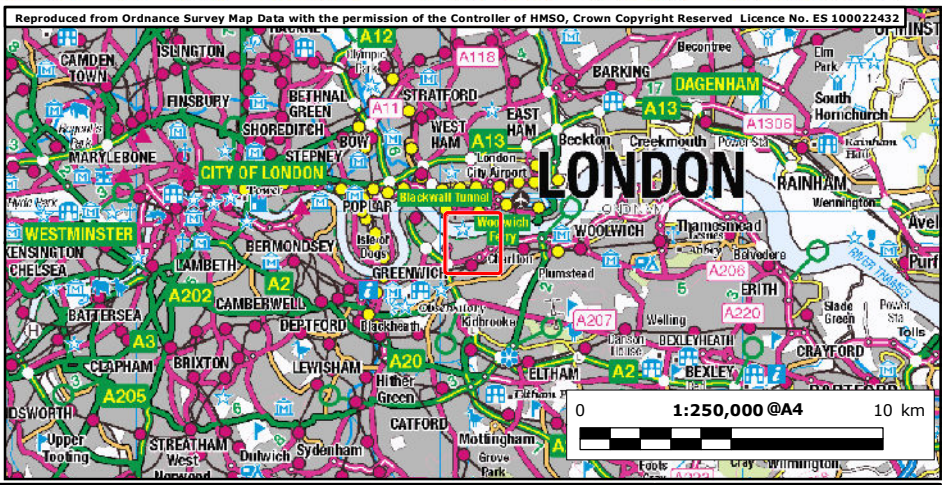
Ramboll Environ has obtained confirmation from the Environmental Health Department of the Royal Borough of Greenwich Council that the application site has not been identified for further review under Part 2A of the Environmental Protection Act 1990. In its current use, the Council considers the application site to be a low priority for further review, however on development, site investigations will be required through the planning process.

Further inspection of internal and external areas of the application site and a Phase II environmental site investigation and risk assessment will be undertaken post-planning permission (subject to a suitably worded planning condition) to determine whether or not remediation is required. In the event that remediation is required, it should be noted that as is standard with the redevelopment of a brownfield site like this, the development proposals will adopt a standard approach (isolation or removal of the contamination source and/or by 'engineering' measures such as capping of the site area) to prevent a source-pathway-receptor linkage and thereby avoiding exposure of site occupiers and any construction workers to contaminated soils (if any), and mitigating risks (if any) to Controlled Waters.

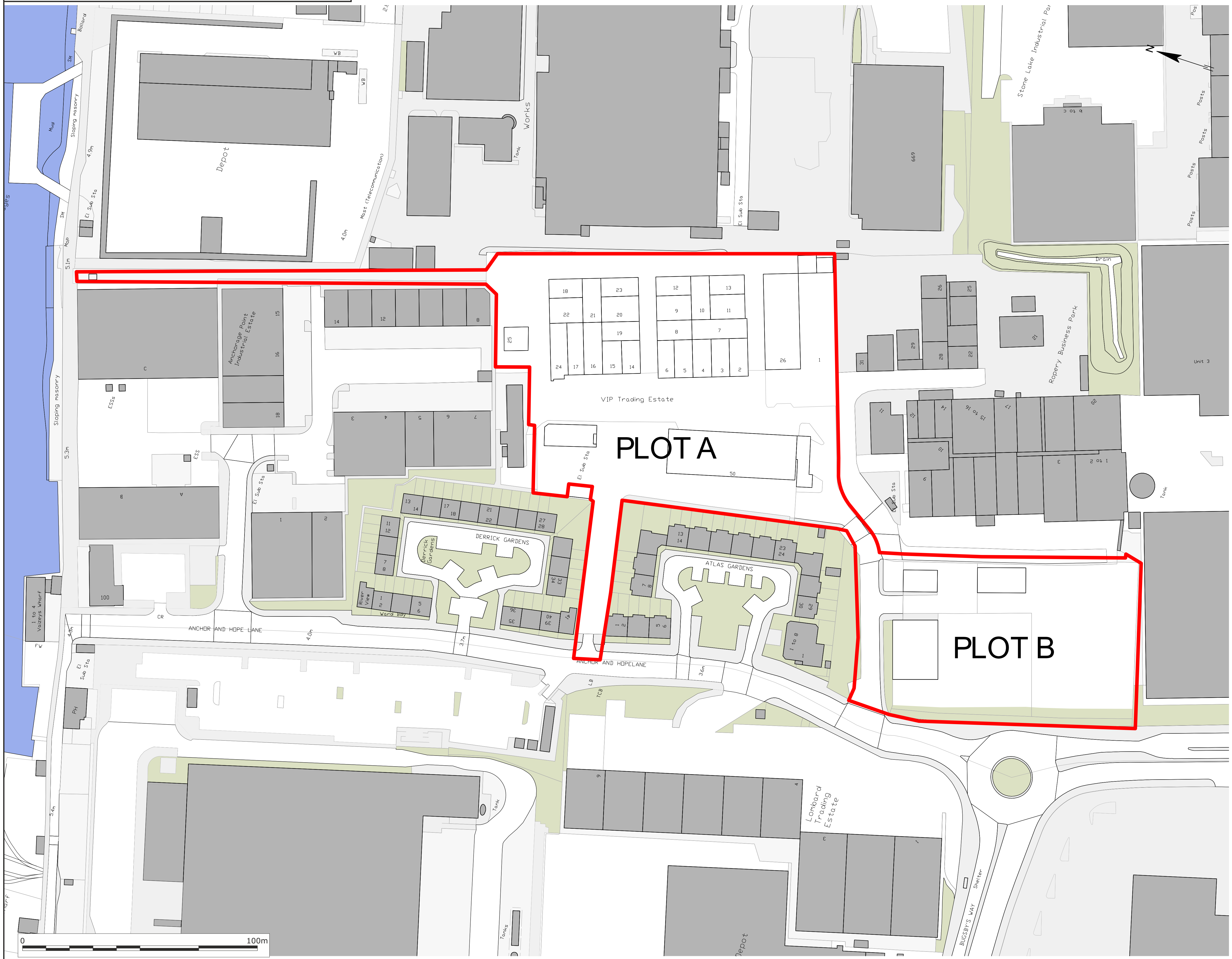
Overall, and subject to the additional precautionary investigations and an appropriate level of remediation (if required), Ramboll Environ considers it unlikely that the application site, when developed, would be considered 'contaminated land' as defined by Part 2A of the Environmental Protection Act 1990 (i.e. there is not a complete contaminant-pathway-receptor connection).

APPENDIX 1
FIGURES





Title: Figure 1: Site Location	Site: Charlton Riverside, Anchor & Hope Lane, London, SE7 7RY	Date: November 2016	RAMBOLL ENVIRON
		Scale: As shown	
Project No.: UK11-23110	Client: Leopard Guernsey Anchor Propco Limited	Issue: 1 Drawn by: DM	



Key

Site Boundary

Title	Figure 2: Site Layout
Project No.	UK11-23110
Site	Charlton Riverside, Anchor & Hope Lane, London, SE7 7RY
Client	Leopard Guernsey Anchor Propco Limited
Date	November 2016
Scale	1:1,500 @ A3
Issue	1
Drawn by	DM

RAMBOLL ENVIRON

APPENDIX 2
SELECTED HISTORICAL MAPS

RAMBOLL ENVIRON

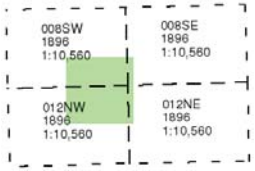
London

Published 1896

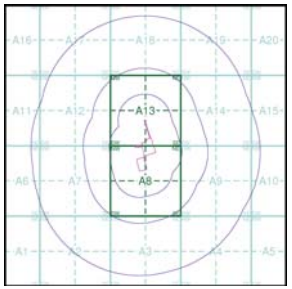
Source map scale - 1:10,560

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; these maps were used to update the 1:10,560 maps. The published date given therefore 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. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	85108001_1_1
Customer Ref:	UK11-223xx Charlton Riverside
National Grid Reference:	541110, 178940
Slice:	A
Site Area (Ha):	2.53
Search Buffer (m):	1000

Site Details

Charlton Riverside, Anchor & Hope Lane, London, SE7 7RY

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

RAMBOLL ENVIRON

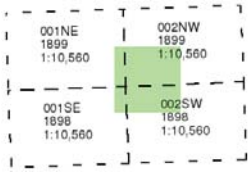
Kent

Published 1898 - 1899

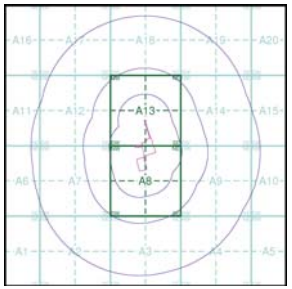
Source map scale - 1:10,560

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; these maps were used to update the 1:10,560 maps. The published date given therefore 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. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



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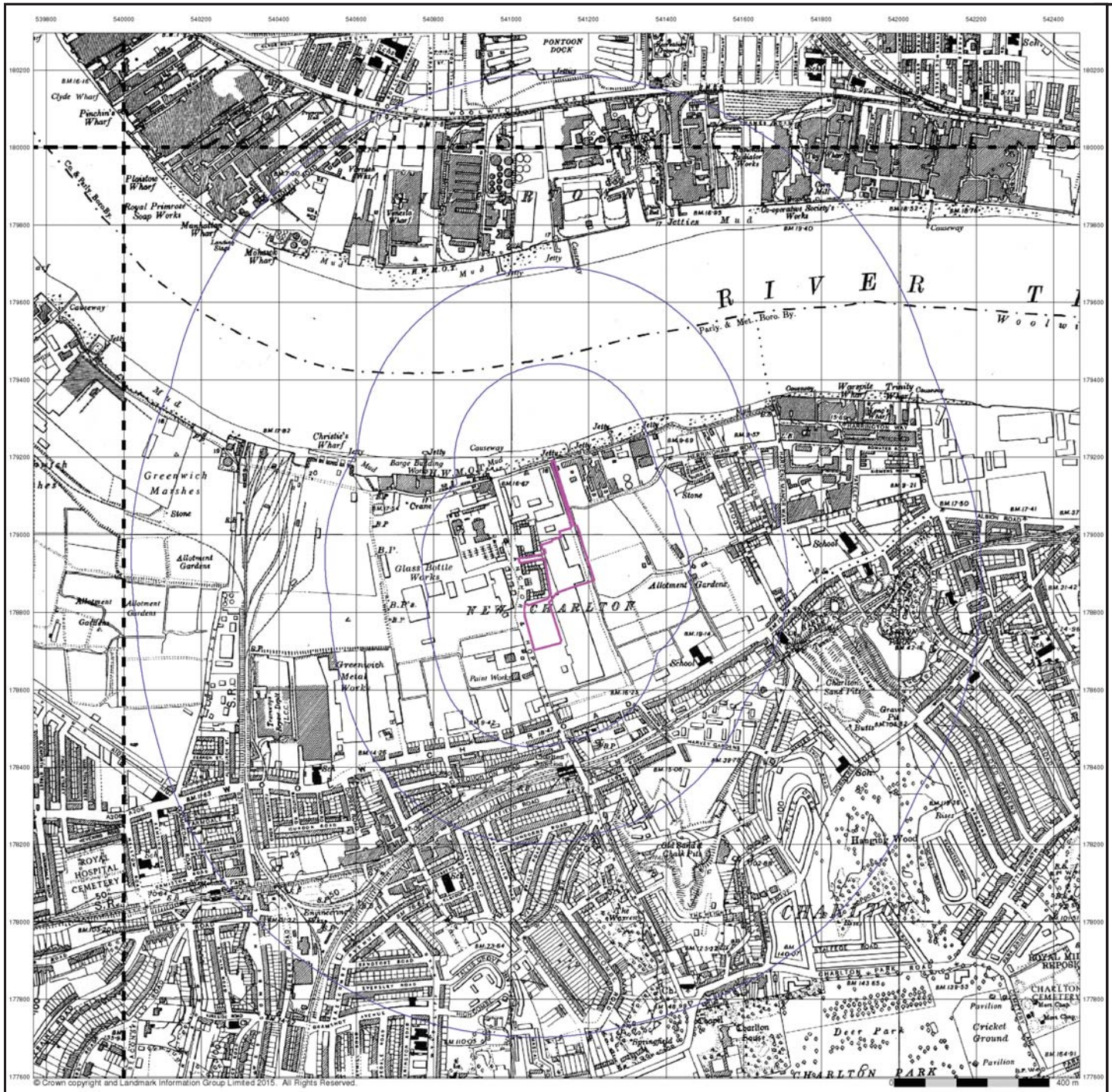


RAMBOLL ENVIRON

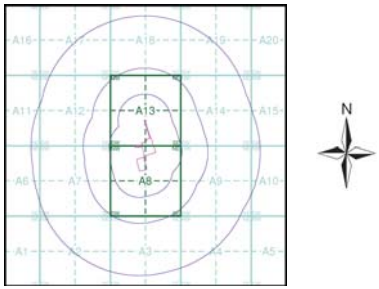
Ordnance Survey Plan
Published 1940 - 1951
Source map scale - 1:10,000

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; these maps were used to update the 1:10,560 maps. The published date given therefore 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. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TQ38SE 1951 1:10,560	TQ48SW 1940 1:10,560
TQ37NE 1940 1:10,560	TQ47NW 1940 1:10,560

Historical Map - Slice A



Order Details

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Customer Ref:	UK11-223xx Charlton Riverside
National Grid Reference:	541110, 178940
Slice:	A
Site Area (Ha):	2.53
Search Buffer (m):	1000

Site Details

Charlton Riverside, Anchor & Hope Lane, London, SE7 7RY

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

RAMBOLL ENVIRON

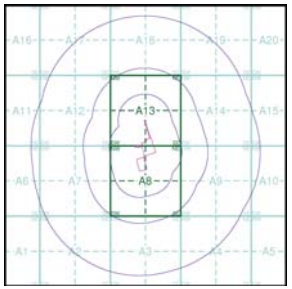
Ordnance Survey Plan
Published 1981 - 1984
Source map scale - 1:10,000

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; these maps were used to update the 1:10,560 maps. The published date given therefore 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. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

TQ38SE 1982 1:10,000	TQ48SW 1984 1:10,000
TQ37NE 1981 1:10,000	TQ47NW 1982 1:10,000

Historical Map - Slice A



Order Details

Order Number:	85108001_1_1
Customer Ref:	UK11-223xx Charlton Riverside
National Grid Reference:	541110, 178940
Slice:	A
Site Area (Ha):	2.53
Search Buffer (m):	1000

Site Details

Charlton Riverside, Anchor & Hope Lane, London, SE7 7RY

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

RAMBOLL ENVIRON

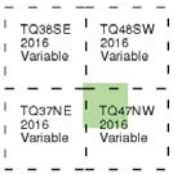
VectorMap Local

Published 2016

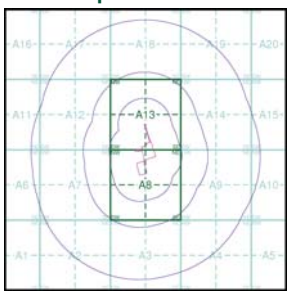
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



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