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Leopard Guernsey Anchor Propco Limited

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CHARLTON RIVERSIDE

EIA INFORMAL SCOPING REPORT – CONFIDENTIAL

RAMBOLL ENVIRON

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CONTENTS

APPENDICES

1. INTRODUCTION

1.1 Background

Ramboll Environ Ltd (Ramboll Environ) has been commissioned by Leopard Guernsey Anchor Propco Limited (hereinafter referred to as the 'Applicant') to prepare an Environmental Impact Assessment (EIA) informal Scoping Opinion Request for the proposed redevelopment of a site at Charlton Riverside, New Charlton, Greenwich (hereinafter referred to as the 'application site'). The application site is located within the administrative boundary of the Royal Borough of Greenwich (RBG) as shown in Figure 1.1.

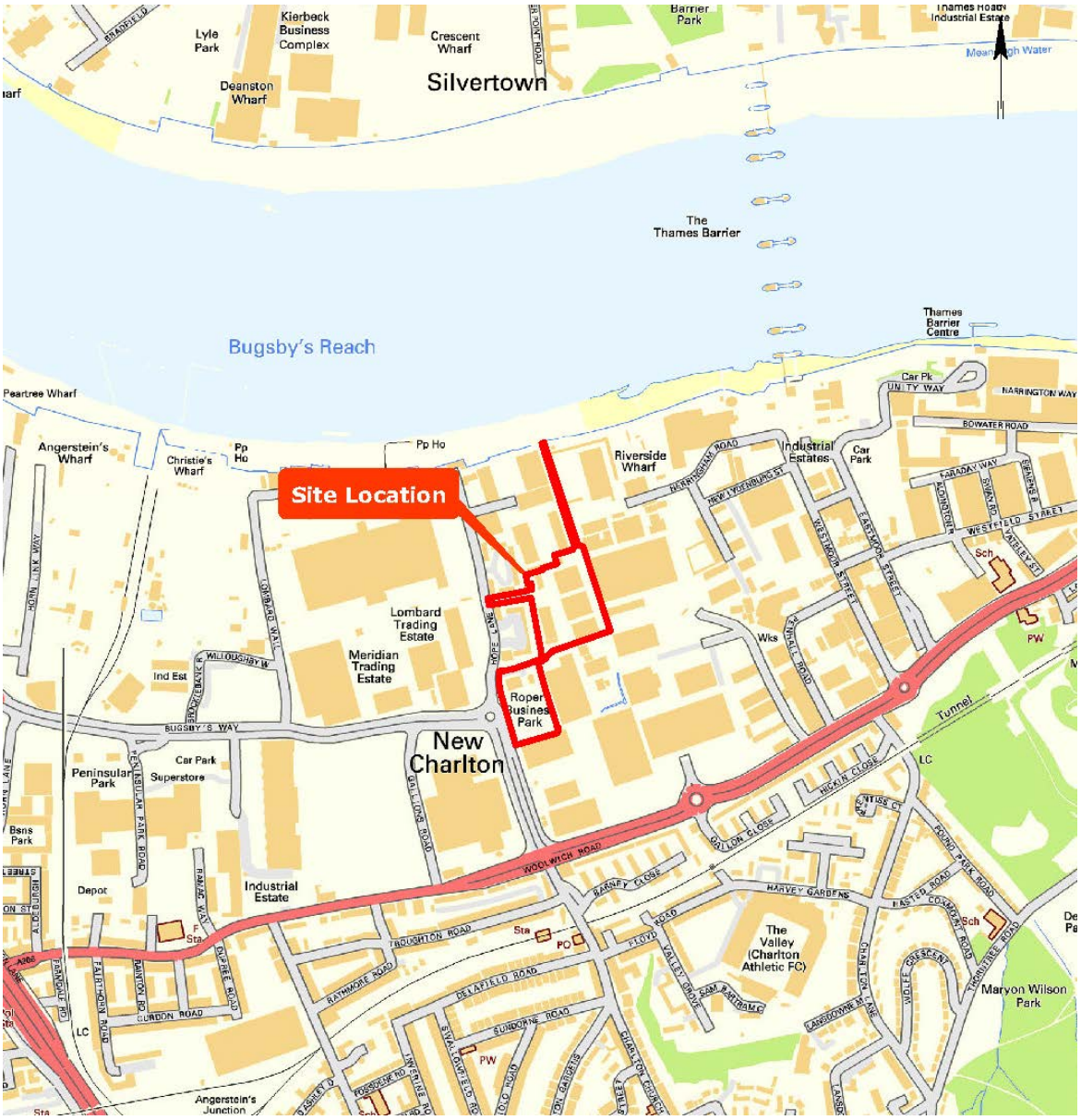

Figure 1.1: Site Location Plan

Due to the scale and nature of the proposed development, outlined in Section 4 of this Report, it is considered that the proposals fall within Schedule 2 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended in 2015) (hereinafter referred to collectively as the 'EIA Regulations').

EIA Screening is the term in the EIA Regulations used to describe the process in which the need for EIA is considered. In this case, as the proposed development is considered to fall under Schedule 2 (10(b) Infrastructure projects – Urban Development Projects) of the EIA Regulations,

and given the size and nature of the proposed development, the need for formal screening is not considered necessary, instead proceeding straight to the EIA scoping stage.

An EIA will accordingly be undertaken. The findings of the EIA will be reported in an Environmental Statement (ES), which will accompany a full planning application ('the Application') for the proposed development. This EIA process is more fully described in Section 2 of this Report.

Ramboll Environ has been commissioned by the Applicant to undertake the EIA and to prepare an ES to accompany the Application.

1.2 Purpose of EIA Scoping Report

Whilst it is recognised that in accordance with the provisions of Regulation 13 of the EIA Regulations, an EIA Scoping Opinion Request Report should be submitted to the RBG to request that they state in writing their opinion as to the information to be provided in the ES (i.e. a Scoping Opinion), due to the confidential nature of the proposed development, we ask that you provide feedback to us informally and confidentially. This report does not constitute a formal request for a screening opinion.

We would appreciate the RBG's view on our proposed scope of works and approach to be adopted within the EIA of the proposed development. We note that due to the informal and confidential nature of this request that you will not consult with the statutory consultees to get their views, nor upload this Scoping Report onto the public register.

This Report:

- summarises some of the key considerations of the EIA process in Section 2 and the approach that will be adopted for the EIA of the proposed development;
- outlines the key planning considerations in Section 3;
- describes the key characteristics of the application site in Section 4;
- describes the emerging development proposals for the application site in Section 5;
- highlights the potential significant environmental impacts and likely effects anticipated for the application site at this stage in Section 6;
- explains in Section 6, the proposed scope and assessment methodology that will be adopted to predict the magnitude of potential impacts and the scale of likely effects and to assess the significance in each case within the EIA; and
- outlines the environmental issues in Section 7, which are considered unlikely to give rise to significant environmental effects for the application site.

2. EIA PROCESS

2.1 Need for Environmental Impact Assessment

EIA is a formal process by which the effects of certain types of development projects on the environment are identified, assessed and reported upon in order for the effects to be taken into account by the relevant competent authority when considering whether to grant planning permission.

The process enables the systematic examination of each of these effects and facilitates the refinement of the emerging development proposals by the project team to minimise adverse impacts on the environment and to maximise beneficial outcomes. Collectively, in generating a significant amount of information on the likely environmental effects of a development proposal, the EIA enables informed decision-making on the merits of a proposed development by the relevant planning authority.

The circumstances under which the EIA is carried out and the basic process to be followed are set out in the EIA Regulations (referred to earlier) and guidance issued by Government. The EIA Regulations specify what information is to be provided to the relevant planning authority. A key document is the ES, which is the Applicants' own assessment of the likely significant environmental effects of the proposed development. The specific information to be provided in the ES is also defined in the EIA Regulations.

The EIA Regulations set out in general terms the content of an ES and allow an Applicant to obtain a formal EIA 'Scoping' Opinion from the relevant planning authority regarding the issues to be considered within the EIA for a specific development proposal; what information should be contained in its ES; and what effects are likely to be more significant than others. Please note, as referred to earlier within this report, due to the confidential nature of the proposed development at this time, we are submitting an informal confidential scoping report for your review and feedback, rather than formally scoping.

2.1.1 Format and Content of the Environmental Impact Assessment

The specified information to be included in the ES of the proposed development will comprise:

- A description of the application site, its surrounding context and associated environmental sensitivities – baseline conditions;
- An outline of the environmental factors that have informed the development proposals and the main alternatives studied during the proposed development's preparation, clearly explaining the criteria for selection;
- A description of the proposed development containing information on:
  - the physical characteristics and land use requirements of the proposed development during the demolition and construction works and the completed development,
  - the main characteristics of any production processes where appropriate,
  - the expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development;
- A description of the aspects of the environment likely to be significantly affected by the proposed development, including:
  - humans,
  - fauna and flora,
  - soil,
  - water,
  - air,

  - climate,
  - material assets, including the townscape, heritage, landscape and archaeological assets,
  - the interrelationship between the above factors;
- A description of the likely significant effects of the proposed development on the environment, which should indicate the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, beneficial and adverse effects of the proposed development resulting from:
  - the existence of the development,
  - the use of natural resources,
  - the emission of pollutants, the creation of nuisances and waste;

  The description will also include forecasting methods used to assess the effects on the environment;
- A description of mitigation measures to prevent, reduce and where possible offset any significant adverse effects on the environment;
- A non-technical summary of the information provided above; and
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered in compiling the required information.

The ES will comprise three volumes:

- Volume 1: Main ES Report;
  - comprising five introductory chapters (including Introduction, EIA Process and Methodology, Alternatives and Design Evolution, Description of the Proposed Development and Construction and Environmental management), followed by technical assessment chapters.
  - The technical assessments chapters would report on the EIA of the proposed development as described in the introductory chapters, as well as in documents that will accompany the Application, as explained in Section 3.
- Volume 2: Townscape and Visual Assessment (TVA); and
  - accompanied by a full set of views and Accurate Visual Representations (AVRs).
- Volume 3: ES Technical Appendices.
  - including Transport Assessment (TA), Ecology Phase 1 Habitat Survey, Preliminary Risk Assessment (PRA) and a Flood Risk Assessment (FRA)).

The three volumes of the ES will be summarised within a Non-Technical Summary (NTS), which will outline the key findings of the EIA, presented in non-technical language to assist the reader.

2.2 Baseline Conditions

The EIA for the proposed development will predict the likely scale of change in environmental conditions as a result of the redevelopment proposals. The assessment of the scale and significance of a predicted change is undertaken against a reference condition, known as the baseline. In most cases, the baseline represents the environmental condition of the application site and the surrounding area at the time of the assessment, although it may also include a projected environmental condition at some point in the future.

The baseline for the EIA will be taken as the ‘current’ application site and its immediate surrounds.

A Phase 1 Habitat Survey has already been undertaken at the application site to inform the emerging development proposals (see Appendix 1 for the map). This survey is considered to characterise the 'current' ecological baseline conditions at the application site

Consideration will also be given, as appropriate, (and subject to programmed implementation) within the EIA to future site conditions:

- at the time the proposed development is completed; as well as
- with other planned development in the vicinity of the application site (Cumulative effects).

2.3 Predictive Methods and Assessment Criteria

The EIA employs a range of tools and approaches aimed at predicting the likely nature and extent of environmental effects. Some technical assessments rely on mathematical models which provide a quantitative estimate of the size of an environmental change or impact, such as the levels of noise or air pollutants likely to arise from net additional traffic, or from heating plant. Other technical assessments rely on map-based techniques to plot the extent of land use change or habitat loss or use illustrative methods, to communicate how a proposed development might appear in a particular viewpoint.

The predictions in the EIA will indicate the nature and magnitude of a proposed development's potential impacts and likely effects, to enable informed planning decisions about the likely environmental outcomes of the proposed development. However, these predictions may be subject to a degree of uncertainty. As such, the tools employed and the assumptions made in each case will be developed accordingly and set out clearly.

Predicted environmental effects are described by reference to their anticipated significance. Significance is not an absolute concept, but is usually framed with reference to thresholds or criteria. A range of quantitative and qualitative thresholds and values tend to be used, supported by narrative descriptors. The aim is to ensure the terms and assumptions used in assessing significance are transparent.

The methods and approaches proposed for predicting and assessing impacts as a result of the proposed development are set out in Section 6 of this Report.

2.4 Alternatives

The EIA Regulations require that the ES provides an outline of the main alternatives to the proposed development considered by the Applicant and the reasons for the selection of the preferred proposal. The alternatives considered in the course of the design process, such as site location and various land uses and layouts and design evolution, will be presented.

The rationale for the selection of the preferred design will be included in the ES.

2.5 Assessment Methodology

The EIA will be undertaken in line with best practice guidance, which includes the following publications:

- England and Wales: Online National Planning Practice Guidance[1]
- Department of Transport: Design Manual for Roads and Bridges Volume 11: Environmental Assessment[2], 2008;
- Institute of Environmental Assessment: Guidelines for Environmental Assessment of Road Traffic[3], 1994;

[1] http://planningguidance.planningportal.gov.uk/blog/guidance/environmental-impact-assessment

[2] Department for Transport, 2008. Design Manual for Roads and Bridges Volume 11: Environmental Assessment.

[3] Institute for Environmental Assessment, 1994. Guidelines for Environmental Assessment of Road Traffic [Now the Institute of Environmental Management and Assessment (IEMA]

- Institute of Environmental Management and Assessment: Guidelines for Environmental Impact Assessment[4], 2004;
- Department for Communities and Local Government (DCLG): Amended Circular on Environmental Impact Assessment (consultation paper)[5], 2006;
- DCLG: Environmental Impact Assessment: A guide to good practice and procedures (consultation paper)[6], 2006;
- DCLG: Guidance for Environmental Impact Assessment. On-line Resource[7]; and
- Institute of Environmental Management and Assessment Special Report into the State Environmental Impact Assessment Practice in the UK[8], 2011.

As a general rule, the EIA will assess the outcome or residual environmental effects that are likely to arise as a consequence of a potential impact/change to environmental receptors following the application/consideration of mitigation measures. The significance of environmental effects in the absence of mitigation will therefore not be reported on in the ES, unless otherwise stipulated within specific ES Chapters.

The assessment of residual environmental effects of the proposed development on the baseline conditions of the application site will be undertaken using specific methods of prediction including established guidelines and techniques.

Methods of prediction to be applied within this EIA will be either quantitative or qualitative or in certain instances, both. Quantitative methods predict measurable changes as a result of the proposed development and rely on accurately measuring baseline conditions of the application site to make accurate predictions with the completed proposed development.

Qualitative assessment techniques rely on expert judgment and are exercised within a structured framework to ensure consistency of conclusions drawn. Clear distinctions will be made between matters of fact, judgement and opinions with all sources identified. Assumptions, degrees of confidence and areas of uncertainty will be clearly stated.

In assessing the significance of any residual effect, regard will be had to:

- the sensitivity of the environmental receptor to the change or impact, based on a scale of high, medium and low;
- the magnitude of the potential impact, based on a scale of high, medium, small and unknown which is informed by the following:
  - the likelihood of the impact occurring, based on a scale of certain, likely or unlikely;
  - the duration of the impact, based on a scale of long, medium and short-term;
  - the geographical extent of the impacts at local, borough, regional, national and international levels;
  - the reversibility of the impact, being either reversible or irreversible; and
  - the mitigation measures integral to the design; demolition and construction; and completed development proposals.

Where published industry guidance and terminology do not exist and in order to provide a consistent approach to the presentation of likely effects, the following terminology will be used throughout the ES:

[4] Institute of Environmental Management and Assessment (IEMA), 2004, Guidelines for Environmental Impact Assessment. IEMA.

[5] Department for Communities and Local Government, 2006. Amended Circular on Environmental Impact Assessment: A consultation paper. DCLG.

[6] Department for Communities and Local Government, 2006. Environmental Impact Assessment: A guide to good practice and procedures – a consultation paper. DCLG.

[7] Department for Communities and Local Government, 2014. Guidance for Environmental Impact Assessment. DCLG.

[8] Institute of Environmental Management and Assessment, 2011. The State of Environmental Impact Assessment Practice in the UK.

Nature / Type of Effects

- Adverse: detrimental or negative effect to an environmental resource or receptor;
- Neutral: no effect to an environmental resource or receptor; and
- Beneficial: advantageous or positive effect to an environmental resource or receptor.

Scale of Effects:

- Negligible: effects which are beneath levels of perception;
- Minor: slight, very short or highly localised effects;
- Moderate: limited effects (by magnitude, duration, reversibility, value and sensitivity of receptor) which may be considered significant; and
- Major: considerable effect (by magnitude, duration, reversibility, value and sensitivity of receptor, which may be more than of a local significance or lead to a breach of a recognised environmental threshold, policy, legislation or standard).

Residual effects will be defined as either 'significant' or 'not significant'. Significant effects would be considered material to the planning decision making process. Based on the above, residual effects of moderate and major scale may be considered significant, but would be dependent on the relevant technical assessment, as well as the existence of published assessment guidance. Where published assessment guidance is not definitive in respect of categorising/determining significant environmental effects, professional judgement would be applied, taking into account the duration, extent and context of the effect, to determine significant effects.

Where there are any deviations to the terminology set out above (e.g. due to published industry guidance or professional judgement), this would be clearly identified and explained within the relevant ES Chapter.

As part of the design and EIA process, measures will be developed and discussed with relevant consultees (i.e. NE, TfL, HE, EA) to avoid, reduce, remediate potential adverse effects, or provide enhancements, where appropriate.

3. PLANNING CONTEXT

3.1 Planning History

The application site was originally within an agricultural area. The area gradually changed to industrial use during the 19th Century, and has remained primarily industrial in use since.

Roads and passageways have evolved which demonstrates the industry and development the area has undergone over the years.

Initial investigations show the area has been a base for a variety of businesses including:

- Rope makers;
- Barge builders;
- Timber yards; and
- Aggregate processing units.

These land uses all have some intrinsic connection to the river and maritime activity, which the new masterplan should continue and build on.

There are no known previous planning applications on this site.

3.2 Application

As noted earlier a Full Planning Application will be submitted. The following documents will accompany the Application (to be confirmed with the RBG):

- Covering Letter, Application Form and Application Fee;
- Redline boundary plan - OS base;
- Certificates and Notices;
- Planning Application Drawings (including Existing Drawings);
- Design and Access Statement (including Landscape Strategy and Public Art Strategy);
- Planning Statement;
- Community Infrastructure Levy (CIL) Form;
- Statement of Community Involvement;
- Environmental Statement (including the TVA, PRA, FRA and TA).
- Sustainability Assessment and Energy; and
- Utilities Report.

3.3 Planning Policy

The proposed development will be guided by a number of policy directives and guidance discussed in the sections below. It is important to note, however, that although these policy directives and guidance will inform the scope of technical assessments within the EIA, the proposed development's compliance to and performance against these policy directives and guidance (together with associated planning standards/targets) will be appraised within the Planning Statement for the Application.

3.3.1 National Policy

National Planning Policy Framework, 2012

The ES will have regard to the National Planning Policy Framework (NPPF), which became immediately effective in March 2012. The NPPF sets out the Government's economic, environmental and social planning policies for England. The policies contained within the NPPF articulate the Government's vision of sustainable development, which are intended to be interpreted at a local level, to meet the requirements of local aspirations.

The ES will also make reference to the Planning Practice Guidance (PPG), which is an online resource that became effective in March 2014. The PPG aims to make planning guidance more accessible, and to ensure that the guidance is kept up to date.

3.3.2 Regional Policy

The ES will have regard to the following regional strategic planning documents:

- The London Plan (2015): Spatial Development Strategy for Greater London Consolidated with Alterations Since 2011;
- Housing Supplementary Planning Guidance (SPG) (2016);
- Shaping Neighbourhoods: Character and Context (2014);
- Shaping Neighbourhoods: Play and Informal Recreation SPG, (2012);
- Accessible London: Achieving and Inclusive Environment SPG (2014);
- London's Foundations (2012);
- London View Management Framework SPG (2012);
- Sustainable Design and Construction SPG (2014);
- Mayor's Air Quality Strategy SPG (2010);
- London Regional Flood Risk Appraisal – First Review (2014);
- Land for Industry and Transport (2012);
- The Control of Dust and Emissions During Construction and Demolition (2014); and
- Safeguarded Wharves Review Final Recommendation (2013).

In addition, the London Housing Design Guide is of relevance to the proposed development. This guide seeks to:

- clarify, consolidate and set new minimum space standards in a number of key policy areas; and
- promote better neighbourhoods, high environmental standards, better accessibility and better design (including guidance on natural light and ceiling heights).

3.3.3 Local Policy

Together with the London Plan (2015), the following local strategic planning policy documents make up the Development Plan for the application site.

Royal Greenwich Local Plan: Core Strategy with Detailed Policies, 2014

The Local Plan was adopted in 2014 and sets out the vision and key policies for planning within the RBG and supersedes the majority of the policies within the Unitary Development Plan (UDP) (2006).

Unitary Development Plan (UDP), 2006

The majority of the policies within the UDP have since been superseded by the Local Plan (2014), with the exception of the UDP Site Proposal Schedules, which remain until the Local Plan: Site Allocations has been adopted.

Site Allocation Local Plan Issues and Opinions Paper, 2016

The emerging Site Allocation Local Plan has recently undertaken the first round of consultations. This document is set to de-designate the industrial use of the application site for "*high quality river front development … to be transformed into an attractive a vibrant mixed use urban quarter providing several thousand new homes*".

Charlton Riverside Masterplan, 2012

The Charlton Riverside Masterplan SPD was adopted in April 2012 and provides a strategic planning framework for development over the following 15-20 years. The document outlines the following strategic objectives:

- "*Integrate Charlton Riverside with the existing Charlton community;*
- *Transform the image of Charlton and introduce a sustainable mix of uses;*
- *Contribute towards the development of the Thames gateway as a great place to live and work;*
- *Connect into the transport network;*
- *Embrace smart industry to draw greater value from employment land;*
- *Develop a creative hub to diversify activity in the local area;*
- *Create a thriving new neighbourhood set within its landscape;*
- *Create a new education focus; and*
- *Stitch together retail and residential neighbourhoods within Charlton Riverside."*

Greener Greenwich SPD, 2014

The Greener Greenwich SPD provides guidance to ensure new developments are sustainably designed and constructed by covering five key topic areas (Energy; Water; Biodiversity; Materials; Waste; Flood Risk; Pollution).

Planning Obligations SPD, 2015

The Planning Obligations SPD provides guidance on the type and scale of planning obligations for development proposals within the RBG.

4. THE APPLICATION SITE

4.1 Site Location and Context

The application site is located in the RBG, within the local area of New Charlton. The River Thames and existing industrial units form the northern boundary, and existing industrial units and Ropery Business Park bound the application site to the east. The A206 duel carriageway and Charlton Gate Business Park are located to the south, and Anchor and Hope Lane along with adjacent residential properties forms the western boundary.

The application site is irregularly shaped and occupies an area of approximately 2.57 ha, consisting two main areas, with an access route to the River Thames to the north. It is currently occupied predominantly by industrial warehouse and business park units.

A large Sainsbury's distribution centre is located further west of the application site, comprising a warehouse, an energy centre, a vehicle wash and an area for refuelling. Additionally, Stone Lake Retail Park is located to the south-east.

4.1.1 Site Description and Surrounding Environment

The application site's surrounding context is predominantly industrial. This is characterised by existing warehouses and retail outlets that border the application site, with the exception of residential properties that bound the west.

Geological maps for the area indicate that the geology beneath the application site is underlain by Lewes Nodular Chalk Formation.

The application site, due to its proximity to the River Thames, has been designated as an 'Area of High Archaeological Potential' within the RBG's Local Plan.

The nearest watercourse to the application site is the River Thames, located adjacent to the most northern extent of the application site. This stretch is within the tidal limits of the River Thames and the Thames Barrier is approximately 450 m to the north-east. The latest Environment Agency Flood Zone Maps shows that the application site is located in Flood Zone 3 of the defended River Thames floodplain. The application site is defended by the Thames Barrier and linear flood defences along the banks of the River Thames which protect the application site against tidal and fluvial flooding to the 1,000 year standard.

Three Safeguarded Wharves, designated under GLA planning policy, are located within 900 m of the application site. The closest being Riverside Wharf, approximately 150 m to the east.

In terms of ecological features within the surrounding area, Gilbert's Pit (Charlton) Site of Special Scientific Interest (SSSI) is located approximately 630 m to the south-east of the application site. The nearest Local Nature Reserve (LNR) is the Maryon Wilson Park, which is located approximately 900 m to the south-east.

The application site is not located within or adjacent to a Conservation area. Charlton Village and Woolwich Common are located approximately 1 km to the south and south-east respectively. Furthermore, the Maritime Greenwich World Heritage Site is located approximately 2 km to the south-west.

There are no statutory listed buildings within a 500 m radius of the application site, the closest being Fossdene School, a Grade II listed building approximately 700 m to the south-west.

The application site currently benefits from a good to moderate transport accessibility, with a PTAL rating of 4 to 3. Charlton Railway Station is located approximately 350 m to the south. The station is situated on the Greenwich Line and North Kent Line. The nearest underground station is North Greenwich, which is approximately 2.6 km north-west of the application site. In addition,

the 472, 177, 180 and N1 bus routes run along the A206, close to the south of the application site and the 486 runs along Anchor and Hope Lane to the west.

The application site is not located within a view designated by the London View Management Framework SPG or the RBG Core Strategy.

The prevailing townscape character comprises the following:

- Residential development, largely terraced housing of two–four storeys, dominates the area north of Woolwich Road; and
- Retail/business park/light industrial buildings dominate the area south of Woolwich Road, including the application site.

The application site is located within an Air Quality Management Area (AQMA) declared under the Environment Act 1995, which incorporates the whole RBG. The AQMA has been designated due to high traffic flows within the RBG which give rise to concentrations of pollutants nitrogen dioxide (NO_2) and fine particulates (PM_{10}).

The application site falls outside the designated London Congestion Charging Zone.

5. PROPOSED DEVELOPMENT

The development proposals will involve the demolition of existing industrial buildings at the application site (approximately 2.57 ha) known as Anchor and Hope Lane, which forms part of the wider Charlton Riverside Framework, and a comprehensive redevelopment to provide a high quality residential-led mixed-use development accommodated in a variety of residential typologies (townhouses to high-rise apartments) with a mix of public and private spaces at ground and building roof levels (consisting of hard and soft landscaping).

The proposed development will bring forward up to approximately 950 residential dwellings ranging from approximately three storeys up to approximately 25 storeys, with a maximum of 3,500m^2 commercial space at ground floor level, and a partial basement-level car park.

6. POTENTIAL ENVIRONMENTAL IMPACTS AND LIKELY EFFECTS

This section summarises the potential environmental impacts and likely effects that are at this stage anticipated to arise in connection with the proposed development and will therefore be addressed in the EIA. It sets out the approach to be adopted in each instance, the scope of technical assessments to be undertaken and the assessment methods proposed.

6.1 Demolition and Construction

Demolition and construction activity impacts are temporary and intermittent. Nevertheless, they can cause significant effects on environmental resources and amenity, in the absence of appropriate management and mitigation.

As mentioned earlier, ES Volume 1 will contain a non-technical chapter that will describe the proposed development's anticipated redevelopment programme and the key activities that are expected to be undertaken during demolition and construction works.

The chapter will identify, in general terms, the potential significant short-term, local environmental impacts and likely effects associated with demolition and construction activities and will outline the measures that would be adopted as part of the development proposals to manage and mitigate such impacts and effects. As such the chapter would provide a framework Construction Environmental Management Plan (CEMP) for the proposed development.

Measures that will be explored by the Applicant would include the:

- re-use and recycling of demolition materials and excavated waste materials;
- appropriate selection of construction materials;
- appropriate on-site management and siting of activities in relation to sensitive receptors;
- monitoring of noise and air emissions; and
- provision of a liaison officer.

In doing so, reference would be made to relevant codes of construction practices.

It is important to note that this Chapter will not assess the significance of likely effects during the demolition and construction works, as this will be addressed within subsequent individual technical assessment chapters of the ES, where relevant.

6.1.1 Methodology and Scope

Assessment of demolition and construction impacts relies on an understanding of demolition and construction methods, techniques, equipment and phasing that is rarely available at the planning application stage. For this reason, 'realistic' scenarios will be adopted, with assumptions clearly identified in this Chapter of the ES. This will be based on demolition and construction methodologies for the application site which can be used as a benchmark that would not be exceeded. Outputs will be identified that can be the subject of controls. It should be noted that in using this approach, actual construction methods may be more benign.

Using assessments carried out in relation to specific impacts, this Chapter will set out how demolition and construction impacts and effects would be avoided, reduced or controlled through a CEMP at the application site. The Chapter would provide an outline of the CEMP to define the policies, procedures and management framework for the implementation of specific controls. As such, the CEMP would address amongst others:

- public safety;
- amenity and site security;
- operating hours;

- noise and vibration controls;
- air and dust management;
- storm-water and sediment control; and
- waste and material re-use.

The CEMP would be a key form of mitigation and as stated above, is anticipated to be secured by means of a suitably worded planning condition.

6.2 Climate Change

The potential impacts of a new development to affect climate change would largely be determined by the demolition and construction works of the proposed development, as well as the way the new buildings and residential units are used during operation, the latter of which is particularly difficult to accurately quantify at the planning stage; however, development and planning can play an important role within the wider determinants of climate change mitigation including sustainable design initiatives.

The Applicant would seek to achieve a number of sustainable design initiatives in line with policy requirements and in particular, the Mayor of London's 'Energy Hierarchy' and sustainability targets, as well as any relevant requirements set out by RBG.

The proposed development's energy strategy would therefore aim to:

- minimise overall energy demand and consumption through practicable energy efficient design;
- minimise carbon dioxide emissions arising from the operation of the proposed development as far as practicably possible through the use of efficient plant, fittings and fixtures; and
- reduce carbon dioxide emissions arising from the operation of the proposed development as a result of on-site low carbon technology.

A number of technical assessments within the EIA will also consider the proposed development's indirect or secondary impacts on climate change, namely, the:

- Flood Risk Assessment; and
- Air Quality Assessment.

Furthermore the Applicant would commit to the following best practice measures during the demolition and construction stage to minimise potential climate change impacts:

- Re-use and recycling of demolition, excavation and waste materials (where possible);
- Appropriate selection of construction materials;
- Monitoring of air emissions;
- Air and dust management; and
- Storm-water and sediment control.

The above measures would be set out within the CEMP and would be secured by means of a suitably worded planning condition.

Accordingly it is considered that climate change will be comprehensively considered within the ES as a whole, such that a discrete Climate Change technical assessment will not be presented within ES Volume 1.

6.3 Socio-Economics

A socio-economic technical assessment with be presented in ES Volume 1. This assessment will consider the potential socio-economic impacts of the proposed development (in particular its

housing provision component) on key community infrastructure such as education and healthcare facilities; open space and playspace; as well as local and regional economic development.

6.3.1 Site Information/Potential Impacts

The application site is currently operational and is occupied by light industrial and warehouse units.

The application site is located within the Woolwich Riverside ward of the RBG.

In respect of planning policy designations, the application site is confirmed within the RBG Local Plan: Site Allocations as a strategic development location for a mixed-use urban location.

The proposed development is for a residential-led mixed-use scheme and would therefore result in a change to the existing uses of the application site. As such, it is envisaged to have a range of social and economic impacts and effects, some of which would be temporary and of a local scale (such as employment created during the demolition and construction works), whilst others would be long-term and permanent. The following potential significant impacts and likely effects could arise:

- Loss of existing employment on-site;
- Generation of direct and indirect employment and training opportunities associated with demolition and construction;
- Creation of permanent direct and indirect, long-term employment opportunities associated with the proposed commercial land uses;
- Additional expenditure resulting from additional employees, residents and potential visitors;
- Provision of new homes;
- Demands from the new residential population on community facilities including any recreation and leisure facilities, open space (including children's play space), healthcare and schools (primary and secondary); and
- Effects on crime, including perceptions of public safety.

6.3.2 Approach and Methodology

There is no published assessment guidance applicable to this assessment topic.

The proposed socio economics assessment will comprise the following:

- A review of the socio-economic baseline conditions at the application site, the local neighbourhood level (Lower Layer Super Output Area), borough level (the RBG) and regional level (London). Consideration would be given to population, deprivation, housing, employment and economy, education facilities, healthcare facilities and open space provision using established statistical sources such as the 2011 Census, official labour market statistics, Annual School Census, National Health Service data, and information available from the RBG;
- An estimation and quantification of the population and child yield associated with the completed and operational proposed development;
- An estimation and quantification of the Full Time Equivalent (FTE) jobs generated by the demolition and construction works;
- An estimation and quantification of the FTE jobs created by the completed and operational proposed development;
- An estimation and quantification of the additional local spend created by the completed and operational proposed development;
- An assessment of the effects upon housing supply against the current baseline;

- An assessment of the effects of the proposed development's additional population on existing community facilities including primary healthcare, schools (primary and secondary) and open space (including children's play space);
- An assessment of the accessibility of open space within and available to the proposed development;
- A qualitative assessment of the likely effects on crime including perceptions of public safety; and
- Identification of additional mitigation measures, including planning obligations, should any significant adverse effects be identified.

The assessment will assess the existing provision locally (particularly in relation to education, healthcare and open space) and consider how the demands generated by the proposed development would be met.

Consideration will also be given to cumulative impacts and effects.

6.4 Townscape and Visual

A townscape and visual technical assessment will be presented in ES Volume 1. This assessment will consider the potential for the proposed development to affect the townscape character of the application site and the townscape study area; the townscape settings of designated, and non-designated heritage assets within the study areas (e.g. listed buildings, conservation areas, and locally listed buildings); and visual amenity.

6.4.1 Site Information/Potential Impacts

The application site is largely occupied by warehouses/ light industrial sheds and areas of hardstanding. The prevailing townscape character around the application site comprises the following:

- Residential development, largely terraced housing of two–four storeys, which dominates the area north of Woolwich Road; and
- Retail/business park/light industrial buildings which dominate the area south of Woolwich Road, including the application site.

There are no listed buildings on the application site, and it is not located within a conservation area. Above-ground built heritage assets around the application site, which have the potential to be affected to a significant extent in terms of their townscape setting by the proposed development, will be considered. The initial study area for built heritage assets will be set at a 1 km radius from the centre of the application site.

The buildings on the application site would be demolished and replaced by an entirely new residential-led mixed-use development. The resulting change in height and massing, together with the provision of new buildings and open space, would have the potential to alter the existing townscape character and quality of the application site and the surrounding townscape study area. In addition, views to, from and through the application site, and the townscape setting of heritage assets including any relevant conservation areas and listed buildings, would also potentially be altered as a result of the proposed development. As such, the EIA will address the following potential townscape and visual impacts and likely effects:

- Temporary change in townscape character and visual intrusion during demolition and construction works;
- Changes to the character, context and quality of the application site and the local townscape;
- Changes to selected key views; and

- Changes to the settings of heritage assets including any relevant listed buildings, conservation areas and locally listed buildings.

6.4.2 Approach and Methodology

Townscape

An assessment will be made of the application site and surrounding townscape areas in their existing state. This will be based on study of the historic development of the area with reference to relevant publications, and study of the present-day condition of the area based on site visits, study of maps and aerial photographs, and relevant publications.

This analysis will inform the division of the study area into townscape areas, i.e. geographical areas which have readily identifiable characteristics in common. The impact of the proposed development on these townscape areas will then be assessed, based on conclusions drawn from the views analysis.

Views

The application site is not located within any strategic viewing corridors identified within the London View Management Framework (LVMF). The potential impact on local and wider views will be a consideration given the nature of the proposed development.

The study area for the visual assessment is centred on the application site and limited to locations from which the application site can be seen, or from which new buildings on the application site have the potential to result in a significant visual impact at the height proposed. Professional judgement has been used to gauge the likely extent of significant visibility of the proposed development, on the basis of site visits and prior knowledge of the urban form in the wider area around the application site. It is not considered appropriate to produce a Zone of Visual Influence (ZVI) plan in a built up urban context such as that surrounding the application site.

Within the study area four principal types of viewing location have been identified:

- Views that have been identified as significant, by the RBG or others, e.g. in relevant planning policy and guidance documents (including the London Plan LVMF) and conservation area appraisals;
- Other locations or views of particular sensitivity, including those viewpoints in which the Proposed Development may significantly affect the settings of World Heritage Sites, listed buildings and conservation areas;
- Representative townscape locations from which the proposed development will be visible; and
- Locations where there is extensive open space between the viewer and the proposed development so that it will be prominent rather than obscured by foreground buildings.

The set of viewpoints is chosen so that it covers:

- The range of points of the compass from which the proposed development will be visible;
- A range of distances from the application site; and
- Different types of townscape area.

Possible locations in these categories within the study area are identified based on an examination of maps and aerial photographs; maps of conservation areas; and maps and lists of listed buildings. The study area and the possible locations are then visited to establish candidate viewpoints.

A list and map of proposed views is provided within Appendix 2 for consideration by the RBG.

Methodology for assessment

The methodology for the townscape and visual impact assessment is based on the principles set out in the third (2013) edition of 'Guidelines for Landscape and Visual Impact Assessment' (GLVIA), produced by the Landscape Institute with the Institute of Environmental Management and Assessment (IEMA). Reference will also be made to key national, regional and local guidance and policies. A brief overview of the methodology follows; a more detailed explanation will be provided as part of the townscape and visual impact assessment.

Assessment of the effect of any proposed development on a receptor (an area of townscape, a heritage asset, or a view) is made on the basis of professional judgement which takes into account relevant planning policies and guidance.

The sensitivity of the receptor as existing will be assessed as high, medium or low, depending on the importance, value and quality of the receptor, and nature and expectation of the viewer. The assessment will takes into account the setting of any Grade I, Grade II* or Grade II Listed Buildings, the setting of any Grade II* or Grade II Listed Buildings or conservation areas, and other areas, and the amenity value of the viewing location and area in which it is located. Professional judgement will be used to assess of the sensitivity of the receptor under consideration, and will be moderated by taking into account its overall quality.

The magnitude of the change resulting from the proposed development will be assessed as major, moderate, minor or negligible according to the change to the townscape, view or heritage asset's townscape setting.

These two measures are combined to provide a measure of the significance – major, moderate or minor - of the effect on the receptor which will result from the Proposed Development, the most significant effects being effects of major magnitude on receptors of high sensitivity.

Effects are assessed as beneficial, adverse, or neutral. The assessment as beneficial or adverse is a 'net equation', since with regard to the receptor that is being assessed, there may be both positive and negative effects as a result of the development.

For each of the identified views in the assessment to be produced, there will be images of the view as existing and as proposed. Where appropriate, the view as proposed will be shown as a fully rendered image, showing the proposed new building and landscape treatment in a realistic manner. In other cases, the proposed building will be shown diagrammatically, in a 'wireline' outline. The map and list of views include information on which of the views are proposed as render and which as wireline images, for agreement with the RBG.

Where other developments in the wider area (which are proposed or have been granted consent) would be visible to a significant extent in the view, a further image showing these schemes together with the proposed development will be produced.

For each of the identified views, a description of the view as existing will be given, identifying its visual quality, sensitivity to change and reason for that sensitivity. A description of the view as proposed will then be given provided with an assessment, based on the method set out above, of the significance of the effect that the proposed development will have on the view. A further assessment will consider cumulative effects, if any, for each view. The approach to cumulative assessment will be to focus on the additional effects of the proposed development further to the cumulative baseline.

6.5 Archaeology

An archaeology technical assessment will be presented in ES Volume 1 and will consider the potential impacts of the proposed development on potential below ground heritage assets (archaeological remains).

6.5.1 Site Information/Potential Impacts

The application site currently comprises industrial warehouse units.

The application site is located within an Area of High Archaeological Potential (AHAP), designated within the RBG's Local Plan.

Potential significant impacts to archaeology are likely to be confined to demolition and construction works, particularly where intrusive works for foundations and a basement are proposed. Likely effects will therefore focus upon damage to, or destruction of, potential archaeological remains.

6.5.2 Approach and Methodology

The assessment would conform entirely to standards set by the Institute for Archaeologists[9].

A desk-based assessment (Historic Environmental Assessment (HEA)) for the application site will be undertaken, to assess the likely presence and significance of any buried heritage assets (archaeological remains) which may be affected by the proposed development of the application site, and will form a technical appendix to the ES.

Consideration would be given to the potential significant impacts of the proposed development at the application site on potential buried heritage assets, which will reported upon within an ES Chapter. The assessment would deal solely with the archaeological implications of the proposed development and would not cover possible built heritage issues, except where buried parts of historic fabric are likely to be affected. Above ground assets (i.e. designated and undesignated historic structures and CA) in the vicinity of the application site that are relevant to the archaeological interpretation would be discussed.

The assessment would not consider issues in relation to the setting of above ground assets (e.g. visible changes to historic character and views) which would be covered in the townscape and visual assessment.

The assessment will:

- quantify predicted buried heritage assets that may be affected by the proposed development;
- assess any previous impacts which may have affected asset survival;
- provide an evaluation of buried heritage asset significance based on statutory designation, or in the absence of designation, professional judgement against values set out in English Heritage Conservation Principles[10];
- assess potential development impacts arising from the proposals during the construction stage in the absence of mitigation;
- consider mitigation that would offset or eliminate adverse effects; and
- quantify any residual effects (those that might remain after mitigation).

The operational (completed development) stage would not involve any additional ground disturbance and there would be no archaeological impact. Therefore an assessment will not be undertaken of operational effects on buried assets.

The assessment will use defined criteria to assess the significance of known or potential archaeological assets, the magnitude of change (impact) of the proposed development upon the significance of those assets (construction stage), and the resultant significance of residual environmental effects.

[9] Institute for Archaeologists, October 2012. Standards and guidance for archaeological advice: By-laws, standards and policy statements of the Institute for Archaeologists, standard and guidance: historic environment desk-based assessments. Reading. University of Reading.

[10] English Heritage, 2008. Conservation Principles Policies and Guidance. EH. UK.

Consideration will also be given to cumulative impacts and effects.

6.6 Transport and Accessibility

A transport and accessibility technical assessment will be presented in ES Volume 1. The assessment will consider the implications of the proposed development on the capacity of the local road network, public transport, cycle and pedestrian facilities; as well as the potential impacts on pedestrians.

6.6.1 Site Information/Potential Impacts

The application site is currently well located in respect of public transport and is in a good to moderate accessible location with a PTAL rating of 4 to 3. Charlton mainline rail ration is located approximately 350 m south of the application site. Five bus routes are within easy access of the application site with bus stops on Bugsby's Way, Anchor and Hope Lane or Woolwich Road. There are also suitable pedestrian and cycle routes in the vicinity of the application site to important destinations including National Cycle Network Route 1 which directly connects with the application site and runs along the Thames Path, connecting to other local and national cycle routes.

Furthermore, the application site is located to the east of Anchor and Hope Lane which connects with Charlton Church Lane and Woolwich Road (A206) to the south. To the west, Bugsby's Way links the application site with the Greenwich peninsula and the Blackwall Tunnel (A102).

The application site also sits within the Charlton Riverside masterplan area and is subject to the Supplementary Planning Document (April 2012) which is currently undergoing a review by the RBG.

The following potential significant transportation and access related impacts could arise as a result of the proposed development at the application site:

- Temporary disruption to pedestrians, cyclists and road vehicle users during the demolition and construction works;
- Temporary disruption to the servicing and access for nearby properties during the demolition and construction works;
- Temporary generation of heavy goods vehicles (HGVs) during the demolition and construction works;
- Changes to traffic flows and the capacities of the local highway network upon completion and operation of the proposed development;
- Impacts upon users of Bugsby's Way, Anchor and Hope Lane, Charlton Church Lane and Woolwich Road;
- Changes to pedestrian and cycle facilities, including safety issues;
- Changes to public transport capacity and accessibility;
- Changes to parking provisions;
- Changes to long-term access and servicing arrangements for the proposed development and effects on nearby properties; and
- Changes to pedestrian amenity (including fear and intimidation; severance; delay).

Secondary impacts to residential receptors within the study area will be covered in the air quality and noise and vibration assessments.

6.6.2 Approach and Methodology

The planning application will be accompanied by a comprehensive Transport Assessment (TA) prepared in accordance with TfL Guidance[11]. The TA will include an outline Travel Plan; Delivery and Servicing Plan; and set out the key aspects for the Construction Management Plan (CMP). An analysis of construction vehicle movements during the demolition and construction phases will be incorporated within the ES. A separate Operational Waste Management Strategy will be included within the planning documents.

The scope of the TA, as well as any traffic/transport surveys and detailed analysis requirements, will be agreed with the RBG and TfL. The final TA will be presented as a Technical Appendix in ES Volume 3.

The TA and EIA will consider the potential significant impacts of the proposed development on:

- The capacity of the surrounding and wider highway network and associated driver delay;
- The capacity of public transport, pedestrian and cycle networks;
- Available car, motorcycle and cycle parking;
- Servicing and refuse collection;
- Access arrangements; and
- Accidents and safety.

In addition to driver delay, consideration will be given to potential impacts on pedestrian amenity, as required by guidance of the Institute of Environmental Management and Assessment (IEMA) [12]. In this regard the following will be assessed:

- Pedestrian Severance;
- Pedestrian Delay;
- Pedestrian Amenity; and
- Pedestrian Fear and Intimidation.

The following assessment scenarios will be considered:

- Existing Baseline;
- Future Baseline: Year of Completion of the Proposed Development;
- Future Baseline + Proposed Development; and
- Cumulative Scenario: Future Baseline + Proposed Development + Cumulative Developments.

Consideration will be given to cumulative impacts and effects.

As part of the TA, traffic data will be prepared for the air quality and noise and vibration assessments (refer to Sections 6.7 and 6.8).

6.7 Air Quality

An air quality technical assessment will be presented in ES Volume 1. The air quality assessment will consider the implications of current and future ambient air quality at the application site for the proposed residential use, as well as the implications of emissions from the proposed development on local air quality. Potential new sources of air pollution arising from the proposed development during its demolition and construction stage, and once completed (i.e. traffic flows and CHP plant) will therefore be considered.

[11] Transport for London, 2007. Guidance on Transport Assessments.
[12] Institute for Environmental Assessment 1994. Guidelines for the Environmental Assessment of Road Traffic (The IEA is now known as the Institute of Environmental Management and Assessment (IEMA)).

6.7.1 Site Information/Potential Impacts

As levels of NO_2 and PM_{10} across much of the RBG are not meeting the National Air Quality Strategy objectives, the entire borough has been declared an AQMA. Consequently, the RBG has produced an Air Quality Action Plan which sets out the policies and measures to be implemented to improve air quality in the Borough. These focus on reducing NO_2 and PM_{10} emissions, primarily through measures to reduce traffic flows and vehicle emissions.

The main source of air pollutants close to the site are road traffic using the A206 to the south of the application site. Whist there are industrial uses adjacent to the application site, significant emissions from industrial sites are controlled under the Environmental Permitting Regulations 2007 and thus it is considered unlikely that these would have a significant impact on the application site. We note the nearby Part B authorised process at Stone Foundries for Ferrous and Non-Ferrous Metal Processing. Consultation with the local authority will request details of complaints data covering air quality (including dust and odour). A qualitative assessment of likely nuisance on new receptors from this and similar emissions will be made.

A review of recent monitoring undertaken by the RBG indicates that there is sufficient local monitoring data to characterise the existing baseline at the application site and to verify air quality modelling. There are existing monitoring sites on Bugsby Way and on the A206 at Woolwich (Burrage Grove).

Potential significant impacts and likely effects on local air quality could be as follows:

- Temporary changes to ambient air quality during the demolition and construction works resulting from demolition and construction dust emissions and emissions from construction traffic;
- Emissions from traffic generated by the proposed development on local air quality, including residents car parking and servicing traffic;
- Existing and future local air quality effects on future site occupants, specifically the newly introduced residents; and
- Emissions from the proposed development's CHP plant use and the servicing strategy for heating, ventilation and extraction (including the commercial elements).

6.7.2 Approach and Methodology

The assessment will be undertaken in accordance with the guidance provided by the Institute of Air Quality Management (IAQM) and Environmental Protection UK (EPUK)[13] for the completion of air quality assessments for planning applications. The air quality assessment would comprise the following:

- Consultation with the RBG's Environmental Health Officer to agree the scope of the assessment;
- Confirmation of potentially sensitive existing and future (e.g. within the proposed development) receptor locations which could be affected by potential changes in air quality;
- Review of baseline conditions, with particular regard to RBG's air quality review documents and monitoring data;
- A qualitative assessment of air quality effects from demolition and construction works;
- Use of the appropriate modelling to assess the likely air pollutant effects as a result of the proposed development to include traffic and CHP sources;
- Comparison of the predicted pollutant concentration with current National Air Quality Strategy Objective;

[13] Institute of Air Quality Management (IAQM) and Environmental Protection UK, 2015, Land-Use Planning & Development Control: Planning for Air Quality.

- Completion of an Air Quality Neutral Assessment to determine whether emissions from the proposed development would meet the emission benchmarks set out in the Mayor of London's Supplementary Planning Guidance[14]; and
- Assessment of the significance of air quality effects using the EPUK/IAQM significance criteria.

During the course of the design evolution process, proposals for controlling dust and other emissions during the demolition and construction activities, as well as appropriate ventilation strategies will be made by reference to best practice guidance.

The following assessment scenarios will be considered:

- Existing baseline;
- Future baseline: Year of completion of the proposed development;
- Future baseline + proposed development; and
- Cumulative Scenario: Future baseline + proposed development + cumulative developments.

All technical data used in the air quality assessment will be presented in ES Volume 3.

6.8 Noise and Vibration

A noise and vibration technical assessment will be presented in ES Volume 1. The noise and vibration assessment will consider the implications of current and future sources of noise on the proposed residential use.

For the purpose of this assessment noise is defined as unwanted or undesirable sound derived from sources such as road traffic, industry or demolition and construction works that interfere with normal activities such as conversation, sleeping or recreation. Related to noise is vibration, which results from the transmission of low frequency energy, typically through the medium of ground or buildings. It results in small movements of the transmitting medium, which can cause discomfort if the movements are large enough or be re-radiated as noise.

6.8.1 Site Information/Potential Impacts

Due to the application site's urban location, it is affected by road traffic noise and noise from operational activities associated with surrounding industrial units.

A detailed environmental noise survey, will be undertaken to determine the existing environmental noise conditions. This will comprise an unattended noise logging at a location representative of the nearest noise sensitive premises (covering over a weekday and the weekend) and attended noise measurements at a number of strategic locations around the application site. The noise survey requirements will be agreed within the RBG prior to commencing. The results of the surveys will be used to characterise the baseline conditions and to inform the emerging development proposals.

In terms of vibration, due to the lack of vibration sources (e.g. railway or underground lines) within a close proximity to the application site, it is proposed that an assessment of the potential effects of vibration on residential amenity is scoped out of the assessment.

In addition to the above, the proposed development has the potential to create sources of ambient noise and vibration during the course of the demolition and construction activities and to a lesser extent on completion and operation of the proposed development. With regard to the latter, building servicing, the operation of building plant and the operation of any potential commercial uses would have the potential to generate noise.

[14] Greater London Authority, 2014. Sustainable Design and Construction SPG.

Potential significant noise and vibration impacts and likely effects can be summarised as follows:

- Demolition and construction plant noise and/or vibration effects to buildings and building occupants in the vicinity to the proposed site;
- Demolition and construction traffic noise and vibration effects to existing and future residents in the vicinity to the proposed site;
- Ambient noise effects on future residents of the proposed development;
- Noise effects on local residents as a result of traffic generated by the proposed development;
- Noise generated from the use of active ground floor uses and servicing areas on the existing surrounding and proposed residential uses; and
- Effects of building services plant associated with the operation of the Proposed Development upon both proposed and existing noise sensitive receptors and the routine control of noise from such plant on existing and future residents in the area.

6.8.2 Approach and Methodology

The noise and vibration assessment will comprise the following:

- Consultation with the RBG Environmental Health Officer to agree the survey and assessment methodology;
- Confirmation of potentially sensitive noise and vibration receptors, both existing and proposed;
- Assessment of typical noise sources and indicative vibration levels during all stages of the demolition and construction works by reference to:
  - British Standard (BS) 5228'Noise and Vibration Control on Construction and Open Sites'[15];
  - BS7385 'Evaluation and Measurement for Vibration in Buildings'[16]; and
  - BS6472:1 'Guide to evaluation of human exposure to vibration in buildings Part 1: Vibration sources other than blasting'[17];
- Assessment of noise associated with road traffic by reference to 'Calculation of Road Traffic Noise' (CRTN)[18]. Further advice is also given in the:
  - 'Design Manual for Roads and Bridges' (DMRB)[19] for road traffic noise assessment;
  - Guidance on impact assessment of traffic noise within the Institute of Environmental Management and Assessment (IEMA) Guidance Note No. 1 'Guidelines for the Environmental Assessment of Road Traffic'[20].
- Assessment of noise generated by road traffic will use traffic data provided by the Applicants' transport consultants;
- Assessment of the suitability of the application site for residential use with reference to BS8233 'Sound Insulation and Noise Reduction for Buildings - Code of Practice'[21], and the World Health Organisation (WHO) 'Guidelines for Community Noise'. Having established noise levels adjacent to the proposed building facades, an assessment of acoustic performance will be undertaken and the conclusions provided in the form of minimum acoustic performance for various façade elements to enable suitable internal noise levels to be achieved;

[15] British Standards Institution, 2014. British Standard BS5228-2:2009+A1:2014 'Noise and Vibration Control on Construction and Open Sites'. BSI.
[16] British Standards Institution, 1993. British Standard BS7385-2 'Evaluation and Measurement for Vibration in Buildings'. BSI.
[17] British Standards Institution, 2008. British Standard BS6472:1 'Guide to evaluation of human exposure to vibration in buildings Part 1: Vibration sources other than blasting'. BSI.
[18] TfL, 1988. 'Calculation of Road Traffic Noise'
[19] Highways Agency, 2006. 'Design Manual for Roads and Bridges'. HMSO. London.
[20] Institute for Environmental Assessment, 1994. 'Guidelines for the Environmental Assessment of Road Traffic' (The IEA is now known as the Institute of Environmental Management and Assessment (IEMA)).
[21] British Standards Institution, 2014. British Standard BS8233 'Sound Insulation and Noise Reduction for Buildings - Code of Practice'. BSI.

- Assessment of building services plant noise by reference to BS4142 'Methods for rating and assessing industrial and commercial sound'[22], which provides a method of measuring background noise levels and assessing the likelihood of complaint regarding external noise levels; and
- Assessment of noise likely to be generated by potential commercial uses, as well as servicing areas.

During the course of the design evolution process, proposals for controlling noise and vibration during the demolition and construction activities, as well as appropriate ventilation and glazing specifications will be made by reference to best practice guidance such as BS5228-2 + A1:2014 'Noise and Vibration Control on Construction and Open Sites[23] and BS8233 'Sound Insulation and Noise Reduction for Buildings - Code of Practice'[24] and the WHO 'Guidelines for Community Noise'[25].

The following assessment scenarios will be considered:

- Existing baseline;
- Future baseline: Year of completion of the proposed development;
- Future baseline + proposed development; and
- Cumulative scenario: Future baseline + proposed development + cumulative developments.

Consideration will be given to cumulative impacts and effects.

All relevant technical data will be presented in ES Volume 3.

6.9 Daylight, Sunlight, Overshadowing and Solar Glare

A daylight, sunlight, overshadowing and solar glare technical assessment will be presented in ES Volume 1. The assessment will consider the potential impact of the proposed development on daylight, sunlight, overshadowing at existing, neighbouring residential properties; proposed residential units within the proposed development itself; as well as existing and proposed open space and public amenity areas (e.g. Atlas and Derrick Gardens). Consideration will also be given to the potential for solar glare and dazzle along key transport routes, due to the potential for reflection from the facades of the proposed development's new buildings; however this will be informed by the materiality of the proposed development, which is not currently known.

6.9.1 Site Information/Potential Impacts

The application site largely comprises warehouses, light industrial sheds and areas of hardstanding.

Owing to the change in the application site massing that would be brought about by the proposed development, the following potential significant impacts and likely effects could arise:

- Changes to the amount, duration and quality of daylight and sunlight available to neighbouring residential building occupiers surrounding the application site (namely to the west);
- Changes to the incidence and duration of overshadowing experienced by private amenity space servicing neighbouring buildings surrounding the application site; and
- Changes to the amount of transient and permanent overshadowing of existing public spaces.

In addition:

[22] British Standards Institution, 2014. British Standard BS4142 Methods for rating and assessing industrial and commercial sound. BSI.

[23] British Standards Institution, 2009.British Standard BS 5228: 2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. BSI

[24] British Standards Institution, 2014. British Standard BS8233: Guidance on sound insulation and noise reduction for buildings. BSI

[25] World Health Organisation, 1999. Guidelines for Community Noise.

- The proposed residential units of the proposed development would need to achieve acceptable levels of both daylight and sunlight in line with prevailing guidance;
- The provision of new amenity and open spaces within the proposed development would necessitate adequate levels of natural light for aesthetic, comfort and safety reasons; and
- Solar glare resulting from the façade treatments of the proposed development may affect key transport routes surrounding the application site. For vertical facades the problem could occur when the sun is low in the sky, but some types of sloping glazed facades can, under certain circumstances, reflect sunlight into the eyes of drivers of vehicles in proximity to the application site.

An assessment of the internal daylight and sunlight levels predicted within the proposed development will be provided as a standalone document separate to the EIA. The potential for daylight within the proposed units is dependent on the design and therefore is more suited to accompany other reports on the design of the proposed development rather than the environmental assessment. In addition, it is not possible to assign significance criteria to the analysis for the potential for daylight and sunlight within the proposed scheme as there is no baseline condition to provide a comparison and thus indicate whether the proposed development would have a beneficial or adverse effect. The BRE and BS criteria for internal daylight are also based on target values (e.g. 1 % ADF for bedrooms, 1.5 % ADF for living rooms and 2 % ADF for kitchens) and therefore an assessment of internal daylight would consider whether the design will meet these target values.

6.9.2 Approach and Methodology

The daylight, sunlight, overshadowing and solar glare assessment will be undertaken in respect of the evolving design. The results of these studies will be fed into the design of the massing and configuration of the proposed development so as to avoid and minimise potential adverse effects. Once the proposed development design has been fixed, further testing will be undertaken to technically assess the final scheme submitted for planning. The findings of the assessment will be summarised in the ES.

The technical assessment will be undertaken by reference to Daylight and Sunlight: A Guide to Good Practice, Second Edition 2011[26], and other relevant guidance.

The assessment will focus on the proposed development's potential impacts and likely effects on existing neighbouring domestic buildings where the occupants would have a reasonable expectation of daylight and sunlight. Commercial properties that have continuous artificial lighting, such as offices and retail stores, do not have an expectation for daylight or sunlight and will therefore not be assessed.

In addition the assessment will consider transient and permanent overshadowing of existing and new amenity and open spaces.

The following assessment scenarios will be considered:

- Existing baseline;
- Proposed Development with Existing Surrounding Buildings; and
- Proposed Development with Existing and Surrounding Buildings, plus relevant cumulative schemes.

Solar glare will be considered using computer simulations by reference to the suggestions in the BRE guidance. Sensitive viewpoints around the proposed development will be selected. These viewpoints will represent locations where reflected solar glare could potentially cause adverse impacts to those travelling towards the proposed development. The occurrence and duration

[26] British Research Establishment (BRE), 2011. 'Site Layout Planning for Daylight and Sunlight: A Guide to Good Practice, Second Edition 2011', BRE Trust.

throughout the year as well as the location of the occurrence in respect of a driver's line of sight will be considered. Where appropriate mitigation measures will be considered and incorporated in to the design to reduce any adverse effects.

6.10 Wind Microclimate

A wind microclimate technical assessment will be presented in ES Volume 1 and will consider the potential impacts of the proposed development on localised wind microclimate conditions.

6.10.1 Site Information/Potential Impacts

The application site comprises low-lying industrial warehouse units.

Within London, the prevailing wind direction is from the south-west with secondary winds from the north-east.

Changes to building massing will have the potential to influence the speed and direction of the wind as it moves around new buildings within and around a site.

The prevailing wind direction can affect the relative 'comfort' for pedestrians utilising the application site. This is of particular importance to ensure the comfort of future residents utilising balcony, terrace and communal areas and to create ground level pedestrian environments (amenity spaces, pedestrian routes and building entrances) of the highest quality.

The massing of the proposed development relative to the existing uses on-site and the complex layout of the neighbouring buildings means that the development proposals could give rise to significant wind affects.

6.10.2 Approach and Methodology

It is proposed to test the proposed development in a wind tunnel to provide a robust assessment for existing and proposed conditions in and around the application site. The wind tunnel tests would allow local wind climate to be quantified and classified in accordance with the widely accepted industry standard Lawson Comfort and Safety Criteria[27].

The following assessment scenarios will be considered:

- Existing baseline;
- Future baseline: Proposed development with existing surrounding buildings; and
- Cumulative scenario: Proposed development with future surrounding buildings.

The model will be presented void of any landscaping to ensure the model does not provide for unrealistic shelter during winter.

These tests would establish the suitability of the wind microclimate in relation to the intended pedestrian usage of the application site and surrounds. The assessment of the wind environment of private balconies would be based on the threshold wind speeds defined by the Beaufort Scale, adapted to land use, in a manner commensurate with the Lawson Criteria described above. It is noted that the Lawson criteria was proposed and developed (and represent the industry standard) for publically accessible spaces, and do not represent an industry standard for balconies.

The conclusions of the wind assessment will be summarised within the ES Chapter with technical details pertaining to the assessment presented in ES Volume 3.

6.11 Cumulative Effects

The EIA Regulations require that, in assessing the effects of a particular development proposal, consideration is also given to the cumulative effects which might arise from the proposal in

[27] Lawson, 2001. Building Aerodynamics. Imperial College Press.

conjunction with other development proposals in the vicinity. The following two types of Cumulative Effects will be considered within ES Volume 1:

- Intra-Project effects of different types of impact from the proposed development on particular receptors at or surrounding the application site. Potential impact interactions include the combined effects of noise, dust and visual impacts during from demolition and construction of the proposed development on a particular sensitive receptor; and
- Inter-Project effects which are combined effects generated from the proposal with other planned developments. These other developments may generate their own individually insignificant effects but when considered together could amount to a significant cumulative effect, for example, combined townscape and visual impacts from two or more (proposed) developments.

Cumulative impacts will typically be assessed using professional judgment and this approach is outlined below. It is a relatively straightforward process to identify intra-project effects or 'impact interactions'. However, the assessment of other planned developments in combination with the proposed development is more complex.

6.11.1 Intra-Project Impact Interactions

Impact Interactions from the proposed development itself on particular receptors at or surrounding the application site will be considered during the demolition and construction works, and also once the proposed development is completed. It is possible however, that depending on the predicted individual 'completed developments' impacts, only the demolition and construction work impact interactions will actually be considered as often they generate the greatest likelihood of impact interactions occurring and hence significant effects. Indeed, demolition and construction impacts are usually more adverse (albeit on a temporary basis) than impacts created from a completed development.

Dependent on the relevant sensitive receptors, the assessment will focus either on key individual receptors or on groups considered to be most sensitive to potential impact interactions. The criteria for identifying those receptors which are considered to be potentially sensitive would include existing land uses, proximity to the demolition and construction works and the application site, and likely duration of exposure to impacts. It should be noted that only significant residual effects will be considered within this assessment. The results will be presented within the ES in a discrete Cumulative Assessment chapter.

With regards the potential for cumulative effects to occur, it is anticipated that standard mitigation measures as detailed in a site-specific CEMP (such as dust suppression measures, use of quiet plant, restrictions on working hours) can be applied to prevent temporary unacceptable effects from significant 'impact interactions' occurring on-site.

6.11.2 Inter-Project Cumulative Interactions

To ensure that Inter-Project (in-combination) cumulative impacts and effects are assessed as comprehensively and realistically as possible, the EIA would only consider other 'committed schemes'. These committed schemes are:

- consented and subject to a high degree of certainty of being delivered (a resolution to grant planning consent as a minimum, but ideally with a signed legal agreements) or at early stage of construction;
- located within 1 km of the redline boundary of the application site; spatially linked to the application site by means of the local road network; or visible in views to and from the application site; and
- 10,000 m^2 GEA in floor area or would give rise to >150 residential units.

For the proposed development, the identified committed schemes are described in Table 6.1. Scheme 1-8 and 10 meet the criteria outlined above whilst Scheme 9 has been included due to being sufficiently close to the criteria. It is noted that all of the ten schemes identified have been consented by the RBG. The location of the identified schemes are shown in the Figure 6.1:

Table 6.1: Consented Schemes

Number	Application	Development Description
1	Ref: 12/0022/O Greenwich Millennium Village (Phases 3, 4 & 5), Peartree Way, Greenwich	A mixed use development comprising: up to a total of 1,746 Class C3 residential units; up to a total of 1,190 m^2 (GEA) flexible Class A1 (shops) and/or A2 (Financial and professional services) and/or A3 (restaurants and cafes) and/or A4 (drinking establishments); up to a total of 4,462 m^2 (GEA) business space for B1(a) (offices) and/or B1(b) (research and development) and/or B1(c) (light industry); up to 500 m^2 (GEA) Class D1 for a children's nursery; up to a total of 750 m^2 (GEA) Class D2 for community space and a management facility.
2	Ref: 13/3281/R Parcel 2, sub-phase 1, Greenwich Millennium Village Phases 3, 4 & 5	Grant reserve matters approval (appearance, layout, scale and landscaping), for Parcel 2, Sub-Phase 1 of Greenwich Millennium Village Phases 3, 4 & 5 pursuant to Condition 2 of Outline planning permission dated 30/03/2012 (Ref: 12/0022/O) for erection of 83 residential dwellings including associated infrastructure and car parking.
3	Ref: 14/0127/O Morris Walk Estate (North), north of Pett Street SE18	Outline planning permission for the redevelopment of Morris Walk (north) Estate to provide up to 304 residential dwellings with associated access, parking, and private and public open spaces.
4	Ref: 14/0126/O Morris Walk Estate, south of Maryon Road SE7	Outline planning permission for the redevelopment of Morris Walk (south) Estate to provide up to 462 residential dwellings with associated access, parking, and private and public open spaces.
5	Ref: 13/3285/O Sainsbury's and former comet stores, 55 & 57 Bugsby's Way, Greenwich SE10	Outline planning permission (all matters reserved except access and layout) for the redevelopment of the site that is located within the Greenwich Millennium Retail Park (new Ikea store).
6	Ref: 11/1261/F Sainsburys, 50 Lombard Wall, Anchor and Hope Lane, Charlton	Demolition of existing buildings on site and redevelopment to provide 26,357 m^2 of distribution (use class B8) warehouse, associated means of access, ancillary offices a maintenance building, gatehouse, car parking, landscaping and associated works.
7	Ref: 12/0835/F	Demolition of all existing buildings on site and construction of mixed use development comprising Class A1 (13,189

Number	Application	Development Description
	Land north of Woolwich Road and west of Gallions Road	sqm & 7,698 m^2), flexible class A1/A3 (473 m^2), Class A3 (150 m^2) and Class D2 (473 m^2) units, internet distribution facility, associated servicing, car parking, landscaping and access arrangements.
8	Ref: 12/0029/F Land r/o 40 Victoria Way, Charlton, SE7	Demolition of existing warehouse building (9,625 m^2) and construction of part 2, part 3, part 4, part 5 and part 6 storey buildings comprising 20 houses (17x3-beds and 3x4-beds), 189 flats (81x1-beds; 80x2-beds and 28x3-beds), 3 live/work units (2-beds), car parking for 182 vehicles, 234 cycle spaces and associated access and landscaping.
9	Ref: 13/2016/F Former Matalan Site, 30 Bugsby Way, Charlton, SE7	Demolition of existing retail unit (the former Matalan) and construction of a two unit retail terrace (to accommodate a Next furniture store and Primark clothes store) with associated car parking.
10	Ref: 14/0117/O Maryon Road and Grove Estate	Outline planning permission for the redevelopment of the Maryon Road and Grove Estate comprising of the construction of up to 165 residential units, associated open space, landscaping, car parking and infrastructure.

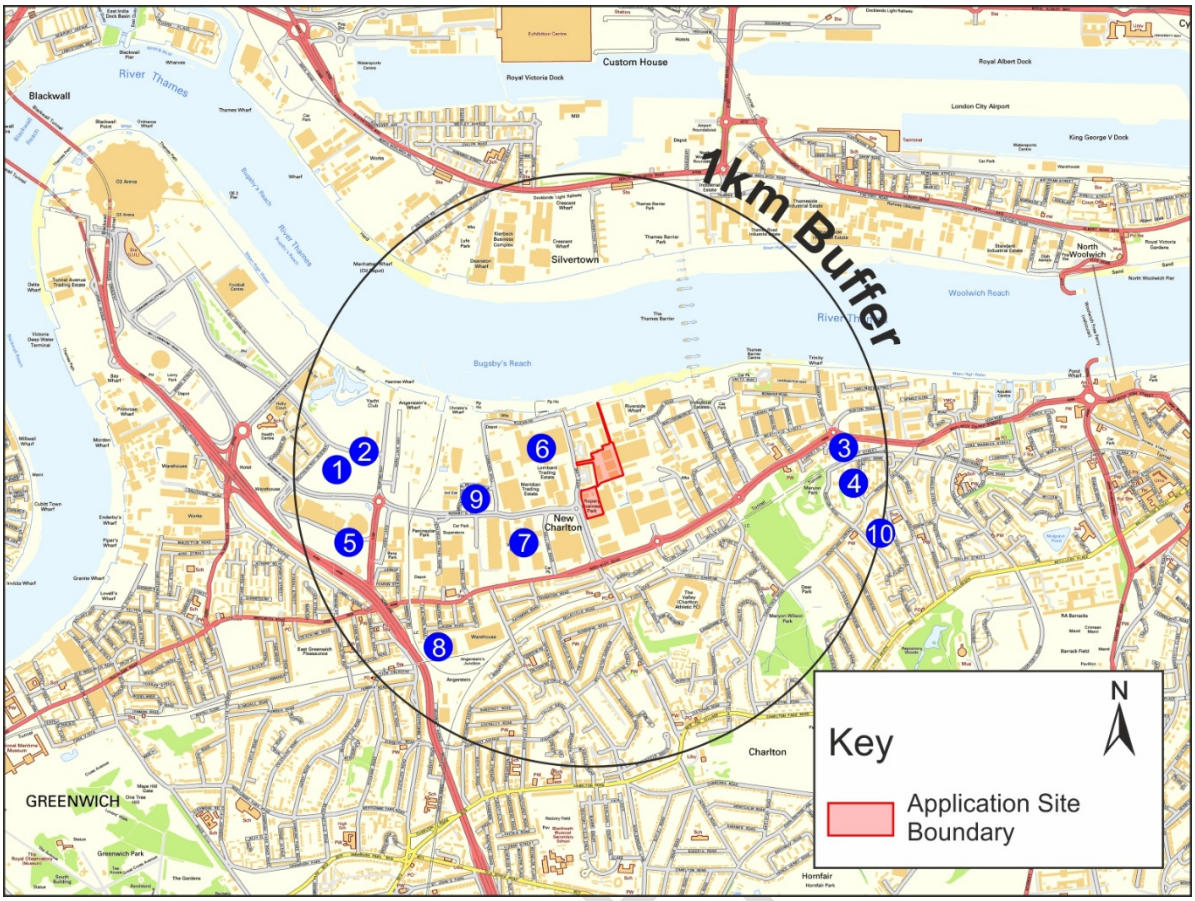

Figure 6.1: Consented Scheme Location Plan

Further information on the schemes would be drawn from the RBG's planning application register at the time of undertaking the assessments. Where detailed information on schemes are not available to enable quantitative assessment, qualitative assessments would be undertaken.

Cumulative effects will be addressed within each of the individual technical assessment chapters, in ES Volume 1.

7. NON-SIGNIFICANT ISSUES

During the EIA Scoping Process, consideration has been given to ensuring that the EIA is proportionate and therefore only focuses on the likely significant effects of the proposed development. Accordingly, the Scoping Process has identified a number of potential environmental issues that are unlikely to generate significant effects on the environment and therefore, are proposed to be scoped out of the ES. These issues are discussed in this section.

7.1 Light Spillage

Light spill is defined as any light emitted from artificial sources into spaces where this light would be unwanted. An example of this would include egressing light from highly glazed commercial buildings or a car parking's flood lights into residential accommodation, where this would cause inconvenience to their occupants.

The ILE Guidance defines light pollution as three different impacts, these being light spillage into residential windows; light spillage into areas of natural significance; and upward light spillage into the night sky.

Light spillage (specifically light trespass) typically occur when commercial properties are located within close proximity to residential dwellings such that point source lighting can intrude into bedrooms windows and cause disturbance to amenity.

The proposed development is a residential led scheme with a component of non-residential commercial uses on the ground floor. Given the typically solid residential façade treatment, and the absence of exterior façade lighting, as well as the location of commercial space at lower levels than residential uses, significant light spill is unlikely to arise from the proposed development.

The application site is located within an area already characterised by high levels of illumination, especially due to the close proximity to the A206 and surrounding industrial uses. It is not anticipated that the Proposed Development would exceed the ambient sky glow for this locality.

Notwithstanding this, when preparing the scheme's Lighting Strategy in due course (expected to form a planning condition), consideration would be given to the use of shading devices; the appropriate specification of street and amenity lighting with downward and directional lighting being specified to avoid light spillage onto nearby residential properties; and the integration of lighting control attachments (such as cowels and louvers) to maximise the effectiveness of lighting on-site whilst avoiding adverse impacts.

Accordingly, it is considered that the proposed development would not give rise to significant environmental effects in relation to Light Spillage. A formal Light Spill Assessment is therefore proposed to be scoped out of the ES.

7.2 Waste

The application site is currently occupied by industrial warehouse units. Accordingly there are currently waste streams arising from the application site.

During a typical demolition and construction stage, the greatest potential for waste arisings would be from the demolition of existing buildings and the excavation of the basement cavity. As is typical of similar redevelopments, waste management would be undertaken in accordance with a Construction Site Waste Management Plan (SWMP) to ensure the sustainable management of construction waste, minimisation of waste arisings and maximisation of waste re-use and recycling.

The Applicant's contractors would be encouraged to maximise opportunities for waste recycling and re-use both on and off-site where practically possible. In the event that residual materials

require off-site disposal, the Applicant's contractors would ensure the appropriate categorisation of waste in accordance with current regulatory requirements.

Once completed operational waste would primarily comprise household waste streams, with smaller quantities of commercial waste streams from non-residential uses. All waste facilities within the proposed development would be designed to accord with the RBG Standards and would provide for waste recycling facilities. In addition, the proposed development's operational wastes would be managed by an on-site facilities management team, in accordance with an operational waste management plant.

The above design and operational measures would be outlined within an Operational Waste Management Strategy that will accompany the planning application.

The implementation of this Strategy would be secured by means of an appropriately worded planning condition. Based on the proposed development's land uses and waste streams, plus the proactive commitment to waste reduction, it is considered that waste generation would not be a significant issue in itself, requiring assessment within the EIA. It is not anticipated that there would be any environmental effects from the future waste generation streams by the proposed land uses, save for the environmental effects of the collection of waste and secondary effects of emissions and traffic noise associated with waste vehicles. The movements of waste vehicles would be factored into the proposed development's trip generation figures and assessed in Transport and Accessibility, Air Quality and Noise and Vibration chapters of the ES.

Accordingly, it is considered that the proposed development would not give rise to significant environmental effects in relation to waste. A formal Waste Assessment is therefore proposed to be scoped out of the ES.

7.3 Telecommunication Interference

New, tall buildings and structures have the potential to impact on radio, television and other broadcast services as a result of shadowing and reflection effects caused. Table 7.1 provides an appraisal of the services that could potentially be affected by the proposed development.

Table 7.1: Telecommunication and Broadcast Services Appraisal

Service	Key Outcomes
Analogue Terrestrial Television	Due to the completed Digital Television Switchover, it is now not possible for the proposed development to impact analogue terrestrial television reception, as analogue television transmissions have been switched off throughout the London region.
Digital Terrestrial Television (DTT)	DTT is more commonly known as 'Freeview'. The area is served by DTT services from the Crystal Palace transmitter (NGR TQ 33940 71220) to the southwest of the application site. In relation to Crystal Palace, the signal shadows from the Proposed Development would be created to the north-east. Much of the shadowed area comprises the River Thames, with no households being affected. Therefore, no assessment is required.
Digital Satellite Television	Digital satellite television services are provided by geo-stationary earth orbiting

Service	Key Outcomes
	satellites positioned above the equator. For the optimum reception of all satellite services, all receiving dishes must be positioned on the highest part of the rooftop as possible to ensure views to the sky's south-east horizon are free from other local skyline building clutter. Should there be any roof mounted satellite signal receive dishes on the adjacent locations where line-of-sight views to the serving satellites may be obscured by the proposed development, relocating dishes to areas on the roof top where views to those satellites remain clear, would ensure the good reception of satellite television signals.
Cable Television	A number of 'TV over cable' operators exist in London. TV services are provided to a property via cables and decoded using a set top box or an integrated television set. Virgin Media, Sky and BT all provide such services. The availability of cable TV depends on provider's cable infrastructure. London has comprehensive coverage from most providers. As cabled TV services operate via wired broadband, fibre and ADSL, interference effects cannot occur due to the nature of content delivery (through a cable, underground) and there is no possibility of effects from the proposed development on these services.
VHF (FM) Radio	The reception of VHF (FM) broadcast radio services are unlikely to be affected by the proposed development due to the nature of the radio broadcast network, the methods used for the encoding and decoding of signals and the likely current good coverage provided by the local VHF (FM) radio transmitters.
DAB Radio	The reception of DAB radio would not be affected by the proposed development as coverage is currently excellent throughout London and the network is designed to operate well in densely cluttered urban environments.
Mobile Phone Communications	The area will be served well by 2G, 3G and 4G mobile phone networks. The proposed development would not have any impact upon the operation of mobile telephones. The cellular nature of a mobile telephone network enables each handset to 'pick' the best cell site to ensure the correct operation of the handset. At this location,

Service	Key Outcomes
	mobile telephone coverage will be optimal and robust due to the nature of the commercial requirements in buildings within the wider area.
Fixed Microwave Links and other point-to-point Radio Communications Channels	Radio and microwave links can be adversely affected by obstructions on and near to their transmission path such as construction cranes, buildings and trees. In general, the directional nature of radio links means that interference can be avoided by defining clearance zones beyond which any degradation will be insignificant, or by moving the link to avoid the obstruction. Should any existing links be impacted upon as a result of the proposed development, standard mitigation options are likely to comprise the following: use of other radio scanner sites; use of a radio relay site; construction of a new base station site; use of private circuits or satellite services; and redefining the exclusion zones by the use of aerial engineering. The identification of the appropriate measures would be determined by a detailed review of the existing radio communications infrastructure at each base station, confirmation of the data for the services operated by the link's owner from the identified radio sites; and review of the theoretical analysis of the proposed development layout on the existing radio communication systems, to identify the exclusion zone for any affected radio infrastructure. It is noted that such standard mitigation measures can be readily implemented to ensure the continuing operation of links such that the proposed development is not considered likely to generate any significant residual effects on these services.
New Telecommunication Services within the Proposed Development	All new telecommunications services into the proposed development would take into account the expected growth in internet traffic and would provide bandwidth for heavy simultaneous use. The 'e-infrastructure' would be designed well and easily upgradeable for a modern building. Any signal distribution systems would be designed to be future proof and the nature of such networks would ensure that no unwanted or uncontrolled electromagnetic

Service	Key Outcomes
	emissions would occur. Any radio transmitters used within the proposed development (for example, Wi-Fi or maintenance needs) would be CE certified, meaning that the products have undergone stringent radio emission testing for use within the UK.

As set out in Table 7.1, potential impacts on telecommunication services may be limited to fixed microwave links and other point-to-point Radio Communications Channels only (should such links be present in the vicinity of the application site); however, these can be readily mitigated by means of standard measures as listed in Table 7.1.

Accordingly, it is considered that the proposed development would not give rise to significant environmental effects in relation to telecommunication interference. A formal Telecommunication Interference Assessment is therefore proposed to be scoped out of the ES.

7.4 Ecology

The application site comprises industrial warehouse units and is predominantly hardstanding. In addition, the application site is located in a dense urban environment characterised by buildings, roads and hardstanding areas.

A Phase 1 Habitat Survey of the application site was undertaken on the 15th September 2015. The associated Phase 1 habitat plan is contained in Appendix 1 for your information. In addition to carrying out an assessment of the habitats present within the site, the survey was “extended”, to include an appraisal of the site’s potential to support protected or notable flora and fauna. In particular, an appraisal of the site’s capacity to support bats, black redstart and other nesting birds was carried out. Incidental records, such as the presence of invasive weeds were also noted.

The on-site ecological conditions are consistent with a typical London urban site. None of the buildings or habitats within the application site are considered to provide suitable conditions to support protected species. However, the application site is located within the known breeding range of Black Redstart, and while it is unlikely that this species would nest within the application site, scoping the requirement for Phase 2 presence/ likely absence surveys with the RBG ecologists will be undertaken.

Japanese Knotweed is present at the northern site boundary. Specialist advice will be sought, to control this highly invasive weed, to prevent further spread and eradicate it from the application site.

It is considered that an Ecology ES chapter is not required, considering the low ecological value of the application site and the unlikelihood for any significant ecological effects. However, it is proposed that an Ecological Impact Assessment will be prepared and appended to the ES as a stand-alone report (within ES Volume 3).

7.5 Water Resources and Flood Risk

The application site is entirely hardstanding and benefits from the existing drainage system. The latest Environment Agency Flood Zone Maps shows that the application site is located in Flood Zone 3 of the defended River Thames floodplain. The application site is defended by the Thames Barrier and linear flood defences along the banks of the River Thames which protect the application site against tidal and fluvial flooding to the 1,000 year standard. For these reasons a full Flood Risk Assessment (FRA) will be produced in accordance with the NPPF and Planning Practice Guidance: Flood Risk and Coastal Change. All regional and local planning policy will also be taken into consideration in preparation of the assessment. In particular, the FRA would assess

whether the proposed development is likely to be affected by current or future flooding and will consider the potential for flood risks to arise as a result of the introduction of the proposed development, either on or off-site.

As part of the FRA, a conceptual drainage strategy will be developed. This will not constitute detailed drainage design, which is assumed would be completed post-determination of the application. The conceptual drainage strategy will include the use of Sustainable Drainage Systems (SuDS) wherever possible and will aim to demonstrate that the proposed development can accommodate the 1 in 100 year plus climate change storm without exacerbating flood risk off-site. This is in line with recent updates to national planning guidance set out in the Town and Country Planning Order 2015 as well as the new climate change allowances released in February 2016. The drainage and SuDS strategies would contribute to the emerging design proposals to ensure a significant reduction of pre-development run-off rates in accordance with the London Plan. As part of this process, Thames Water would be consulted with regard to the location of public sewer assets. An application for surface water and foul sewer connection into the Thames Water network will be undertaken post-consent as part of detailed drainage design.

There are no surface water features on the application site, although there is an open waterbody approximately 100 m east of the application site. The closest Environment Agency Main River is the River Thames, approximately 400 m north of the application site.

In respect of controlled waters, the application site benefits from an existing drainage system which collects surface water runoff and foul sewage before discharging to the public sewerage system. There are no known direct connections from the application site to surface water features. The proposed development will incorporate SuDS which will reduce the risk of flooding downstream and reduce the risk of pollution. The application site is not located in a Source Protection Zone. The superficial deposits on the site consist of Alluvium according to the BGS 1:50000 maps and are designated as a Secondary (differentiated) aquifer. The bedrock is a Principal chalk aquifer. Shallow basements are proposed as part of the development however there are no proposals for any discharge to ground.

Furthermore contamination on-site will be addressed by means of standard mitigation measures, including the development of an appropriate Remediation Strategy and the removal of sources of contamination as appropriate. As such, the proposed development would not pose any risks to controlled waters.

In respect of water consumption, the proposed development would adopt standard water saving devices and features as part of its design.

Consequently, no significant adverse environmental effects are likely to arise in relation to Water Resources and Flood Risk. A formal Water Resources Assessment is therefore proposed to be scoped out of the Environmental Statement, but the proposed development's FRA (including the drainage strategy) would be presented as a technical appendix in the ES.

7.6 Ground Conditions

Ramboll Environ carried out a Preliminary Risk Assessment (PRA) with regard to potential land contamination for the proposed redevelopment the application site. The review was undertaken by desk based research and also included a site inspection. The PRA is included within this EIA Scoping Report in Appendix 3.

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, which would in general terms be considered potentially contaminative, albeit no visual evidence of significant contamination was observed during the site visit. 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.

The PRA undertaken identified the following:

- The application site comprises two main parcels of land. 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. 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.
- 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.

In the UK, a risk-based approach is used to assess the potential impact associated with ground contamination. 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.

Further inspection of internal and external areas of the site and a Phase II environmental site investigation and risk assessment will be undertaken post planning to determine whether or not remediation is required, and the scope thereof. As is standard practice, the Phase II environmental site investigation and risk assessment would be secured by means of an appropriately worded planning condition. 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 proposed development 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). It is considered that the Proposed Development is unlikely to give rise to significant adverse environmental effects in relation to Ground Conditions. A formal Ground Conditions Assessment is therefore proposed to be scoped out of the ES, but the PRA will be presented in ES Volume 3.

7.7 Health and Wellbeing

The application site lies within the Woolwich Riverside ward of Greenwich. Analysis shows that the application site is located in a significantly deprived area of London, although deprivation levels vary a lot across the RBG.

The potential impacts of a new development on the health and well-being of new and existing residents and workers would be largely determined by the way the newly proposed buildings and spaces are used, as well as lifestyle factors which cannot be accurately quantified at the planning stage. However, development and planning can play a role within the wider determinants of health and well-being, including provision of good quality homes, employment, access to health services, leisure facilities and fresh food, access to healthy forms of transport and impacts on community cohesion.

The proposed development would provide new high quality residential units, meeting an identified need for new homes in the borough and potentially easing overcrowding. All homes would be designed to comply with standards and guidelines set out by Lifetime Homes and the London Plan. These standards aim to ensure the delivery of high quality housing and eliminate poor housing conditions.

Access to employment and being in work can increase health and well-being, and make it easier to pursue a healthy lifestyle, with income being one of the strongest indicators of health and disease in public health research. The proposed development would create temporary construction jobs in the construction stage and permanent operational jobs in the non-residential uses.

The proposed development would ensure that the new residential population has access to healthcare, education and community facilities, as well as on-site open space to help new and existing residents lead more healthy lives (to be secured through Section 106 agreements, where appropriate). Good design would ensure safe, convenient and direct access for walking, running or cycling between places that meet every-day needs such as shops, community facilities, work and schools.

In addition, the proposed development would be designed according to 'Secured by Design Principles' and would promote natural surveillance and increased activity at street level, reducing fear of crime.

At the community level, positive impacts of mixed-use developments on social capital and social inclusion are often initiated by supportive social networks. At the planning stage, this can be encouraged by providing places where residents can meet and interact with each other, such as shared spaces and attractive thoroughfares. The proposed development's open spaces and proposed commercial uses would help to encourage community cohesion. In addition, attractive outdoor walkways and improved amenity space will help to integrate the buildings and its residents with the surrounding context.

Although it is considered unlikely that the proposed development would result in any adverse health impacts, a number of assessments within the EIA will consider the proposed development's indirect or secondary impacts on health and well-being, namely, the:

- Socio Economic Assessment;
- Air Quality Assessment;
- Noise and Vibration Assessment;

- Transport and Accessibility Assessment;
- Daylight, Sunlight, Overshadowing and Solar Glare Assessment; and
- Wind Assessment.

Furthermore the Applicant would prepare a CEMP to manage the construction of the proposed development and would address the following issues related to health and well-being:

- public safety;
- amenity and site security;
- noise and vibration controls; and
- air and dust management.

The CEMP's implementation would be secured by means of an appropriately worded planning condition.

Accordingly it is considered that health and well-being will be comprehensively considered within the ES as a whole and that a separate Health Impact Assessment would not provide any additional information relevant to the determination of the planning application.

Accordingly, it is considered that the proposed development would not give rise to significant environmental effects in relation to Health Impacts.

7.8 Aviation

The application site is not located within the London City Airport Safeguarding Zone[28], and when considering this and the proposed heights of the redevelopment, it is considered that aviation impacts are not an issue. Therefore, an aviation assessment has been scoped out of the ES.

[28] Aerodrome Standards Department, 2004. Safeguarded and Obstacle Limitation Surfaces – London City Airport. Civil Aviation Authority.

8. SUMMARY

The ES will address the requirements of Parts I and II of Schedule 4 of the EIA Regulations. A preliminary structure and content of the ES is as follows:

- Non-Technical Summary;
- Volume 1: Main Text and Figures:

  1 Introduction;

  2 EIA Process and Methodology;

  3 Alternatives and Design Evolution;

  4 Proposed Development;

  5 Demolition and Construction;

  6 Socio-Economics;

  7 Transport;

  8 Air Quality;

  9 Noise and Vibration;

  10 Archaeology (buried heritage);

  11 Daylight, Sunlight, Overshadowing and Solar Glare;

  12 Wind;

  13 Cumulative Impact Assessment;

  14 Residual Effects and Mitigation;
- Volume 2: Townscape and Visual Assessment (TVA); and
- Volume 3: Technical Appendices.

Following review of the scheme it is not deemed necessary to undertake a full ES Chapter assessment for ecology, ground conditions or water resources. Although Volume 3 will include the following ES technical appendices to inform the overall assessment:

- Transport Assessment (TA);
- Ecological Impact Assessment;
- Preliminary Risk Assessment (PRA); and
- Flood Risk Assessment (FRA).

We would very much value the opinion of the RGB on the proposed scope of the EIA, noting that the proposed development details are highly confidential and this Scoping Report should not be circulated any wider than in-house to the RGB officers.

APPENDIX 1
ECOLOGY PHASE 1 PLAN

KEY:

- SITE BOUNDARY
- RUDERAL VEGETATION
- ORNAMENTAL PLANTING
- EPHEMERAL / SHORT PERENNIAL VEGETATION
- SCATTERED SCRUB
- TREE
- TREE WITH CATEGORY 2 BAT POTENTIAL
- SPOIL
- BUILDING
- HARDSTANDING
- FENCE
- JAPANESE KNOTWEED

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VIP TRADING ESTATE, GREENWICH	PROJECT
HABITATS AND ECOLOGICAL FEATURES	TITLE
4438/ECO3	DRAWING NO.
-	REV.
SEPTEMBER 2015	DATE

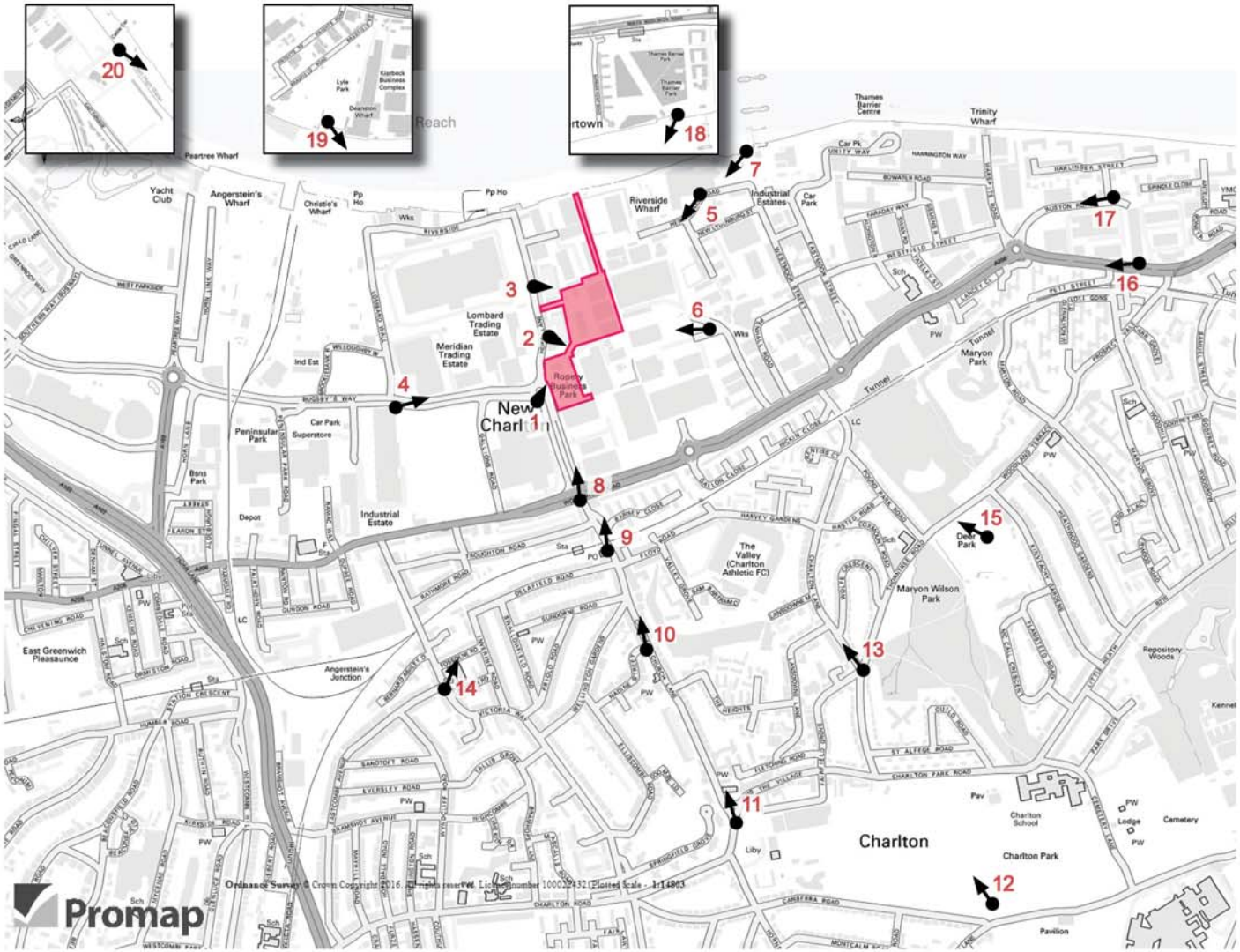
APPENDIX 2
TOWNSCAPE AND VISUAL VIEWPOINTS

PSC view no.	Location	Render / Wireline
1	Anchor and Hope Lane / Bugsby's Way roundabout	R
2	Atlas Gardens	R
3	Anchor and Hope Lane, looking across Derrick Gardens	R
4	Bugsby's Way	R
5	Herringham Road	R
6	Stone Lake Industrial Park	R
7	Thames Barrier Information Centre	R
8	Charlton Church Lane / Woolwich Road	R
9	Charlton Train Station	R
10	Charlton Church Lane / Nadine Street	W
11	Charlton Road, in front of Charlton House	W
12	Charlton Park	W
13	Charlton Lane / Fairfield Grove / Thorntree Road	W
14	Victoria Way / Eastcombe Avenue	W
15	Maryon Wilson Animal Park	W
16	Woolwich Church Street	W
17	Ruston Road	W
18	Thames Barrier Park	W
19	Lyle Park	W
20	Riverside walkway, adjacent to Emirates Greenwich Peninsula Emirates Air Line Station	W

Notes:

Viewpoint locations are approximate - exact locations, taking into account conditions on the ground, to be determined on site with PSC.

Approximate site boundary marked in red for indicative purposes only.



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Townscape and visual impact assessment

Issue no: 1
Date: April 2016
Status: PSC viewpoint proposals

APPENDIX 3
PRA

Intended for
Leopard Guernsey Anchor Propco Limited

Date
April 2016

Project Number
UK11-23110

CHARLTON RIVERSIDE
PRELIMINARY RISK ASSESSMENT

RAMBOLL ENVIRON

CHARLTON RIVERSIDE
PRELIMINARY RISK ASSESSMENT

Project No.	**UK11-23110**
Issue No.	**2**
Date	**04/05/2016**
Made by	**Charles Collins**
Checked by	**Sarah Penry**
Approved by	**Rachel Naylor**

Made by: Charles Collins

Checked/Approved by: Sarah Penry / Rachel Naylor

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Version Control Log

Revision	Date	Made by	Checked by	Approved by	Description
02	04/05/2016	CC	SP	RN	Final Issue to Client

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CONTENTS

LIST OF TABLES

APPENDICES

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 Anchor and Hope Lane, Greenwich, London (the 'application site') which is an existing industrial estate 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 parcels of land: Parcel A, to the north and Parcel 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 Parcel 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.

Further information regarding the contaminated land status of the application site under Part IIA of the Environmental Protection Act 1990 has been requested from the environmental health department of Royal Borough of Greenwich Council and is awaited.

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 parcels of land at Anchor and Hope Lane, Greenwich, London (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, which are currently being refined through the on-going pre-application design and planning process, are summarised below:

The development proposals will involve the demolition of existing industrial buildings at the application site (approximately 2.57 ha) known as Anchor and Hope Lane, which forms part of the wider Charlton Riverside Framework, and a comprehensive redevelopment to provide a high quality residential-led mixed-use development accommodated in a variety of residential typologies (townhouses to high-rise apartments) with a mix of public and private spaces at ground and building roof levels (consisting of hard and soft landscaping).

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

The proposed development will bring forward up to approximately 950 residential dwellings ranging from approximately three storeys up to approximately 25 storeys, with a maximum of 3,500m^2 commercial space at ground floor level, and a partial basement-level car park.

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 on Anchor and Hope Lane, in Greenwich, London, at National Grid Reference (NGR) 541110, 178940 (refer to Figure 1, Appendix 1). The application site comprises two parcels of land referred to as 'Parcel A' (VIP Industrial Park) and 'Parcel 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 Parcel 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 Parcel 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 2.5 ha, as shown in Figure 2 (Appendix 1). As indicated above, the application site comprised two separate parcels of land: Units 1-26 and Units A and B VIP Industrial Park to the north (herein referred to as 'Parcel A') and a second parcel of land located to the south-west comprising two commercial premises (herein referred to as 'Parcel B'). A strip of land providing a direct access link to the southern bank of the River Thames extends from the north of Parcel A. The location and extent of each parcel is shown in Figure 2 and described in further detail below.

2.2.1 Parcel A

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

Table 2.3 Parcel 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 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	Tenant	Nature of Activities
Unit 25	KPT Solutions	Storage of construction supplies.
Unit 26	Fastline Equipment Ltd	Manufacture of lifts and lift components

External areas at Parcel 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 Parcel B

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

Table 2.4 Parcel 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 Parcel 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. Parcel B is bordered by a strip of wooded landscaping along the western site boundary. Landscaped areas occupy approximately 15% of the Parcel 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:

Parcel 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.

Parcel 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 Parcel 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:

Parcel 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 Parcel A to the southern bank of the River Thames.

Parcel 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 Parcel 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 Parcel 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 parcels 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).

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 Parcel 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

Parcel 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 Parcel 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.

Parcel 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, Parcel 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 Parcel 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

An enquiry has been made to Royal Borough of Greenwich Council in order to identify if the Council has any specific information about the application site, particularly with reference to the application site's status under Part 2A of the Environmental Protection Act 1990. In addition, information on private water abstractions has been requested. *This information is awaited.*

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 Parcel A

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

Table 3.1: Parcel 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 Parcel 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 Parcel B.

3.4 Petroleum Licensing Authority Records

An enquiry has been submitted to the Petroleum Licensing Authority (London Fire Brigade 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. *This information is awaited.*

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.
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

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
					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

Parcel A

Parcel 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.

Parcel B

Parcel 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 parcel of the application

site (Parcel 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.

Ramboll Environ has requested information regarding the contaminated land status of the subject Site and near surroundings from the environmental health department of Royal Borough of Greenwich Council and this is awaited.

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

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 Parcel 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 Parcel A and the north of the Parcel 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 parcels of land: Parcel A, to the north and Parcel 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 Parcel 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.

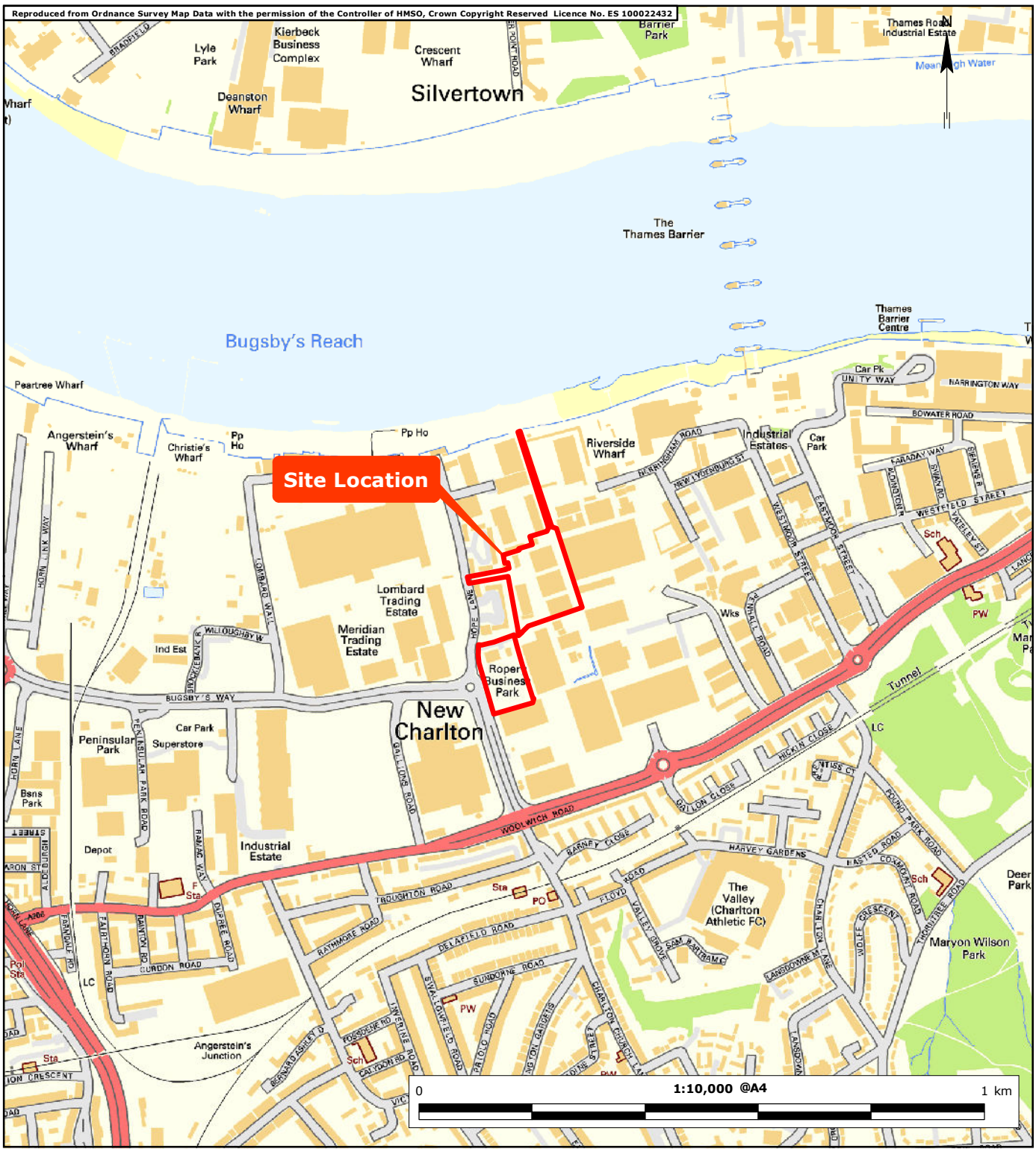
In the UK, a risk-based approach is used to assess the potential impact associated with ground contamination as summarised in the CSM. No specific highly contaminative activities have been identified as having taken place on site. Rather the former uses of the application site (primarily as part of a 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.

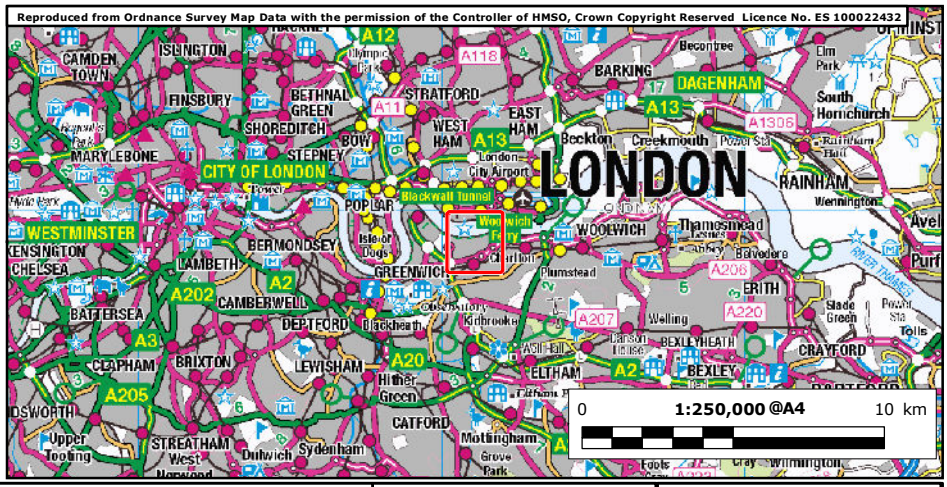
Further information regarding the contaminated land status of the application site under Part IIA of the Environmental Protection Act 1990 has been requested from the environmental health department of Royal Borough of Greenwich Council and is awaited.

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: April 2016	RAMBOLL ENVIRON
		Scale: As shown	
Project No.: UK11-23110	Client: -	Issue: 1 Drawn by: DM	