Prologis UK Ltd

FORMER GSK SITE, STOCKLEY PARK, HILLINGDON

Flood Risk Assessment

2215-FRA-001
JUNE 2020

CONFIDENTIAL

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Flood Risk Assessment

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EXECUTIVE SUMMARY

This Flood Risk Assessment (FRA) has been prepared by WSP on behalf of Prologis UK Ltd (hereafter referred to as 'the Client'), to accompany a full planning application for the redevelopment of the former GSK site, Stockley Park, Hillingdon (hereafter referred to as 'the Application Site').

The 6.3 hectare (ha) site currently comprises three commercial buildings with associated parking, which are occupied by the pharmaceutical company GlaxoSmithKline (GSK). Full planning permission is sought to redevelop the Site, to comprise two industrial units, providing industrial floorspace and ancillary offices with associated parking, access arrangements, landscaping and infrastructure.

This FRA has been written in accordance with the requirements of the National Planning Policy Framework (NPPF) and other relevant National and Local Policy and Guidance documents.

The Site is wholly located in Flood Zone 1, according to the Environment Agency's Flood Maps for Planning. Flood risk to the Site from coastal / tidal, fluvial, sewer and drainage infrastructure, and artificial sources are assessed to be Negligible to Low. Flood risk to the Site from groundwater sources is considered to be Medium.

To mitigate the risk of groundwater flooding to the Site, it is recommended that the proposed development should be designed with minimal risk of groundwater interference, including the use of appropriate construction techniques and mitigation measures. Furthermore, basements and underground car parks are not proposed as part of the proposed development. Should any below ground works be proposed at the Site, re-evaluation would be required.

The risk of flooding from pluvial sources to the Application Site is classified as low, however by developing the Application Site, the risk of pluvial / overland flows from the proposed development could increase due to an increase in impermeable surfaces. A Surface Water Drainage Strategy (SWDS) is therefore proposed to manage this risk.

The SWDS has been prepared by a separate consultant, RPS Group (refer to Report No. PPEWL-RPS-XX-SI-XX-CA-C-0300) and should be read in conjunction with this FRA. The strategy incorporates the use of Sustainable Drainage Systems (SuDS), to provide additional benefits for events up to and including the 1% annual probability event, including a 40% allowance for climate change. A foul water strategy has also been prepared by RPS Group, where a packaged pump system is proposed as a gravity connection cannot be provided to the nearest Thames Water manhole, 400m west of the Application Site.

In consideration of the presented drainage strategy, the risk of flooding posed to the Site and the risk posed by the development itself are considered to be Negligible to Low.

Safe and dry access and egress will be provided via the primary access to the site via Ironbridge Road North, to the west of the Site.

Based on findings of this Flood Risk Assessment, the requirements of the National Planning Policy Framework have been achieved with respect to flooding and drainage. The proposed development will not be at risk from flooding, and furthermore, it will not cause an increase in flood risk to others over its lifetime.

1 INTRODUCTION

1.1 APPOINTMENT AND BRIEF

1.1.1 WSP was appointed by Prologis UK Ltd. to complete a site-specific Flood Risk Assessment (FRA), as part of the supporting documentation for a full planning application for the re-development of the former GSK site, Stockley Park, Hillingdon

1.1.2 The 6.3 ha site currently comprises three commercial buildings with associated parking, occupied by the pharmaceutical company GSK. A location plan is provided in **Appendix A-1** (Drawing 62215-LOC-001).

1.1.3 WSP has prepared this report in accordance with the instructions of their client, Prologis UK Ltd., for their sole and specific use relating solely to the above site. Any person who uses any information contained herein does so at their own risk and shall hold WSP harmless in any event.

1.1.4 Whilst this report was prepared using the reasonable skill and care ordinarily exercised by engineers practicing under similar circumstances and reasonable checks have been made on data sources and the accuracy of the data, WSP accepts no liability in relation to the report should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP. In any event, WSP shall not be liable for any loss or damages arising under or in connection to the use of this report.

1.2 AIMS AND OBJECTIVES

1.2.1 The aim of this National Planning Policy Framework (NPPF) compliant FRA is to identify flood risks to the Site and those that may arise from the proposed development. Where risks are identified, mitigation measures are proposed to manage the risks over the lifetime of the development, including accounting for the effects of climate change. This includes presentation of a Surface Water Drainage Strategy (SWDS) for the proposed development.

1.2.2 To achieve this aim, the following objectives have been completed:

- A desk study and data research including review of:
  - The National Planning Policy Framework (NPPF) (2019);
  - The NPPF Flood Risk and Coastal Change Planning Practice Guidance (PPG);
  - Non-Statutory Sustainable Drainage Technical Standards, DEFRA (2015);
  - The SuDS Manual (CIRIA C753), CIRIA (2015);
  - Flood Risk Assessments: Climate Change Allowances (2019);
  - Thames River Basin Management Plan (2015);
  - Thames Estuary 2100 (TE2100) (2012);
  - The London Plan (2016);
  - The London Plan: Intend to Publish (Draft 2019);
  - London Borough of Hillingdon Local Plan: Part 1 – Strategic Policies (2012);
  - London Borough of Hillingdon Local Plan: Part 2 (Draft) (2019);
  - West London Strategic Flood Risk Assessment (SFRA) (2018);
  - London Borough of Hillingdon Local Flood Risk Management Strategy (LFRMS) (2016);
  - London Borough of Hillingdon Surface Water Management Plan (SWMP) (2013);

- London Borough of Hillingdon Preliminary Flood Risk Assessment (PFRA) (2011);
- London Borough of Hillingdon Sustainable Drainage: Design and Evaluation Guide (2017); and,
- Greater London Authority: London Sustainable Drainage Proforma (2019).

- Consultation with regulatory bodies and third parties, including:
  - The Environment Agency;
  - London Borough of Hillingdon;
  - Canal and River Trust; and
  - Thames Water.

(Copies of correspondence received and exchanged with these stakeholders are provided in **Appendix B**).

1.2.3 The following technical studies have been undertaken to support the evidence base for this FRA:

- An assessment of flooding to the Site and proposed development from fluvial, pluvial, groundwater, sewers and man-made infrastructure.
- An assessment of the opportunities and constraints presented by the water environment to development.
- An assessment of the impact of the proposed development on local flood risks.
- An assessment of the residual flood risk to the proposed development and neighbouring property from local flood sources.

1.2.4 A separate drainage strategy has been prepared by RPS Group to support the FRA (refer to Report No. PPEWL-RPS-XX-SI-XX-CA-C-0300) which has assessed the following:

- An estimate of surface water flows based on the current conditions at the Application Site and known existing drainage systems;
- Estimation of post development surface flows based on the development proposals and attenuation requirements; and,
- Estimation of foul flows generated from the proposed development including an assessment of pump failure.

2 POLICY AND GUIDANCE

2.1 NATIONAL PLANNING POLICY / GUIDANCE

NATIONAL PLANNING POLICY FRAMEWORK (2019)

2.1.1 The NPPF requires that an FRA should be undertaken:

- For all developments greater than 1 Hectare (ha) in size in Flood Zone 1;
- All proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, or in an area within Flood Zone 1 which has a critical drainage problem;
- Where proposed development or a change of use (e.g. from commercial to residential) to a more vulnerable class may be subject to other sources of flooding (e.g. surface water drains, reservoirs).

2.1.2 The NPPF requires an FRA to be undertaken to demonstrate that the proposed development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

2.1.3 The NPPF also requires development to be allocated towards areas at lowest risk of flooding (the Sequential Test), and if necessary, the development proposals would be subject to satisfying the requirements of the Exception Test.

FLOOD RISK AND COASTAL CHANGE PLANNING PRACTICE GUIDANCE (PPG)

2.1.4 The NPPF is supported by the National Planning Practice Guidance (PPG). The Flood Risk and Coastal Change PPG states that an FRA must outline the following:

- whether a proposed development is likely to be affected by current or future flooding from any source;
- whether it will increase flood risk elsewhere; and,
- whether the measures proposed to deal with these effects and risks are appropriate.

2.1.5 The NPPF Flood Risk and Coastal Change Planning Practice Guidance (PPG) states that the lifespan of commercial development should be considered as 50 years and therefore climate change has been considered for this timescale.

2.1.6 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF and the *Flood Risk and Coastal Change* Planning Practice Guidance (PPG) (Communities and Local Government, 2014), the proposed development would be classified as *'Less Vulnerable'* (i.e. general industry/other services).

2.1.7 Table 3 (Flood Risk Vulnerability and Flood Zone Compatibility) of the PPG, states that *'Less Vulnerable*' development is appropriate in Flood Zone 1.

FLOOD RISK ASSESSMENTS: CLIMATE CHANGE ALLOWANCES (UPDATED MARCH 2020)

2.1.8 A summary of the Environment Agency's climate change allowances is provided in Chapter 3. The revised guidance was first published in February 2016, and last updated in March 2020, with updates to the following:

- Updated sea level rise allowances using UKCP18 projections;

- Updated guidance on how to apply peak river flow allowances, so that the approach is the same for Flood Zones 2 and 3;
- Additional guidance on how to:
    - Calculate flood storage compensation;
    - Use peak rainfall allowances to help design drainage systems;
    - Account for the impact of climate change on storm surge; and,
    - Assess the design access and escape routes for less vulnerable development.

NON-STATUTORY SUSTAINABLE DRAINAGE TECHNICAL STANDARDS (MARCH 2015)

2.1.9 The Non-Statutory Sustainable Drainage Technical Standards document sets out the technical standards for Sustainable Drainage Systems (SuDS).

2.1.10 The standards state that for greenfield developments, the peak runoff rate from the development to any highway drain, sewer or surface water body should never exceed the peak greenfield runoff rate for the same event.

2.1.11 For brownfield developments, the runoff volume from the development to any highway drain, sewer or surface water body in the 1 in 100-year, 6-hour rainfall event must be constrained to a value as close as is reasonably practicable to the greenfield runoff volume for the same event. The runoff volume should never exceed the existing brownfield runoff volume for the same event.

- The drainage system must be designed so that unless an area is designated to hold and/or convey water as part of the design:
    - Flooding does not occur on any part of the Site, for events up to and including rainfall events with a 3.3% chance of occurring in any given year; and,
    - Flooding does not occur during rainfall events with a 1% chance of occurring in any given year, in any part of a building or utility plant susceptible to water.

2.1.12 The design of the Site must ensure that, where reasonably practicable, flows resulting from rainfall, in excess of a 1% annual probability rainfall event, are managed in exceedance routes that minimise risks to people and property.

2.1.13 Pumping should only be used to facilitate drainage for those parts of the site where it is not reasonably practicable to drain water by gravity.

2.1.14 The mode of construction of any communication with an existing sewer or drainage system must be such that the making of the communication would not be prejudicial to the structural integrity and functionality of the system. Any drainage which does occur must be minimised and restricted before the drainage system is classified as complete.

2.2 LOCAL POLICY

THE LONDON PLAN (MARCH 2016)

2.2.1 The London Plan is a strategic planning document produced for the Mayor of London, the London Boroughs and the Corporation of the City of London. This spatial development strategy should be adhered to for any planning decisions in London.

2.2.2 The plan emphasises that proposed developments should take account of the wider issues associated with sustainable construction (**Policy 5.3**), climate change, and flood risk (**Policy 5.12**), and should avoid having any impact on sites of European importance for nature conservation.

2.2.3 The most relevant policies within the current 2016 plan are listed below:

- **Policy 5.10 'Urban Greening'** supports development plans that incorporate plans for urban greening and planting in the public realm.
- **Policy 5.11 'Green Roofs and Development Site Environs'** states that major development should be designed to include roof and site planning, to deliver sustainable urban drainage.
- **Policy 5.12 'Flood Risk Management'** states that:

  'Development proposals must comply with the Flood Risk Assessment and management requirements as set out in the NPPF and the associated technical guidance on flood risk over the development's lifetime and have regard of measures proposed in Thames Estuary 2100 and Catchment Flood Management Plans.'

- **Policy 5.13 'Sustainable Drainage'** states that:

2.2.4 'Development should utilise SuDS unless there are practical reasons for not doing so, and should aim to achieve greenfield run-off rates and ensure that surface water run-off is managed as close to its source as possible in line with the following drainage hierarchy:

  - → *Store rainwater for later use;*
  - → *Use infiltration techniques, such as porous surfaces in non-clay areas;*
  - → *Attenuate rainwater in ponds or open water features for gradual release;*
  - → *Attenuate rainwater by storing in tanks or sealed water features for gradual release;*
  - → *Discharge rainwater direct to a watercourse;*
  - → *Discharge rainwater to a surface water sewer/drain; or,*
  - → *Discharge rainwater to the combined sewer.*

THE LONDON PLAN: INTEND TO PUBLISH (DRAFT 2019)

2.2.5 A new London Plan has been drafted and is expected to be finalised in 2020. Chapter 9 'Sustainable Infrastructure' of the draft document includes several policies relating to flood risk and water management. Any new or replacement policies, relevant to the proposed development, are outlined below.

- **Policy G5 'Urban Greening'** refers to urban greening as a fundamental element of building design and introduces the 'Urban Greening Factor' to identify the amount of urban greening required in developments.
- **Policy SI 12 'Flood Risk Management'** largely reiterates the aims of Policy 5.12 in the current 2016 London Plan, but places a greater emphasis on creating space for water in development and using natural flood management measures where possible.
- **Policy SI 13 'Sustainable Drainage'** reiterates the drainage hierachy in Policy 5.13, with a greater emphasis on drainage with multiple benefits being preferred.
- **Policy D11 'Safety, Security and Resilience to Emergency'** states that development proposals should maximise building resilience and minimise potential physical risks that arise from flood related hazards.

- **Policy GG6 'Increasing Efficiency and Resilience'** states that buildings and infrastructure should be designed to adapt to climate change, utilise water efficiently and reduce flooding impacts.

WEST LONDON STRATEGIC FLOOD RISK ASSESSMENT (SFRA) (MARCH 2018)

2.2.6 West London's Strategic Flood Risk Assessment (SFRA) provides an overview of flood risk within six London boroughs, including the London Borough of Hillingdon (LBH). It provides an update to the individual borough SFRAs, completed in 2008.

2.2.7 Interactive mapping within the SFRA confirms the Site is not within a Critical Drainage Area (CDA) or an area with records of Thames Water Sewer flooding (based on 2017 data).

2.2.8 The interactive mapping does indicate that the Site is within an area with permeable superficial deposits (according to the Greater London Authority mapping) and is within an area with between a 50% and 75% susceptibility to groundwater flooding (according to Environment Agency mapping).

LONDON BOROUGH OF HILLINGDON LOCAL PLAN: PART 1 – STRATEGIC POLICIES (NOVEMBER 2012)

2.2.9 The LBH Local Plan: Part 1 – Strategic Policies is the key strategic planning document for Hillingdon and contains several policies related to Flood Risk and Sustainable Drainage.

- **Policy EM1** '**Climate Change Adaptation and Mitigation'** emphasises the requirement for development to be located outside of flood risk areas, and for development to consider the whole water cycle in its design.
- **Policy EM6** '**Flood Risk Management'** highlights the requirement for SuDS to be incorporated into all new development, which may require developer contributions to ensure long term maintenance.

2.2.10 The document also specifies that SuDS should be designed to accommodate the 1 in 100-year event plus a 30% allowance for climate change.

LONDON BOROUGH OF HILLINGDON LOCAL FLOOD RISK MANAGEMENT STRATEGY (LFRMS) (FEBURARY 2016)

2.2.11 LBH, as the Lead Local Flood Authority (LLFA), is required to develop a Local Flood Risk Management Strategy (LFRMS) for its area, under the Flood and Water Management Act 2010. The aim of the LFRMS is to produce a plan to reduce and manage flood risk in a way that will benefit people, property and the environment.

2.2.12 The LFRMS does not refer to the Site specifically but provides an overview of sources of flooding within the Borough, and the importance of SUDS in developments.

2.2.13 The Borough suffers from all sources of flooding, and is particularly vulnerable to surface water flooding, which often occurs in conjunction with sewer flooding. Fluvial flooding is a risk across the Borough, due to the extensive development of the floodplain, and fast response of the watercourses to rainfall. The extensive coverage of permeable superficial deposits across the borough, underlain by impermeable clay, creates a complex issue of groundwater flooding.

LONDON BOROUGH OF HILLINGDON SURFACE WATER MANAGEMENT PLAN (SWMP) (JANUARY 2013)

2.2.14 The Surface Water Management Plan (SWMP) outlines the preferred surface water management strategy for the LBH.

2.2.15 The SWMP confirms that the Site is not located within a Critical Drainage Area and there are no recorded incidents of sewer, pluvial or fluvial flooding.

2.2.16 The mapping within the SWMP also indicates that the Site is within an area with permeable superficial deposits but is not located near to any historic records of groundwater flooding. Furthermore, that the Site is within an area with Uncertain SUDS suitability, and is located adjacent to a historic landfill site, to the east.

LONDON BOROUGH OF HILLINGDON PRELIMINARY FLOOD RISK ASSESSMENT (PFRA) (MAY 2011)

2.2.17 The LBH Preliminary Flood Risk Assessment (PFRA) provides a coarse assessment for identifying potential Flood Risk Areas within the Borough using a precautionary approach.

2.2.18 West Drayton, where the Site is located, is currently excluded from the indicative Flood Risk Areas, as flooding in this area is considered unlikely to result in “significant harmful consequences”.

LONDON BOROUGH OF HILLINGDON SUSTAINABLE DRAINAGE: DESIGN AND EVALUATION GUIDE (JANUARY 2017)

2.2.19 This guide provides an overview of SuDS and their benefits, and what LBH require from developers, to support planning applications for new developments.

2.2.20 The guidance is comprehensive but does not deviate from standard SuDS best practice. There is an objective for flows from brownfield sites to be reduced to greenfield rates.

GREATER LONDON AUTHORITY: LONDON SUSTAINABLE DRAINAGE PROFORMA (2019)

2.2.21 The London Sustainable Drainage Proforma was introduced in April 2019 by London’s 33 LLFAs and is required to be submitted alongside Planning Applications to set a clear standard for surface water drainage strategies in London.

3 BACKGROUND

3.1 SITE LOCATION

3.1.1 The Site is located at Stockley Park, Ironbridge Road North, within West Drayton, Uxbridge. The approximate Ordnance Survey (OS) grid reference for the Site is (507566, 180118), and the nearest postcode is UB11 1BT. Refer to Drawing No. 62215-LOC-001 in **Appendix A-1** for the Site Location plan.

3.1.2 The Site is approximately 6.3 ha in size and is a brownfield site, comprising of three commercial office buildings with associated parking and landscaping, including ponds.

3.1.3 The Site is bordered by Horton Road and Stockley Park to the north, Stockley Road to the east, industrial parks to the west, and the Grand Union Canal to the south.

3.2 DEVELOPMENT PROPOSALS

3.2.1 It is understood that full planning permission is sought to redevelop the Site to provide two industrial units providing industrial floorspace (Use Class B1c/B2/B8) and ancillary offices together with associated parking, access arrangements, landscaping and infrastructure.

3.2.2 A Site Layout Plan (Drawing No. 30928 – PL – 201A) and Landscape Concept Plan (Drawing No. 1982-19-05B) is provided in **Appendix C-1.**

3.3 TOPOGRAPHY

3.3.1 Inspection of Environment Agency LiDAR Data (1m resolution) indicates that the Site varies from approximately 31m Above Ordnance Datum (m AOD) along the southern boundary of the Site, to approximately 37m AOD in the north west corner of the Site. The Site generally slopes towards its southern boundary where levels continue to fall towards the canal, which is at approximately 30m AOD.

3.3.2 A topographical survey was undertaken by Greenhatch Group in June 2019 and confirms the levels on Site as provided by the LiDAR data. A copy is provided in **Appendix C-2**. The lowest elevations are found towards the southern boundary of the Site, at approximately 31- 32m AOD. The centre of the Site is largely flat, with levels at approximately 34 - 35m AOD. An increase in elevation is identified towards the north western corner of the Site, to approximately 35 – 37m AOD.

3.4 GEOLOGY AND HYDROGEOLOGY

3.4.1 British Geological Survey (BGS) maps[1]) indicate that Site is underlain by bedrock of London Clay Formation – Clay, Silt and Sand. Superficial deposits are also present across the entire Site, with the Lynch Hill Gravel Member - Sand and Gravel, present across the majority of the Site. A small amount of the Langley Silt Member – Clay and Silt, is present in the south eastern corner of the Site.

[1] [1] British Geological Survey (2019) Geoindex Onshore, accessed 7th January 2020. Available at: http://www.bgs.ac.uk/GeoIndex/

3.4.2 BGS mapping also indicates that artificial deposits are present at the Site. The Site itself is comprised of Worked Ground (Undivided), described by the BGS as an area that has been excavated by manmade processes. Adjacent to the Site, to both the north and west, are areas of infilled ground, where excavated ground has been backfilled with materials of variable composition. Extracts of the BGS geology mapping are provided on Drawings No. 62215-BGS-001, 62215-BGS-002, 62215-BGS-003 in **Appendix A-3** for reference.

3.4.3 Additional information regarding the ground conditions at the Site are found in a Phase 2 Geo-environmental and geotechnical assessment, undertaken by WSP in 2019[2]. A ground investigation undertaken in February 2019 supports the findings of the BGS mapping, and indicates that the Site is comprised of the following, in metres of thickness below ground level:

- Hardstanding: 0.08m;
- Made Ground (sand and limestone aggregate): 0.08 to 0.42m;
- Made Ground (infilled material): 0.2 to 5.70m;
- Made Ground (reworked material): 0.2 to 4.6m;
- Langley Silt Member: 0.4 to 1.0m;
- Lynch Hill Gravel Member: 0.3 to 2.70m;
- London Clay Formation: to a maximum depth of 16.95m below ground level (base not found).

3.4.4 Groundwater monitoring was undertaken as part of the ground investigation in February 2019. Monitoring was undertaken in 12 wells across the Site. Groundwater was encountered in 11 of these wells, mainly within the Made Ground. The shallowest recording was at 0.49 m below ground level (bgl), towards the south of the Site, whilst the deepest recording was at 4.95mbgl in the centre of the Site. Relevant excerpts of the report have been reproduced in **Appendix C-3**.

3.4.5 The Environment Agency's Magic Map Application[3] indicates that the bedrock geology of the Site is not a designated aquifer and is classified as an 'unproductive' stratum. Unproductive Strata are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow. The London Clay Formation is classified as "rocks with essentially no groundwater" by the Environment Agency.

3.4.6 The superficial deposits are, however, designated as a 'Principal Aquifer'. These are defined by the Environment Agency as '*Layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage'*.

3.4.7 Magic Map also indicates that the Site is not located within, or in close proximity to, a Groundwater Source Protection Zone (SPZ). However, the Site is located within a Medium to High Groundwater Vulnerability Zone (GVZ). These are zones defined as '*areas able to easily transmit pollution to groundwater. They are characterised by high-leaching soils and the absence of low-permeability superficial deposits'.*

[2] WSP (2019), Prologis Park West London Expansion Land: Phase 2 Geo-environmental and geotechnical assessment.
[3] Environment Agency (2020), Magic Map Application, accessed 7th January 2020. Available at: https://magic.defra.gov.uk/MagicMap.aspx

3.5 IDENTIFICATION OF EXISTING WATERCOURSES

3.5.1 There are no known watercourses within the Site or in its vicinity.

3.1 IDENTIFICATION OF OTHER WATER FEATURES

3.1.1 The Grand Union Canal is located approximately 20m from the southern boundary of the Site.

3.1.2 There are also a number of ponds in close proximity to the Site, including two on the Site itself. Both ponds within the site boundary are unnamed and measure approximately 40m in length. According to the Geo-environmental assessment[2], the pond located to the east of the Site is a SuDS feature, attenuating surface water runoff from the car park, whilst the pond in the north of the Site is for aesthetic purposes.

3.1.3 A larger unnamed pond, approximately 200m in length, is present on the industrial park to the west of the Site, and a further unnamed pond is present within the southern boundary of Stockley Country Park to the north of the Site, measuring approximately 150m in length.

3.2 EXISTING FLOOD DEFENCES

3.2.1 The Environment Agency's Flood Map for Planning indicates that the Application Site does not benefit from any formal fluvial flood defences.

3.3 EXISTING SEWER AND DRAINAGE INFRASTRUCTURE

3.3.1 The Site is classified as a brownfield site and is assumed to discharge into the Thames Water sewer network, however this has not been confirmed.

3.3.2 Inspection of the Thames Water Asset Plans (**Appendix C-4**), obtained in November 2019, indicates a Thames Water surface water sewer present in the south western corner of the Site. This sewer appears to collect highway drainage, as well as existing site drainage, and outfall into the Grand Union Canal.

3.3.3 The nearest foul sewer is located approximately 400m to the west of the Site along Horton Road, and flows away from the Site. At the time of writing, records of existing private drainage on the Site were not made available, but it is assumed that private drainage is present, to serve the existing office development.

3.4 HISTORIC FLOOD RECORDS

3.4.1 Table 3-1 – 3-1 summarises the flood records obtained through consultation and liaison with the various regulatory bodies and stakeholders contacted in the production of this FRA. Copies of this correspondence can be found in **Appendix B**.

Table 3-1 – Historic Flood Records

Information Source	Flood Records/Details
Environment Agency	The Environment Agency has confirmed that they hold no records of historical flooding at the Site.
London Borough of Hillingdon	LBH confirmed all relevant information was listed on their website and after conducting a review no historic flood information for this site was found. The West London Strategic Flood Risk Assessment mapping does not show any historic flood incidents within the Application Site[4].
Thames Water	Thames Water have confirmed that there have been no incidents of flooding, as a result of surcharging public sewers, at the Site.
Canals and Rivers Trust (CRT)	The Canals and Rivers Trust has confirmed that there are no records of overtopping or breaching of the canal in this area.

[4] West London Strategic Flood Risk Assessment Mapping https://westlondonsfra.london/mapping-tool/

4 CLIMATE CHANGE ALLOWANCES

4.1.1 The NPPF Flood Risk and Coastal Change Planning Practice Guidance (PPG) states that, for commercial developments, it is reasonable to assume a typical lifespan of 50 years.

4.1.2 In February 2016, the Environment Agency released 'Flood Risk Assessments: Climate Change Allowances' guidance to support the NPPF (updated in March 2020). Considering the nature of flood risks to, and arising from the proposed development, it is appropriate to consider the impact of climate change on peak rainfall intensity.

4.1.3 Allowances for peak rainfall intensity will need to inform the drainage design for the proposed development to ensure that it is designed to account for the effects of climate change. The guidance states that FRAs should consider both the central and upper end allowances to understand the range of impacts that may occur because of climate change. Over 50 years, these allowances are considered to be a 20% and 40% increase in peak rainfall intensity respectively, for the Thames River Basin District.

5 OVERVIEW OF FLOOD RISK

5.1 INTRODUCTION

5.1.1 The following section provides an overview of flood risk to the Site, along with flood risk to and from the proposed development. An assessment has been undertaken for each source that could affect the proposed development in accordance with the NPPF Flood Risk and Coastal Change Planning Practice Guidance (PPG).

5.1.2 Flood risks have been qualitatively assessed on the following basis:

- Negligible risk (e.g. coastal flood risk posed to inland areas);
- Very Low risk (e.g. Flood Zone 1 or <0.1% annual probability of flooding from surface water);
- Low risk (e.g. Flood Zone 2 or between 0.1% and 1.0% annual probability of flooding from surface water);
- Medium risk (e.g. Flood Zone 3a or between 1.0% and 3.3% annual probability of flooding from surface water); and
- High risk (e.g. Flood Zone 3b or 3.3% annual probability of flooding from surface water).

5.2 FLOODING FROM COASTAL AND TIDAL SOURCES

5.2.1 Tidal flooding occurs when sea levels rise above the level of the land or beyond the operational level of flood defences.

5.2.2 The Environment Agency's Flood Map for Planning[5], shows that the Site is not in the proximity of a tidal section of watercourse or the coast; consequently, the risk of flooding posed to and from the Site and the proposed development from this source is considered to be Negligible and no mitigation is required.

5.3 FLOODING FROM FLUVIAL SOURCES

5.3.1 Fluvial flooding occurs when flows within watercourses exceed the capacity of the watercourse, causing out of bank flows.

5.3.2 The Environment Agency Flood Map for Planning[5] shows that the Site is wholly located within Flood Zone 1, i.e. land with an annual risk of flooding from rivers of less than 0.1%.

5.3.3 As the Site is not considered to be at risk from fluvial flooding, and this form of flooding will not impact safe access and egress from the Site, no mitigation measures will be required, and the risk of fluvial flooding to and from the proposed development is considered to be Very Low.

5.4 FLOODING FROM PLUVIAL / OVERLAND FLOW SOURCES

5.4.1 During extreme storms, the ground may become saturated, generating greater overland flows. In addition, during these extreme conditions, sewers which carry away surface water may not be able

[5] Environment Agency (2020), Flood Map for Planning, accessed 7th January 2020. Available at: https://flood-map-for-planning.service.gov.uk/

become to accommodate the overland flows, or they may become blocked with debris. All of these contribute to surface water flooding.

5.4.2 The Environment Agency's Risk of Flooding from Surface Water mapping[6], shows most of the site to have a 'very low risk' of surface water flooding, with an annual probability of surface water flooding of less than 0.1%.

5.4.3 Isolated areas of low – high surface water flood risk are present in the centre of the existing car park and are likely to be associated with a low point on Site; and around each of the existing ponds.

5.4.4 Low risk represents an annual probability of surface water flooding of between 0.1% (1 in 1,000) and 1.0% (1 in 100), whilst a medium risk represents an annual probability of surface water flooding of between 1% and 3.3% (1 in 30). High risk represents an annual probability of surface water flooding of greater than 3.3%, and a flood depth of over 900mm.

5.4.5 A low - high risk flow path is present to the south of the Site, and is associated with the Grand Union Canal; however the flow route is confined to the canal itself. A low – high risk area surface water flooding is also present to the north of the Site, along Horton Road, and is considered to be associated with a low point in the topography at approximately 33m AOD. The Environment Agency's Risk of Flooding from Surface Water mapping indicates that flood depths in this location are approximately between 300-900mm. Ground levels in the northern section of the Application Site are sufficiently above this surface water flood depth at 34.2m AOD.

5.4.1 Therefore, the risk of flooding from overland flow sources to the Application Site (pre-development) is considered to be low.

5.4.2 By developing the Application Site, the risk of pluvial / overland flows from the proposed development could increase. This is due to an increase in impermeable surfaces covering the Application Site, which would result in greater volumes and rates of surface water discharging from the Application Site.

5.4.3 Prior to the implementation of a Surface Water Drainage Strategy (SWDS) the risk of the proposed development exacerbating flood risk from pluvial / overland flow flooding to neighbouring property is considered to be Medium.

5.4.4 The SWDS for the proposed development, a summary of which is provided in **Section 8,** will incorporate sufficient attenuation to restrict run-off from the development to Greenfield runoff rates, in line with national and local policy requirements (refer to RPS Report No. PPEWL-RPS-XX-SI-XX-CA-C-0300. The SWDS will therefore mitigate the potential for the proposed development to exacerbate flood risk as a result of pluvial / overland flow sources. Therefore, the risk of the proposed development increasing flood risk from this source to the (post-development) Site is considered to be Low.

[6] Environment Agency (2020), Long Term Flood Risk, accessed 7th January 2020. Available at https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

5.5 FLOODING FROM GROUNDWATER SOURCES

5.5.1 Groundwater flooding occurs when water stored below ground reaches the surface. It is commonly associated with porous underlying geology, such as chalk, sands and gravels.

5.5.2 The Site is underlain by bedrock of London Clay Formation (Clay, Silt and Sand). Superficial deposits within the site are predominately Lynch Hill Gravel Member – Sand and Gravel. However, Langley Silt Member – Clay and Silt can also be found towards the south east of the Site.

5.5.3 The aquifer designation of the bedrock beneath the Site is classified as 'unproductive' strata. This means that the bedrock is considered to have a low permeability and has negligible significance for water supply or river base flow. The London Clay Formation is also classified as "rocks with essentially no groundwater" by the Environment Agency.

5.5.4 The aquifer designation of the superficial deposits beneath the Site, however, is a 'Principal Aquifer'. These are defined by the Environment Agency as '*layers of rock or drift deposits that have high intergranular and/or fracture permeability, meaning they usually provide a high level of water storage'.*

5.5.5 The results of the monitoring shows that groundwater is confined to the shallow superficial deposits by the impermeable nature of the London Clay Formation beneath. Groundwater flood risk at the Site is therefore derived from the interconnected superficial deposits at the Site and in the vicinity.

5.5.6 The risk of flooding from this source is considered to be Medium, given the shallow groundwater levels encountered during monitoring, and the presence of the permeable superficial deposits.

5.5.7 The proposed development should be designed to ensure minimal risk of groundwater interference. Appropriate construction techniques and mitigation measures should effectively manage the potential groundwater flood risk. Basements and underground car parks are not proposed as part of the proposed development. Should any below ground works be proposed at the Site, re-evaluation of the risk would be required.

5.5.8 During the groundwater monitoring undertaken during February 2019, groundwater was encountered at shallow levels across the Site, in 11 boreholes and window samples. Groundwater contour mapping included within the report indicates a dominant flow direction towards the south of the Site but suggests that there is no hydraulic connectivity between the canal and the Site.

5.5.9 The risk of the proposed development increasing flood risk from this source to the Site is considered to be Low, however a recommendation is made within the Geo-environmental report[2] that *'further groundwater level data is needed to fully establish the hydrogeology at the Site'*.

5.6 FLOODING FROM SEWER AND DRAINAGE INFRASTRUCTURE SOURCES

5.6.1 Historic flood records provided by Thames Water confirm that there have been no known incidents of flooding at the Site as a result of surcharging of public sewers.

5.6.2 The West London SFRA interactive mapping indicates the Site is within an area with no records of Thames Water Sewer flooding (based on 2017 data). In addition, there are very few sewers within close proximity to the Site. Little information is known, however, about any presence or condition of any private drainage at the Site, which may also pose a flood risk.

5.6.3 Site runoff is believed to drain via a private on-site network into the Thames Water surface water sewer located in the south east of the Site, before discharging into the Grand Union Canal. It is proposed that the surface water discharge from the proposed development will use the same outfall. The proposed development however will have a SWDS in place to restrict flows to Greenfield runoff rates and will be designed to accommodate the 1% AEP event plus 40% climate change allowance.

5.6.4 The risk to the existing Site and of the proposed development exacerbating flood risk to neighbouring property once a drainage scheme has been implemented is considered to be Low.

5.7 FLOODING FROM ARTIFICIAL SOURCES

5.7.1 The Environment Agency's Long-Term Flood Risk Mapping[5] indicates that the Site does not lie within the inundation area of any reservoirs.

5.7.2 The southern boundary of the Site is located approximately 20m to the north of the Grand Union Canal. CRT has confirmed that it is not aware of any records of overtopping or breaching in this area. The water level of the canal is between 29.3 and 29.5 mAOD. The ground level at the southern end of the Site is approximately 2 - 3m higher than this level and therefore, the flood risk from this source to the site is considered to be Low.

6 SEQUENTIAL AND EXCEPTION TEST

6.1 INTRODUCTION

6.1.1 The purpose of the NPPF Sequential Test is to ensure that land use planning takes due regard of flood risks, to ensure that areas at low or no risk of flooding are developed in preference to areas at higher risk.

6.2 VULNERABILITY CLASSIFICATION

6.2.1 Vulnerability classifications are defined within Table 3 of the PPG Flood Risk and Coastal Change. The purpose of the vulnerability classification is to identify appropriate land use activities relative to the level of flood risk.

6.2.2 Within Table 2 (Flood Risk Vulnerability Classification) of the NPPF Planning Practice Guidance, the proposed development is classified as '*Less Vulnerable'* as the site will consist of commercial development and office space.

6.3 FLOOD ZONE DEFINITION

6.3.1 According to the Environment Agency's *Flood Map for Planning*, the proposed development is located wholly within Flood Zone 1.

6.4 COMPATIBILITY TEST

6.4.1 The Flood Risk and Coastal Change PPG identifies different land use vulnerabilities that are appropriate within each of the Flood Maps for Planning flood risk classifications. As can be seen in **Table 6-1**, the proposed development (Less Vulnerable commercial development) is considered appropriate in Flood Zone 1. As a result, the Sequential Test is considered to be satisfied and the Exception Test is not required.

Table 6-1 - Flood risk and vulnerability and flood zone compatibility (PPG Table 3)

Flood Zone	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	Development is appropriate	Development is appropriate	Development is appropriate	Development is appropriate	Development is appropriate
Zone 2	Development is appropriate	Exception test required	Development is appropriate	Development is appropriate	Development is appropriate
Zone 3A	Exception test required	Development should not be permitted	Exception test required	Development is appropriate	Development is appropriate
Zone 3B	Exception test required	Development should not be permitted	Development should not be permitted	Development should not be permitted	Development is appropriate

7 FLOOD RISK MANAGEMENT MEASURES

7.1 BRIEF CONSIDERATIONS

7.1.1 Following a review of the flood risks to and arising from the proposed development, the following section discusses the mitigation measures necessary to ensure the proposed development remains safe over its lifetime and does not exacerbate flood risk to neighbouring property (including allowances for the effects of climate change).

7.2 MITIGATION MEASURES

POST DEVELOPMENT FLOOD MITIGATION

7.2.1 The risk of the proposed development exacerbating flood risks from tidal / coastal, fluvial, sewer and drainage infrastructure and artificial sources to neighbouring properties is assessed to be Negligible to Low. Therefore, no measures are considered necessary to mitigate against these sources.

Groundwater Flood Risk Management

7.2.2 The risk of flooding from this source is considered to be Medium, given the shallow groundwater levels encountered during monitoring, and the presence of the permeable superficial deposits.

7.2.3 The proposed development should be designed with minimal risk of groundwater interference. Appropriate construction techniques and mitigation measures should effectively manage the potential groundwater flood risk. Basements and underground car parks are not proposed as part of the proposed development. Should any below ground works be proposed at the Site, re-evaluation of the risks would be required.

Surface Water / Pluvial Flood Risk Management

7.2.4 Prior to the implementation of a SWDS, the risk of the proposed development exacerbating flood risk from pluvial / overland flow flooding to neighbouring property is considered to be Medium.

7.2.5 The SWDS proposed by RPS Group demonstrates that the proposed development can be drained using SuDS techniques for events up to the 1% annual probability storm event, including an allowance for climate change (40% increase on peak rainfall intensity).

7.2.6 In consideration of the drainage strategy presented by RPS, the risk of the proposed development exacerbating flood risks from pluvial / overland sources is considered to be Low.

FINISHED FLOOR LEVELS

7.2.7 Finished floor levels are presented on RPS Group Drawing No. PPWLE-RPS-SI-XX-DR-C-1600 (refer to **Appendix C-1**) where the proposed finished floor levels have been set a minimum of 150mm above external finished levels.

7.2.8 Finished site levels should be engineered, where possible, to prevent ponding. Gradients of external areas should be designed to fall away from dwellings such that overland flow routes resulting from events exceeding design events will follow the path of least resistance and be channelled away from proposed and existing properties. The potential accumulation of standing water will therefore be minimised and thus not pose a significant risk.

SAFE ACCESS AND EGRESS

7.2.9 Safe access and egress will be provided via Ironbridge Road North which bounds the west of the Application Site.

8 SURFACE WATER DRAINAGE STRATEGY

8.1 SUMMARY OF SURFACE WATER DRAINAGE STRATEGY

8.1.1 The proposed SWDS has been prepared by RPS Group as a separate document (refer to Report No. PPWLE-RPS-XX-XX-RP-C-0300) and it should be read in conjunction with this FRA. It is to be noted that WSP has not undertaken a detailed technical review of the drainage strategy, however this section provides a brief summary of the strategy report.

8.1.2 The strategy states that the existing site is believed to drain via a private network into the existing onsite Thames Water surface water sewer at manhole 6902 which is located in the south east corner of the Site, before discharging to Grand Union Canal.

8.1.3 Surface water run-off from the proposed development will be restricted to a greenfield runoff rate of 2 l/s/ha. The total discharge rate from both proposed units is 12.5 l/s.

8.1.4 Attenuation will be provided in the form of below ground attenuation tanks under each unit before combining into one drain to discharge to the existing Thames Water manhole, with the ultimate discharge point being into the Grand Union Canal via an existing outfall. The strategy states that due to the ground conditions, such as the perched groundwater, infiltration is not considered viable.

8.1.5 The surface water drainage strategy has been designed to accommodate run off from all storms up to and including the 1% AEP with a 40% allowance for climate change.

8.1.6 The strategy also states that any localised flooding will be contained on site. Consequently, neither people nor property would be at risk during an exceedance event.

9 FOUL WATER DRAINAGE STRATEGY

9.1 SUMMARY OF FOUL WATER DRAINAGE STRATEGY

9.1.1 The proposed foul water strategy has been prepared by RPS Group as a separate document (refer to Report No. PPWLE-RPS-XX-XX-RP-C-0300) and it should be read in conjunction with this FRA. It is to be noted that WSP has not undertaken a detailed technical review of the drainage strategy, however this section provides a brief summary of the strategy report.

9.1.2 The strategy states that the nearest connection for foul drainage is identified as a Thames Water manhole reference no. 1305 situated 400m to the west of the site.

9.1.3 The surrounding topography does not allow for a gravity connection, therefore a packaged pump station is required to pump flows to the existing Thames Water manhole.

9.1.4 The strategy states that peak foul flows from the proposed development will not exceed 3.7 l/s.

10 CONCLUSIONS

10.1.1 This Flood Risk Assessment has been prepared on behalf of Prologis UK Ltd. to support a full planning application for the redevelopment of the former GSK site, Stockley Park, Hillingdon, to include two new industrial units, providing industrial floorspace and ancillary offices with associated parking, access arrangements, landscaping and infrastructure.

10.1.2 The existing 6.3 ha site currently comprises three commercial buildings with associated parking, occupied by the pharmaceutical company GSK.

10.1.3 Stakeholder consultation was undertaken as part of this FRA with the London Borough of Hillingdon, as the LLFA, the Environment Agency, Thames Water and the Canals and Rivers Trust. The London Borough of Hillingdon, Environment Agency, Thames Water and the Canals and Rivers Trust have all confirmed they have no records of flooding at the Site.

10.1.4 Flood risk to the proposed development from coastal / tidal, fluvial, sewage & drainage infrastructure and artificial sources is assessed to be negligible to low and no specific flood mitigation measures are required to manage the risks from these sources.

10.1.5 Flood risk to the proposed development from groundwater sources is considered to be Medium. To mitigate the risk of groundwater flooding at the Site, it is recommended that the proposed development should be designed with minimal risk of groundwater interference, including appropriate construction techniques and mitigation measures where necessary. Basements and underground car parks are not proposed as part of the proposed development. Should any below ground works be proposed at the Site, however, re-evaluation of the risks would be required.

10.1.6 The risk of flooding from pluvial sources to the Application Site is classified as low, however by developing the Application Site, the risk of pluvial / overland flows from the proposed development could increase due to an increase in impermeable surfaces. A Surface Water Drainage Strategy (SWDS) is therefore proposed to manage this risk.

10.1.7 The proposed SWDS, prepared by RPS Group, includes two attenuation tanks which have been designed to accommodate events up to the 1% AEP event, including an allowance for climate change (40% increase on peak rainfall intensity). It is proposed that surface water will discharge from the attenuation tanks into the Grand Union Canal to the south of the Site, via an existing Thames Water surface water sewer in the south east corner of the Site.

10.1.8 The strategy states that any localised flooding will be contained on site. Consequently, neither people nor property would be at risk during an exceedance event. In consideration of the presented drainage strategy, the risk of the proposed development exacerbating flood risks from pluvial / overland sources is considered low.

10.1.9 A foul water strategy has also been prepared by RPS Group, where a packaged pump system is proposed as a gravity connection cannot be provided to the nearest Thames Water manhole, 400m west of the Application Site.

10.1.10 Safe and dry access and egress will be provided via the primary access to the site via Ironbridge Road North, to the west of the Site.

10.1.11 The Flood Risk Assessment and proposed mitigation measures show that the proposed development, and its users, will be safe from all sources of flood risk over its lifetime. Proposals for the site are therefore considered to be acceptable in terms of the requirements of the NPPF.

Appendix A

LOCATION DRAWINGS

Appendix A.1

LOCATION PLAN

507000
507500
508000
180500
180000
N
Horton Road
Grand Unio
0 100 200 300 400 500 600 m

KEY:
- Indicative Site Boundary
- Site Location

REV	DATE	DRW	DESCRIPTION	CHK	APP
A	29/10/19	GL	FIRST ISSUE	AF	SK

STATUS: FOR INFORMATION ONLY

Mountbatten House, Basing View,
Basingstoke, HANTS, RG21 4HJ
Tel: +44 (0) 1256 318 800
Fax: +44 (0) 1256 318 70
www.wsp.com

CLIENT: PROLOGIS UK LTD.

ARCHITECT: -

PROJECT: PROLOGIS PARK EXPANSION LAND

TITLE: SITE LOCATION PLAN

DRAWN:	CHECKED:	APPROVED:

QGIS FILE:	SCALE @A3:	DATE:
62215-LOC-001.qgz	1:6000	30/10/19

PROJECT No:	DRAWING No:	REV:
70062215	62215-LOC-001	A

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Appendix A.2

FLOOD MAP PACK

FLOOD RISK PACK

Client:
Prologis UK LTD.

Project Reference:
70062215 - Prologis Park Expansion Land

Site Reference:
Prologis Park Expansion Land

Site Location
507570, 180117

Site Area:
6.01 hectares

Map Pack Scale:
1:10,000

CONTENTS:

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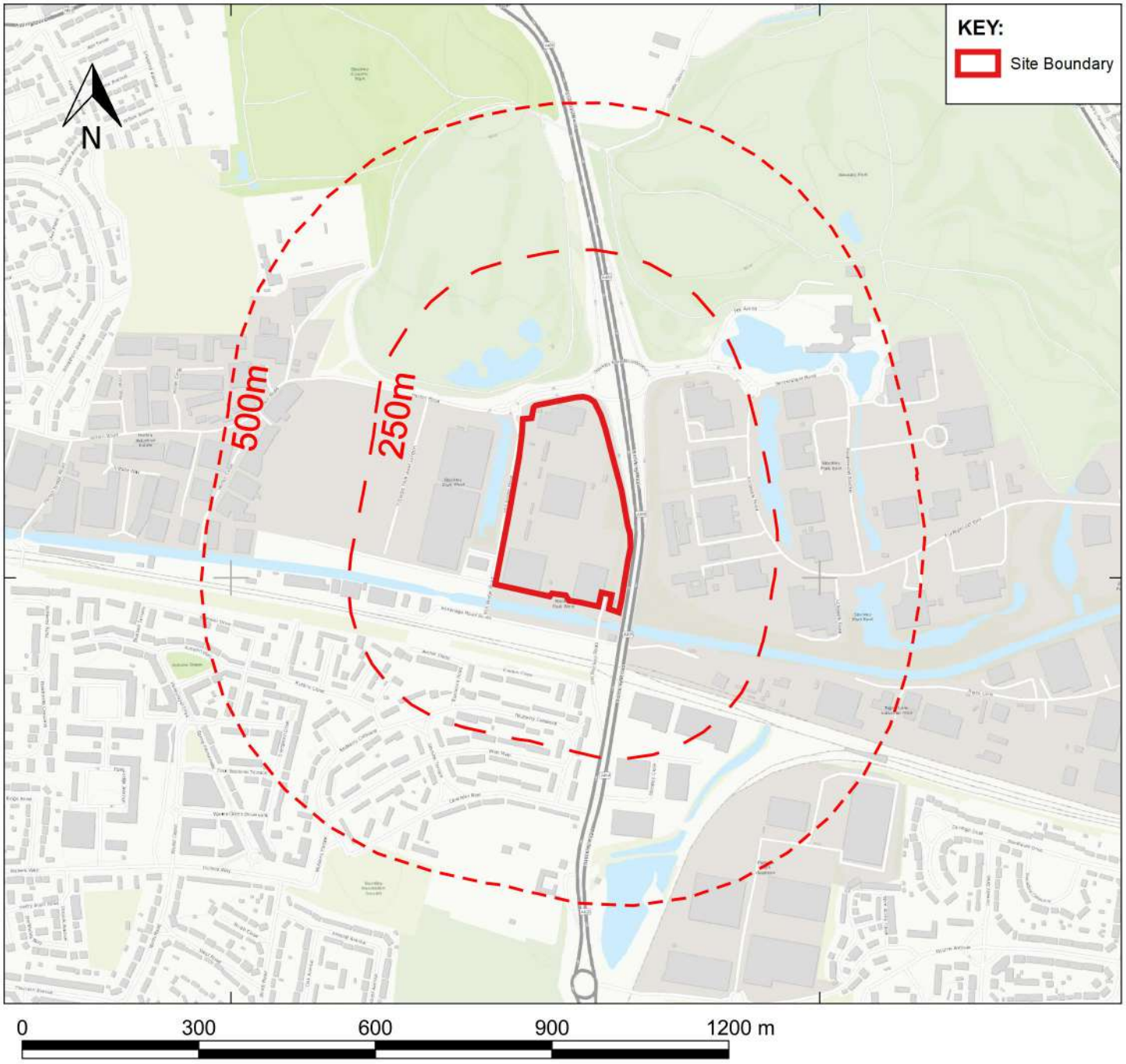
SITE LOCATION



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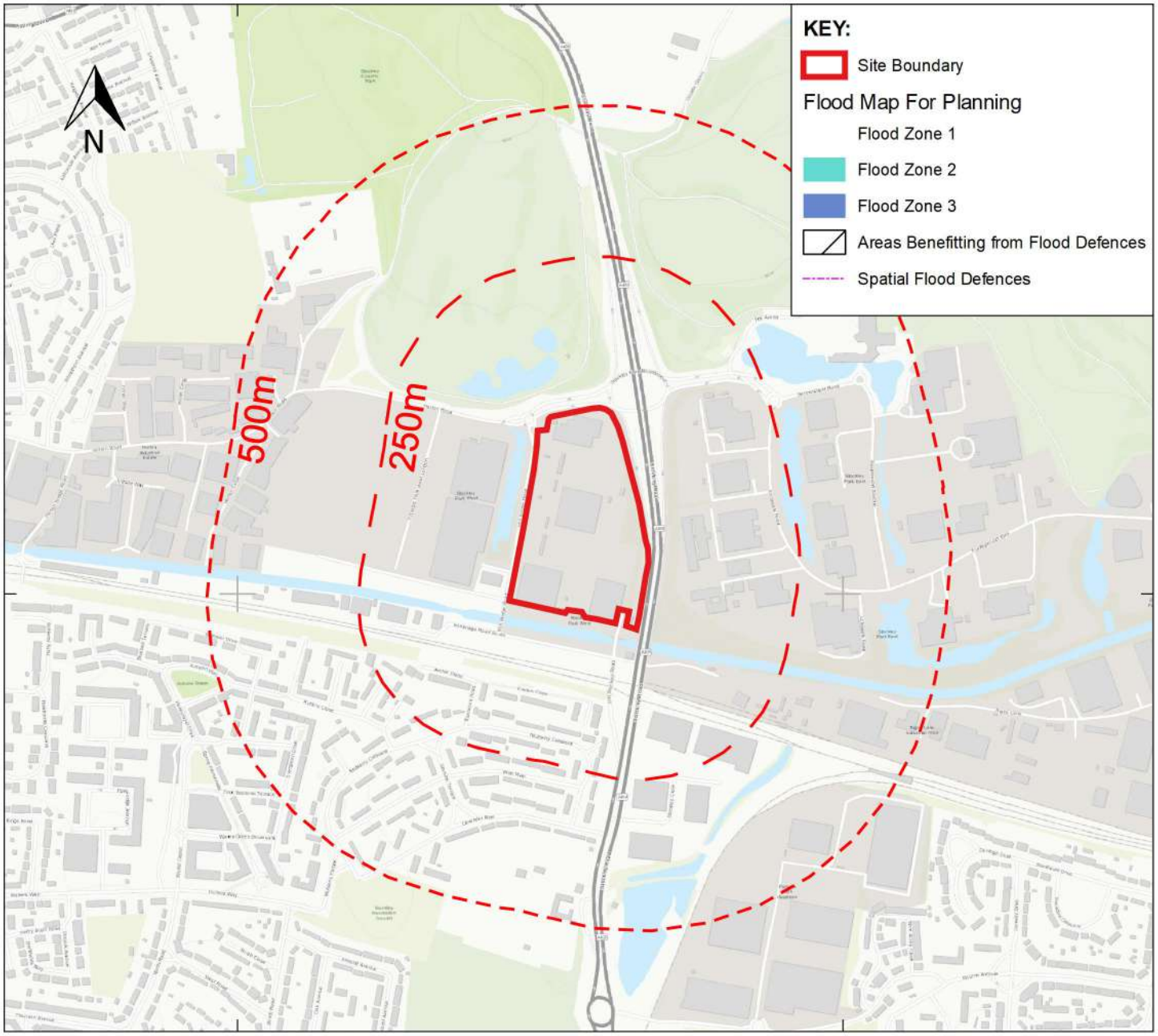
ENVIRONMENT AGENCY FLOOD MAP FOR PLANNING



Flood zone maps are modelled using local and national river and sea data. This information provides an indication of the likelihood of flooding and is intended for planning use only.

Flood Zone 1 - Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3).

Flood Zone 2 - Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)

Flood Zone 3 - Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)

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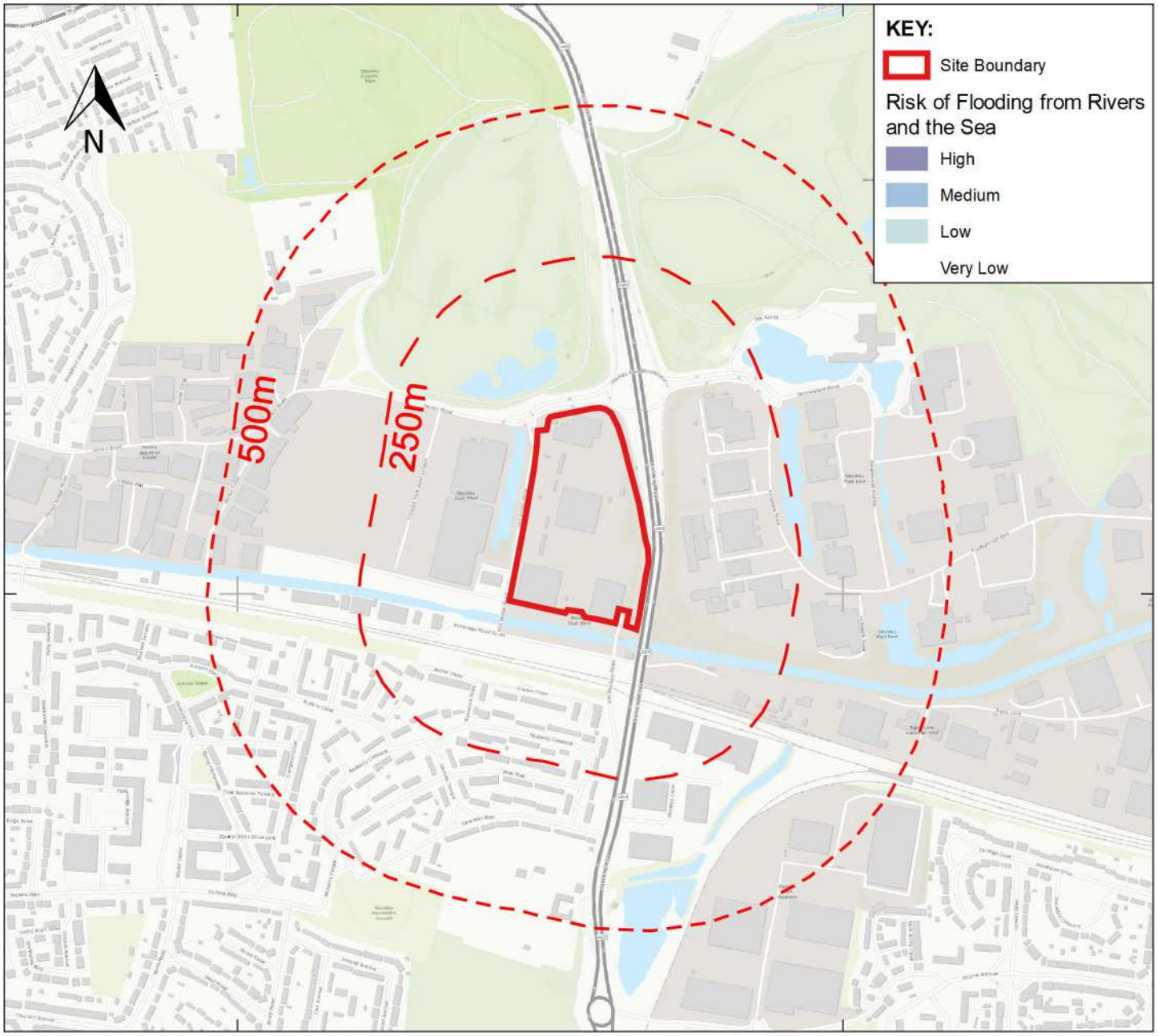
ENVIRONMENT AGENCY RISK OF FLOODING FROM RIVERS AND THE SEA



High risk means that each year this area has a chance of flooding of greater than 3.3%.

Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%.

Very low risk means that each year this area has a chance of flooding of less than 0.1%.

This takes into account the effect of any flood defences in the area. These defences reduce but do not completely stop the chance of flooding as they can be overtopped, or fail.

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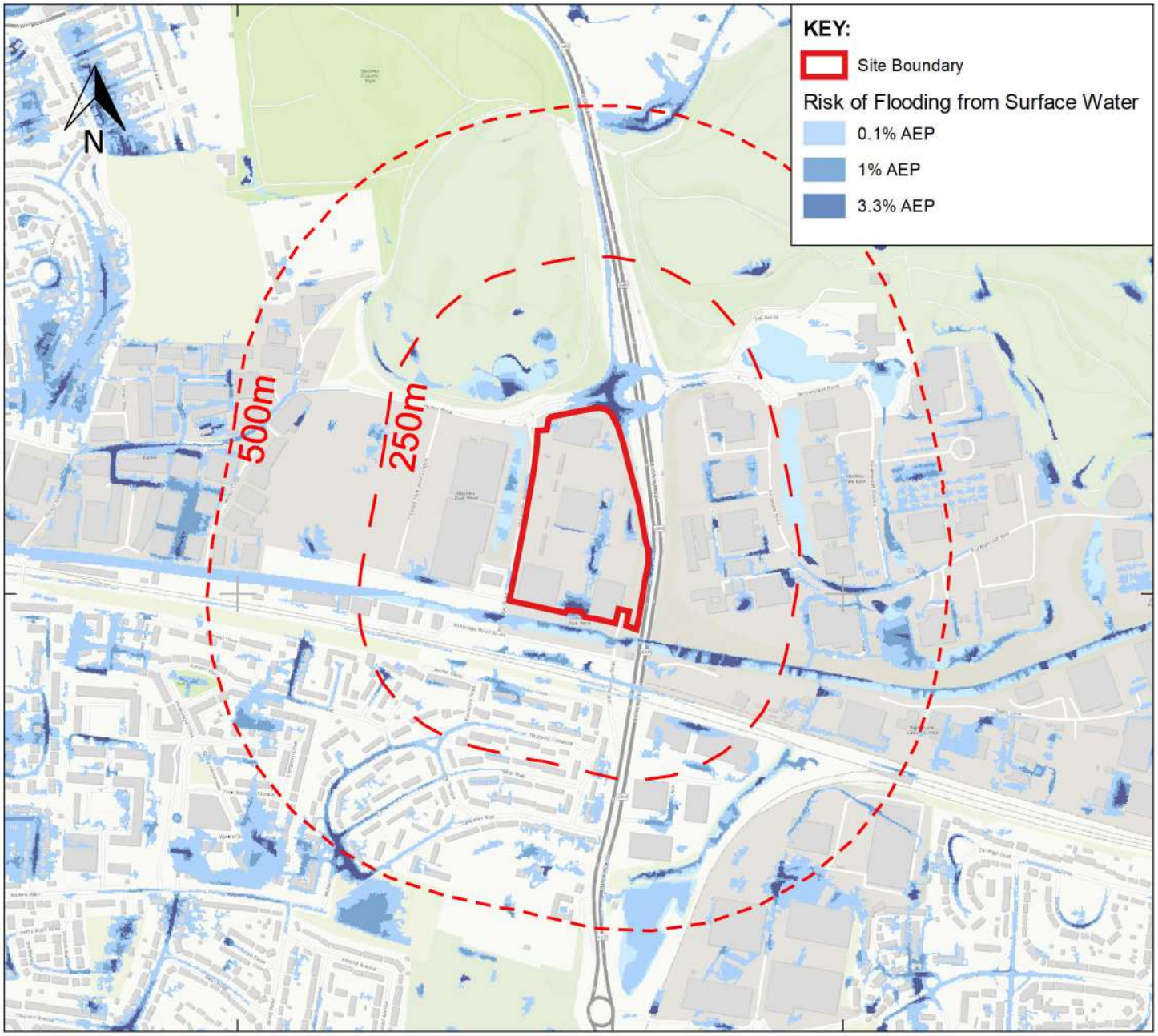
ENVIRONMENT AGENCY RISK OF FLOODING FROM SURFACE WATER



High risk means that each year this area has a chance of flooding of greater than 3.3%.

Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%.

Very low risk means that each year this area has a chance of flooding of less than 0.1%.

Flooding from surface water is difficult to predict as rainfall location and volume are difficult to forecast. In addition, local features can greatly affect the chance and severity of flooding.

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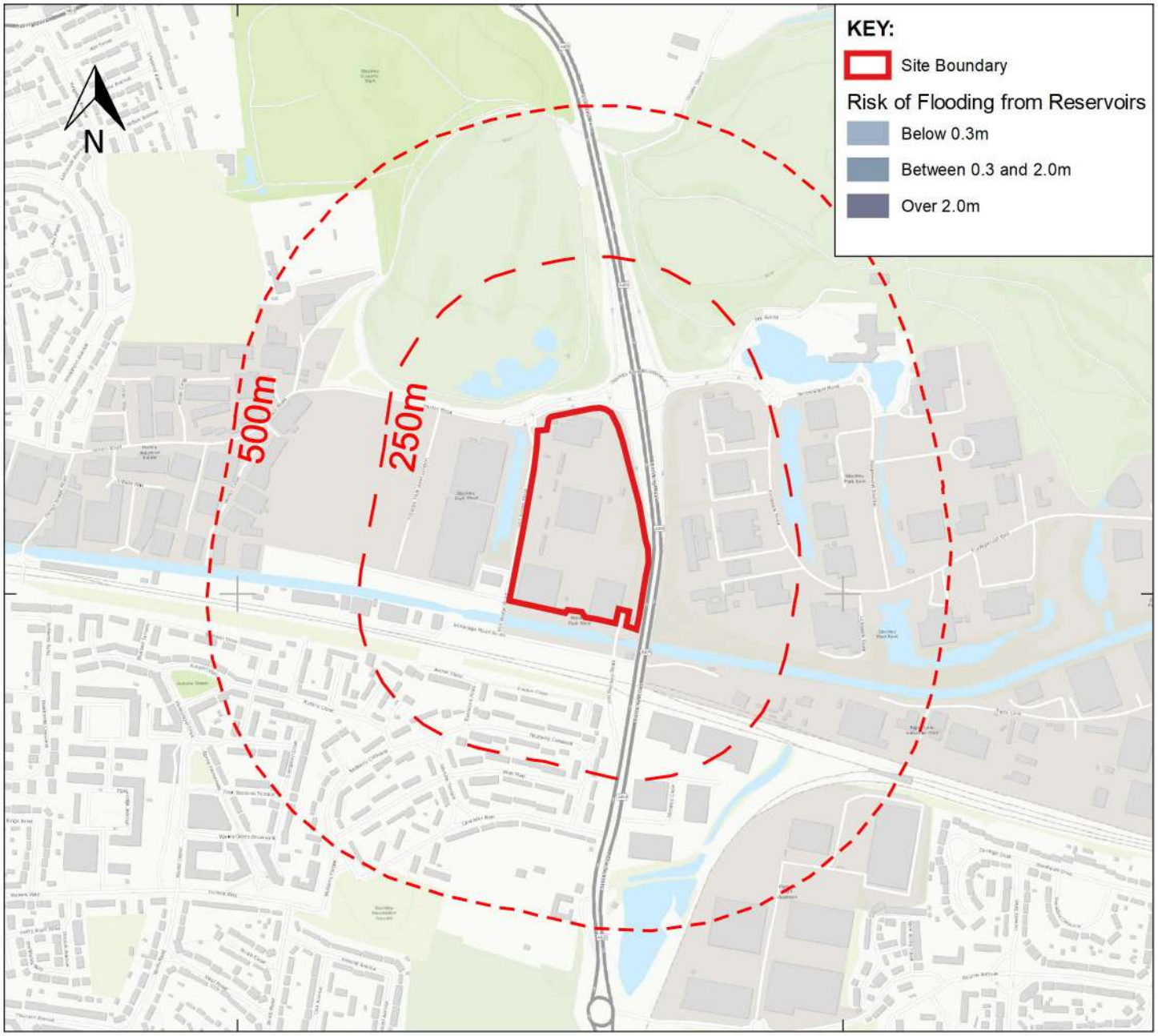
ENVIRONMENT AGENCY RISK OF FLOODING FROM RESERVOIRS



If a location is at risk, flooding from reservoirs is extremely unlikely. There has been no loss of life in the UK from reservoir flooding since 1925.

An area is considered at risk if peoples' lives could be threatened by an uncontrolled release of water from a reservoir.

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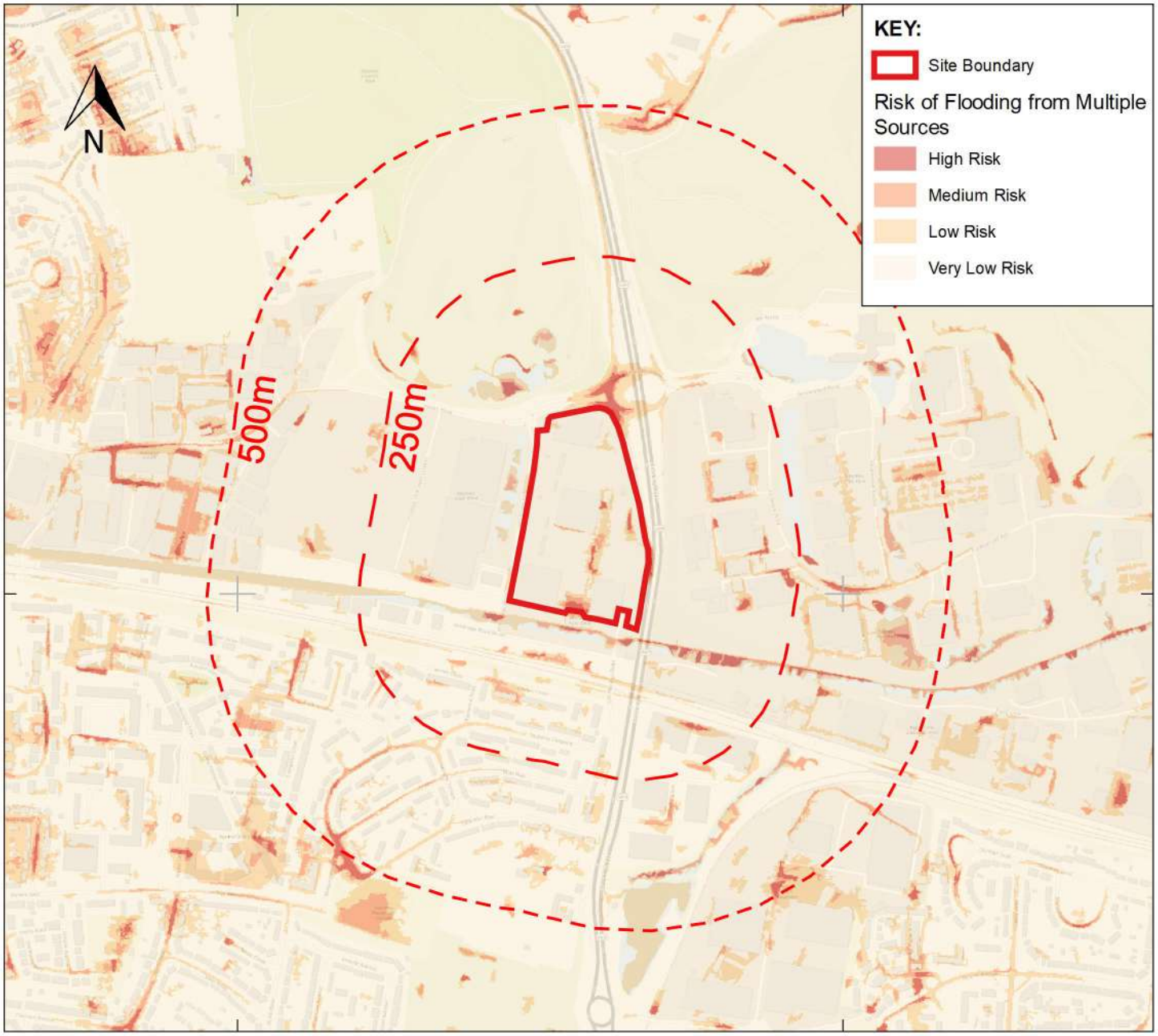
ENVIRONMENT AGENCY RISK OF FLOODING FROM MULTIPLE SOURCES



High risk means that each year this area has a chance of flooding of greater than 3.3%.

Medium risk means that each year this area has a chance of flooding of between 1% and 3.3%.

Low risk means that each year this area has a chance of flooding of between 0.1% and 1%.

Very low risk means that each year this area has a chance of flooding of less than 0.1%.

This dataset is not suitable for identifying whether an individual property will flood. The Risk of Flooding from Multiple Sources (RoFMS) information is a national scale assessment. It gives an indication of what areas of land may be at risk of flooding from more than one source. This first version of the assessment considers flooding from rivers, the sea and surface water.

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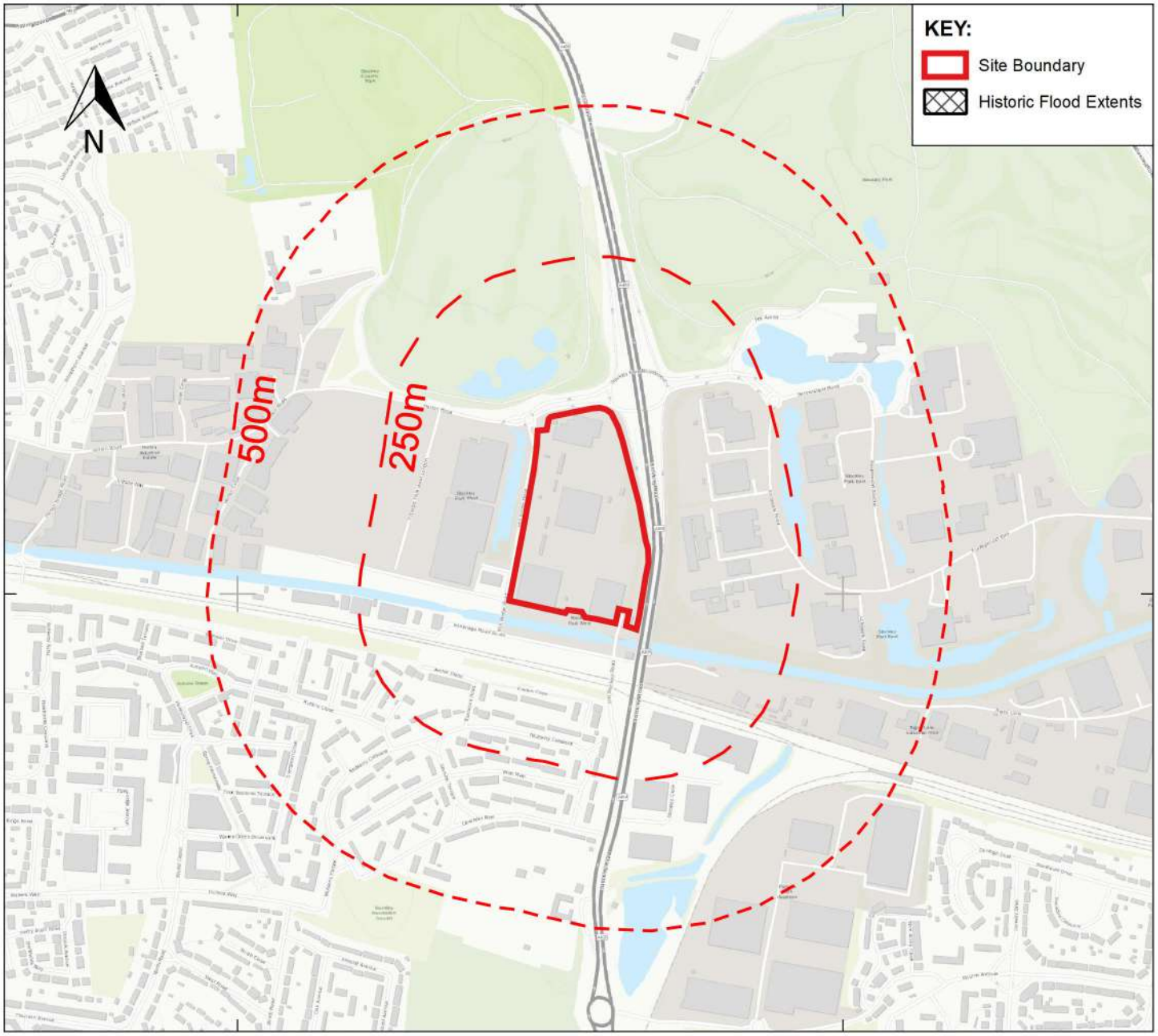
ENVIRONMENT AGENCY HISTORIC FLOOD MAP



The Historic Flood Map is a GIS layer showing the maximum extent of all individual Recorded Flood Outlines from river, the sea and groundwater springs and shows areas of land that have previously been subject to flooding in England. Records began in 1946 when predecessor bodies to the Environment Agency started collecting detailed information about flooding incidents, although limited details may be held about flooding incidents prior to this date.

The absence of coverage by the Historic Flood Map for an area does not mean that the area has never flooded, only that we do not currently have records of flooding in this area. It is also possible that the pattern of flooding in this area has changed and that this area would now flood under different circumstances. The Historic Flood Map will take into account of the presence of defences, structures, and other infrastructure where they existed at the time of flooding. It will include flood extents that may have been affected by overtopping, breaches or blockages. Flooding shown to the land and does not necessarily indicate that properties were flooded internally.

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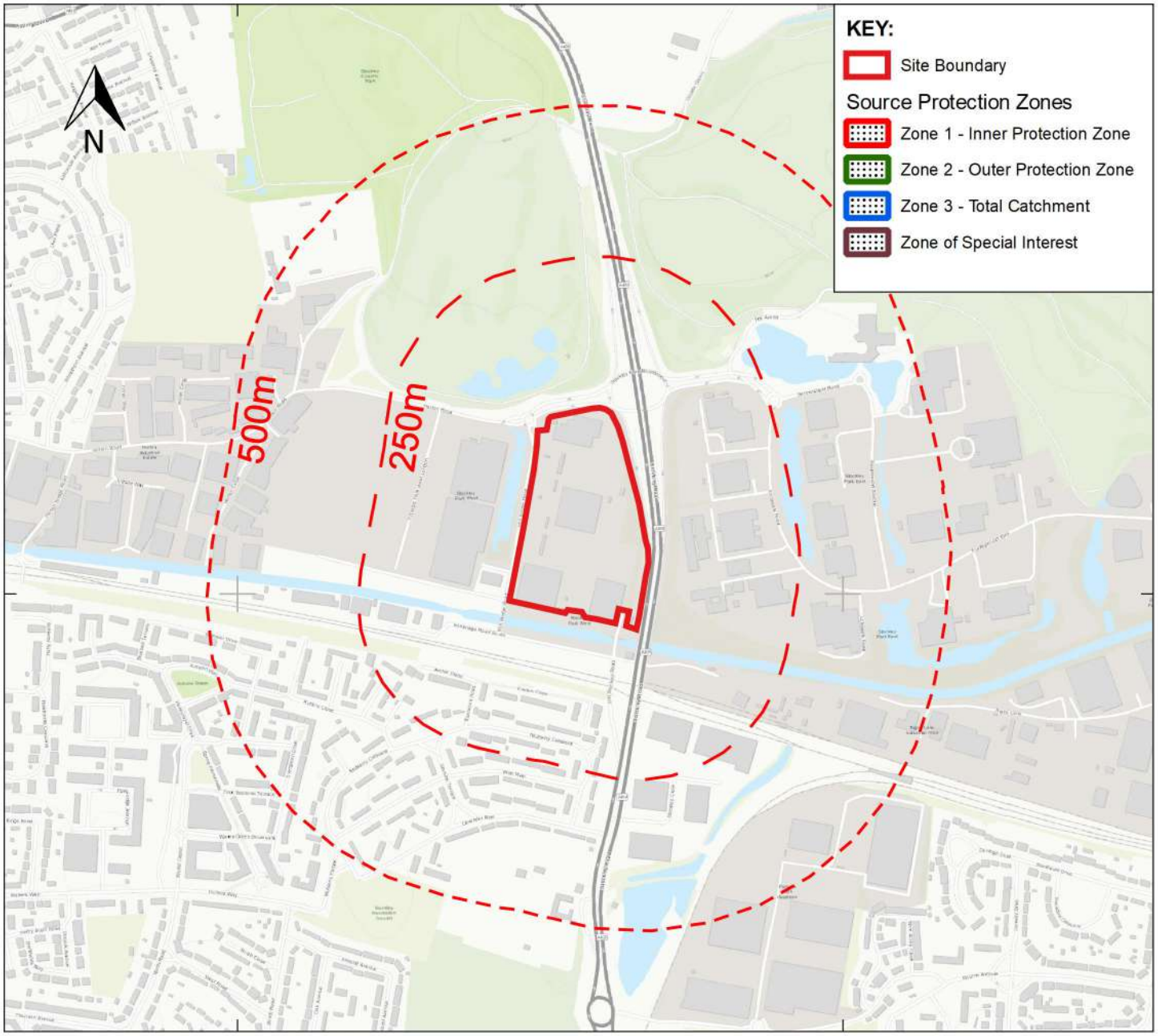
ENVIRONMENT AGENCY SOURCE PROTECTION ZONES



Inner zone (Zone 1) - Defined as the 50 day travel time from any point below the water table to the source. This zone has a minimum radius of 50 metres;

Outer zone (Zone 2) - Defined by a 400 day travel time from a point below the water table. The previous methodology gave an option to define SPZ2 as the minimum recharge area required to support 25 per cent of the protected yield. This option is no longer available in defining new SPZs and instead this zone has a minimum radius of 250 or 500 metres around the source, depending on the size of the abstraction;

Total catchment (Zone 3) - Defined as the area around a source within which all groundwater recharge is presumed to be discharged at the source.

Special interest (Zone 4) - A fourth zone SPZ4 or 'Zone of Special Interest' was previously defined for some sources. SPZ4 usually represented a surface water catchment which drains into the aquifer feeding the groundwater supply (i.e. catchment draining to a disappearing stream).

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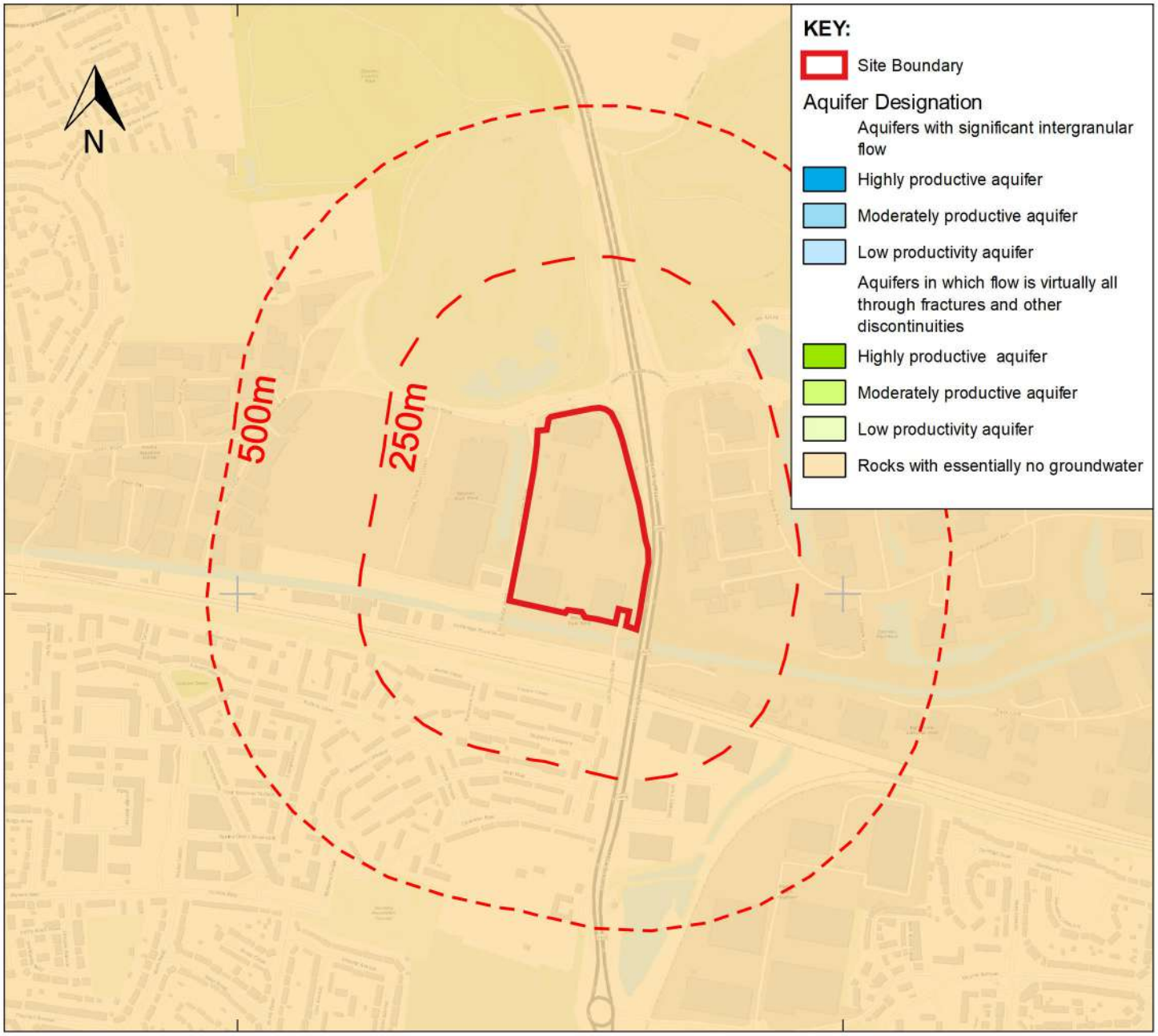
ENVIRONMENT AGENCY 1:625,000 SCALE AQUIFER DESIGNATION



The hydrogeological map indicates aquifer potential in generalised terms using a threefold division of geological formations:

1. those in which intergranular flow in the saturated zone is dominant
2. those in which flow is controlled by fissures or discontinuities
3. less permeable formations including aquifers concealed at depth beneath covering layers

Highly productive aquifers are distinguished from those that are only of local importance or have no significant groundwater. Within each of these classes the strata are grouped together according to age or lithology.

The 1:625 000 scale data may be used as a guide to the aquifers at a regional or national level, but should not be relied on for local information.

Created by: UKGXL031 - 2019-12-18 10:09:29
\\uk.wspgroup.com\central data\Projects\700622xx\70062215 - Prologis Park Expansion Land\03 WIP\EI EIA and Flood Risk\03 Drawings\GIS\Flood Map Pack\70062215 - Prologis Park Expansion Land.qgs

Appendix A.3

GEOLOGICAL DRAWINGS

507000
507500
508000
180500
180000
N
Road
Stockley Park
Green
Horton Road
Grand Un
0 100 200 300 400 500 600 m

KEY:

Indicative Site Boundary

BGS 1:50k Bedrock

London Clay Formation - Clay, Silt And Sand

REV	DATE	DRW	DESCRIPTION	CHK	APP
A	17/12/19	GL	FIRST ISSUE	AF	SK

STATUS: FOR INFORMATION ONLY

Mountbatten House, Basing View,
Basingstoke, HANTS, RG21 4HJ
Tel: +44 (0) 1256 318 800
Fax: +44 (0) 1256 318 70
www.wsp.com

CLIENT: PROLOGIS UK LTD.

ARCHITECT: -

PROJECT: PROLOGIS PARK EXPANSION LAND

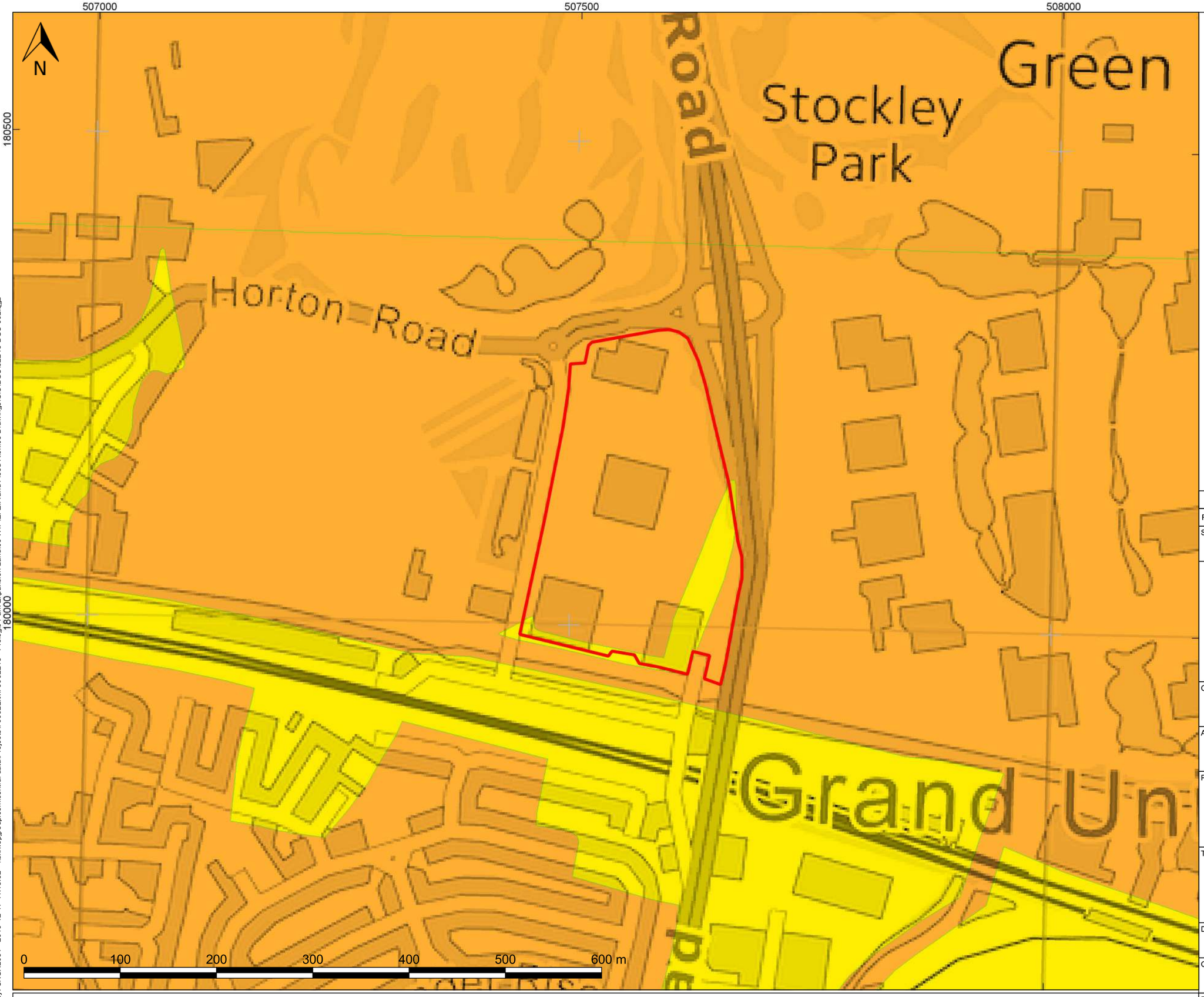
TITLE: BRITISH GEOLOGICAL SURVEY - BEDROCK GEOLOGY

DRAWN:	CHECKED:	APPROVED:

QGIS FILE:	SCALE @A3:	DATE:
62215-BGS-001.qgz	1:6000	17/12/19

PROJECT No:	DRAWING No:	REV:
70062215	62215-BGS-001	A

Created by: UKGXL031 - 2019-12-17 11:03:47 - \\uk.wspgroup.com\central data\Projects\700622xx\700622\5 - Prologis Park Expansion Land\03 WIP\EI EIA and Flood Risk\03 Drawings\GIS\BGS\62215-BGS-001.qgz



KEY:

Indicative Site Boundary

BGS Superficial

Lynch Hill Gravel Member - Sand and Gravel

Langley Silt Member -Clay and Silt

REV	DATE	DRW	DESCRIPTION	CHK	APP
A	17/12/19	GL	FIRST ISSUE	AF	SK

STATUS: FOR INFORMATION ONLY

Mountbatten House, Basing View,
Basingstoke, HANTS, RG21 4HJ
Tel: +44 (0) 1256 318 800
Fax: +44 (0) 1256 318 70
www.wsp.com

CLIENT: PROLOGIS UK LTD.

ARCHITECT: -

PROJECT: PROLOGIS PARK EXPANSION LAND

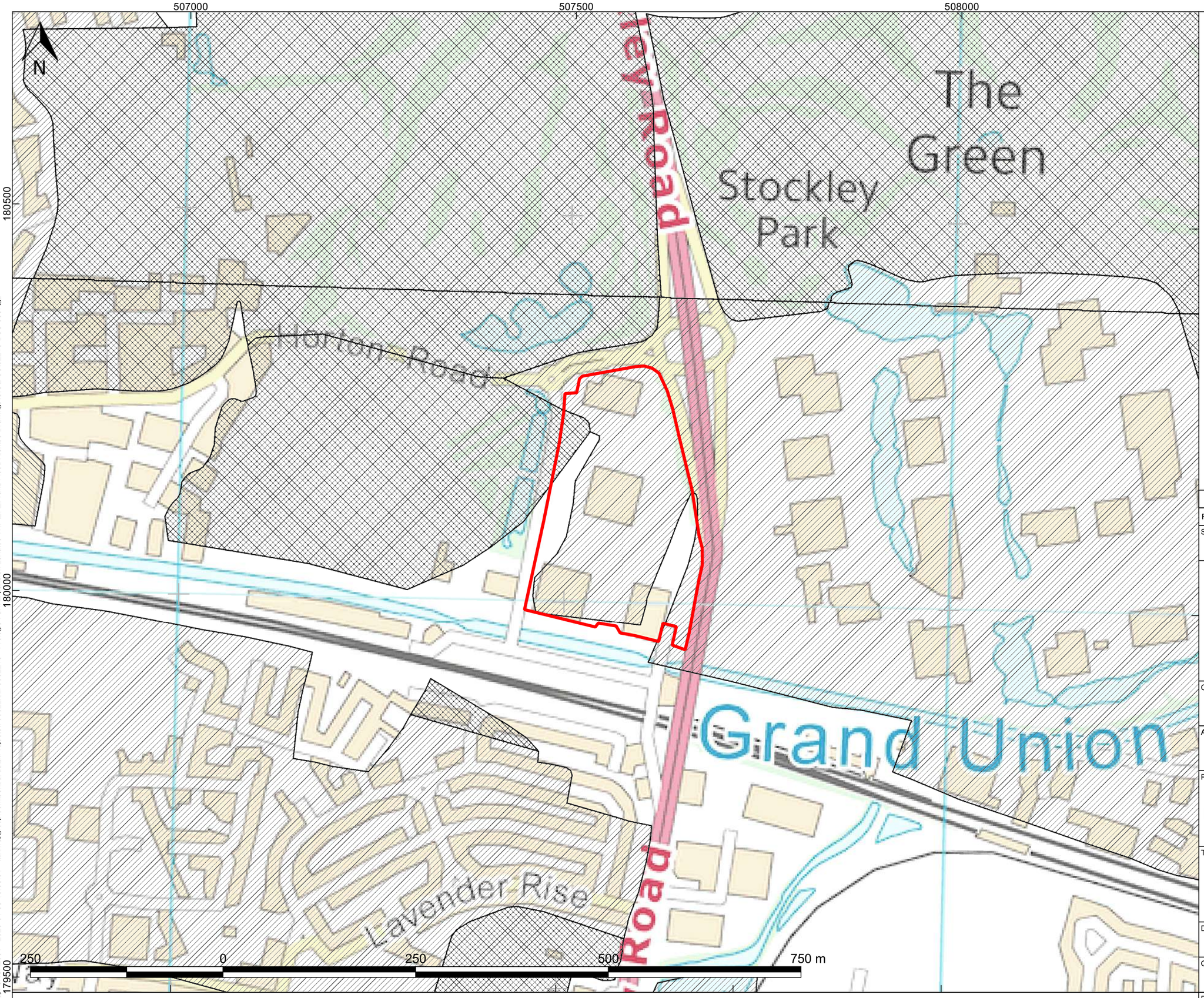
TITLE: BRITISH GEOLOGICAL SURVEY - SUPERFICIAL DEPOSITS

DRAWN:	CHECKED:	APPROVED:

QGIS FILE:	SCALE @A3:	DATE:
62215-BGS-002.qgz	1:6000	17/12/19

PROJECT No:	DRAWING No:	REV:
70062215	62215-BGS-002	A

Created by: UKGXL031 - 2019-12-17 11:18:52 - \\uk.wspgroup.com\central data\Projects\700622xx\700622xx\70062215 - Prologis Park Expansion Land\03 WIP\EI EIA and Flood Risk\03 Drawings\GIS\BGS\62215-BGS-002.qgz



KEY:

- Indicative Site Boundary

BGS 1:50k Artificial Ground

- Infilled Ground - Artificial Deposit
- Worked Ground (Undivided) - Void

REV	DATE	DRW	DESCRIPTION	CHK	APP
A	07/01/20	GL	FIRST ISSUE	AF	BV

STATUS: FOR INFORMATION ONLY

Mountbatten House, Basing View,
Basingstoke, HANTS, RG21 4HJ
Tel: +44 (0) 1256 318 800
Fax: +44 (0) 1256 318 70
www.wsp.com

CLIENT: PROLOGIS UK LTD.

ARCHITECT: -

PROJECT: PROLOGIS PARK EXPANSION LAND

TITLE: BRITISH GEOLOGICAL SURVEY - ARTIFICIAL GROUND

DRAWN:	CHECKED:	APPROVED:

QGIS FILE:	SCALE @A3:	DATE:
62215-BGS-003.qgz	1:7500	08/01/20

PROJECT No:	DRAWING No:	REV:
70062215	62215-BGS-003	A

Created by: UKGXL031 - 2020-01-08 13:53:31 - \\uk.wspgroup.com\central data\Projects\70062xx\70062215 - Prologis Park Expansion Land\03 WIP\EI EIA and Flood Risk\03 Drawings\GIS\BGS\62215-BGS-003.qgz

Appendix B

STAKEHOLDER CONSULTATION

Appendix B.1

ENVIRONMENT AGENCY

From: NET Enquiries <HNLenquiries@environment-agency.gov.uk>
Sent: 21 November 2019 13:44
To: Lamb, Georgie
Subject: HNL149998/AS - Enquiry regarding Prologis Park Expansion Land
Attachments: Stockley Park Groundwater 1992-2019.csv

Dear Georgie

Thank you for your request dated 30 October 2019 to use Environment Agency data.

The information on Flood Zones in the area relating to Prologis Park Expansion Land is as follows:

The property is in an area located within Flood Zone 1 shown on our Flood Map for Planning (Rivers and Sea).

Note - This information relates to the area that the above named site is in and is not specific to the property/proposed development itself.

Because this site does not fall within an area at risk of flooding from rivers or the sea, we do not hold any detailed flood modelling data that would impact your site. As such we are unable to provide a flood risk product.

We do not hold records of historic flood events from rivers and/or the sea affecting the area local to this site. However, please be aware that this does not necessarily mean that flooding has not occurred here in the past, as our records are not comprehensive.

This address is in an area at High risk of surface water flooding.

Following the Flood and Water Management Act 2010, Lead Local Flood Authorities are responsible for the management of groundwater and surface water flooding. They also maintain a register of property flooding incidents. You may want to seek further advice from the LLFA London Borough of Hillingdon who may have further informaiton.

Please find attached groundwater level data for the nearest borehole to your site. The borehole is drilled through the tertiary deposits into the Upper Chalk.

You can view groundwater flooding issues here https://www.gov.uk/government/collections/groundwater-current-status-and-flood-risk

We have no critical drainage areas at this site.

With regards to the Grand Union Canal, you will need to contact the Canal and Rivers Trust directly. They own and maintain canals and hold data on them . They also provide some of their data online here http://data-canalrivertrust.opendata.arcgis.com/

If you have requested this information to help inform a development proposal, then you should note the information on GOV.UK on the use of Environment Agency Information for Flood Risk Assessments

https://www.gov.uk/planning-applications-assessing-flood-risk
https://www.gov.uk/government/publications/pre-planning-application-enquiry-form-preliminary-opinion

You can also view and print surface water flood maps online at: http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=ufmfsw#x=357683&y=355134&scale=2

This information is provided subject to the Open Government Licence, which you should read.

We respond to requests for recorded information that we hold under the Freedom of Information Act 2000 (FOIA) and the associated Environmental Information Regulations 2004 (EIR).

Data Available Online

Many of our flood datasets are available online:

You can view and download flood risk maps from our website at: http://watermaps.environment-agency.gov.uk/wiyby/wiyby.aspx?topic=floodmap#x=357683&y=355134&scale=2

Flood Map For Planning (Flood Zone 2, Flood Zone 3, Flood Storage Areas, Flood Defences, Areas Benefiting from Defences)

Risk of Flooding from Rivers and Sea

Historic Flood Map

Current Flood Warnings

Open data

I hope that we have correctly interpreted your request. If you are not satisfied with our response to your request for information you can contact us within 2 calendar months to ask for our decision to be reviewed.
Kind regards

Annette Smith
Customers and Engagement Officer
Environment Agency, Hertfordshire and North London
Alchemy, Bessemer Road, Welwyn Garden City, Hertfordshire, AL7 1HE
Tel: 0203 025 8975
Int: 58975

My usual working hours are 9.30am to 16.30pm, Tuesdays and Thursdays, and 9.30am to 14.30pm Wednesdays.

From: Lamb, Georgie [mailto:Georgie.Lamb@wsp.com]
Sent: 30 October 2019 16:33
To: Enquiries, Unit <enquiries@environment-agency.gov.uk>
Cc: Hope, Jasmine <Jasmine.Hope@wsp.com>
Subject: 191101/KG13 Prologis Park Expansion Land - Flood Assessment Enquiry

Dear Sir / Madam

Prologis Park Expansion Land
Flood Risk Assessment – Enquiry

We have been instructed by our client to carry out an assessment of flood risk at the above site.

We are writing to request the Environment Agency provide any flood risk and flood defence data and information with respect to the above site and any other pertinent information or opinion regarding development at the application site.

The site is shown to be located within Flood Zone 1. The OS grid reference for the site is 507566, 180118 and the nearest post code is UB11 1BT. Please find enclosed a location map for your reference.

Please could the Environment Agency provide the following information, where available:

1. Please could the Environment Agency provide Product 4 data. We understand that there is no detailed hydraulic model for the site – If this is not correct, please can you provide this as well?
2. Historical records of flooding at or within the vicinity of the site from all sources of flooding. If the Environment Agency does not hold any records, please can you confirm that the site has no record of flooding in the past.
3. Details of any flood defences in the area that might influence flooding at the site / surrounding area.
4. Please could the Environment Agency confirm whether they have any specific water quality requirements for surface water runoff within the site area of Drayton, Uxbridge.
5. Groundwater levels on or within 500m of the site (including details of the strata in which the groundwater level observations are made).
6. Does the Environment Agency have any critical drainage areas that cover the development site and have these been notified to the London Borough of Hillingdon as LLFA?
7. We are aware of the proximity of the site to the Grand Union Canal. Are the Environment Agency able to provide any flood risk information associated with the canal, or any other pertinent information.
8. Any additional flood data the Environment Agency considers useful for the above site.

We trust the above is clear, however, should you have any queries or require any further information from WSP to be able to answer the above queries, please do not hesitate to get in contact.

Kind Regards,

Georgie Lamb
Graduate Engineer

T+ 44 (0)1256 318644

Mountbatten House, Basing View,
Basingstoke, Hampshire,
RG21 4HJ

wsp.com

Appendix B.2

LONDON BOROUGH OF HILLINGDON

From: Victoria Boorman <flooding@hillingdon.gov.uk>

Sent: 03 January 2020 16:16

To: Lamb, Georgie; Planning .

Subject: Re: Prologis Park Expansion Land - Flood Assessment Enquiry

Dear Georgie Lamb

Please refer to the Council website for the queries you raise.

regards

Vicky Boorman

Flood and Water Management Specialist

https://hillingdon.gov.uk/flooding

On Mon, 4 Nov 2019 at 12:03, Planning . <planning@hillingdon.gov.uk> wrote:

> FYI
>
> ---------- Forwarded message ---------
> From: **Lamb, Georgie** <Georgie.Lamb@wsp.com>
> Date: Fri, 1 Nov 2019 at 16:42
> Subject: Prologis Park Expansion Land - Flood Assessment Enquiry
> To: planning@hillingdon.gov.uk <planning@hillingdon.gov.uk>
> Cc: Hope, Jasmine <Jasmine.Hope@wsp.com>
>
> Dear Sir / Madam,
>
> **Prologis Park Expansion Land**
>
> **Flood Risk Assessment – Enquiry**
>
> We have been instructed by our client to carry out an assessment of flood risk at the above site.
>
> We are writing to request any flood risk and flood defence data and information with respect to the above site and any other pertinent information or opinion regarding development at the application site.
>
> From a review of data on the Environment Agency's Website we understand the site lies within Flood Zone 1. The OS grid reference for the site is 507566, 180118 and the nearest post code is UB11 1BT. Please find enclosed a location map for your reference.
>
> Please can you provide us with the following:
>
> Historic records of flooding at the site or in close proximity to the site;
> Details of any flood defence structure at the site or in the surrounding area; and,
> Drainage and water quality requirements (see below).
>
> Please could London Borough of Hillingdon provide advice on how they would expect the Climate Change guidance to be applied with regards to surface water attenuation requirements? Typically, we have been designing attenuation systems for the 100 year + 20%CC event and testing for the 100 year + 40%CC event.

Please could London Borough of Hillingdon provide us with any specific SuDS guidance which is not already available on the website, and confirm whether they have any specific water quality requirements for surface water run off?

In addition, we are aware of the proximity of the site to the Grand Union Canal. Are London Borough of Hillingdon able to provide any flood risk information associated with the canal, or any other pertinent information.

We trust the above to be satisfactory, however, should you have any queries or require any further information from WSP to be able to answer the above queries, please do not hesitate to get in contact.

Kind Regards,

Georgie Lamb

Graduate Engineer

T+ 44 (0)1256 318644

Mountbatten House, Basing View,

Basingstoke, Hampshire,

RG21 4HJ

wsp.com

Appendix B.3

THAMES WATER

Sewer Flooding
History Enquiry

Property Searches

WSP

Basing View

Search address supplied	Glaxo Smithkline Uk Ltd 1-3 Stockley Park Iron Bridge Road Uxbridge UB11 1BT
Your reference	Prologis Park Expansion Land
Our reference	SFH/SFH Standard/2019_4102536
Received date	**31 October 2019**
Search date	**31 October 2019**

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sewer Flooding
History Enquiry

Property Searches

Search address supplied: Glaxo Smithkline Uk Ltd,1-3,Stockley Park,Iron Bridge Road,Uxbridge,UB11 1BT

This search is recommended to check for any sewer flooding in a specific address or area

TWUL, trading as Property Searches, are responsible in respect of the following:-

(i) any negligent or incorrect entry in the records searched;

(ii) any negligent or incorrect interpretation of the records searched;

(iii) and any negligent or incorrect recording of that interpretation in the search report

(iv) compensation payments

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Sewer Flooding
History Enquiry

Thames Water Property Searches

History of Sewer Flooding

Is the requested address or area at risk of flooding due to overloaded public sewers?

The flooding records held by Thames Water indicate that there have been no incidents of flooding in the requested area as a result of surcharging public sewers.

For your guidance:

- A sewer is "overloaded" when the flow from a storm is unable to pass through it due to a permanent problem (e.g. flat gradient, small diameter). Flooding as a result of temporary problems such as blockages, siltation, collapses and equipment or operational failures are excluded.
- "Internal flooding" from public sewers is defined as flooding, which enters a building or passes below a suspended floor. For reporting purposes, buildings are restricted to those normally occupied and used for residential, public, commercial, business or industrial purposes.
- "At Risk" properties are those that the water company is required to include in the Regulatory Register that is presented annually to the Director General of Water Services. These are defined as properties that have suffered, or are likely to suffer, internal flooding from public foul, combined or surface water sewers due to overloading of the sewerage system more frequently than the relevant reference period (either once or twice in ten years) as determined by the Company's reporting procedure.
- Flooding as a result of storm events proven to be exceptional and beyond the reference period of one in ten years are not included on the At Risk Register.
- Properties may be at risk of flooding but not included on the Register where flooding incidents have not been reported to the Company.
- Public Sewers are defined as those for which the Company holds statutory responsibility under the Water Industry Act 1991.
- It should be noted that flooding can occur from private sewers and drains which are not the responsibility of the Company. This report excludes flooding from private sewers and drains and the Company makes no comment upon this matter.
- For further information please contact Thames Water on Tel: 0800 316 9800 or website www.thameswater.co.uk

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

Appendix B.4

CANALS AND RIVERS TRUST

Canal & River Trust

Georgie Lamb
Mountbatten House
Basing View
Basingstoke
Hampshire,
RG21 4HJ

Your Ref

Our Ref GU-208 MW 5/11/19

5th November 2019

RE: FLOOD RISK ASSESSMENT - GU-208 - PROLOGIS PARK, GU11 1BT

Dear Georgie

Further to your e-mail dated 31st October, I have checked our records and I can confirm the following:

- The Canal & River Trust (the Trust) is not aware of any records of overtopping from, or breaches of the waterway where the canal passes this site.
- All the Trust's assets are subject to a regular cycle of inspections.
- This canal adjacent to this site is a 43km long pound bounded by the canal locks Cowley Lock **(E 505141, N 182210)**, Norwood Top Lock **(E 513690, N 179359)** and Hampstead Road Locks **(E 528685, N 184088)**. The controlling weir for the pound is Bulls Weir, located at coordinates **E 510473, N 179146**.
- The height of the controlling weir in this pound is **29.458m AOD**. The normal operating range of the water level in the pound is between +50mm over weir and -150mm under weir; i.e., **29.308m AOD to 29.508m AOD**. There are other flood weirs at different points and different heights in the pound.
- Water is fed manually into the pound via a by-pass sluice at the Cowley Lock

For further advice on flood risk assessments I have included some generic guidance (see appendix A).

Please note that the Canal & River Trust is unable to comment on the flood risk to individual properties or developments and interpretation of the information provided in this letter is your responsibility.

I trust this is satisfactory, however if you do require any further information please do not hesitate to contact me.

Yours sincerely

Mr Michael Wheeler B.Eng(Hons) I.Eng ACIWEM
Senior Water Engineer (South)

Appendix A - Guidance Note for Flood Risk Assessments

The main incidents of uncontrolled loss of water from our waterways are overtopping and breaching as a result of inundation from adjacent water courses, vandalism or structural failure.

Canal & River Trust maintains water levels using reservoirs, feeders and boreholes, and thereafter manages the water by transferring it within the canal system. The level of the water in canals is normally determined predominantly by the level and size of weirs. Water levels in river navigations are affected by the flow in the river and will fluctuate more widely than canals.

When surface water enters our waterways, the level of the water rises. Eventually the water level will reach a point where it discharges from our waterways through control structures. Where the capacity of these control structures is exceeded, overtopping may result.

Breaches which may lead to flooding can occur on our waterways. There can be a number of causes for these including: culvert collapse, animal burrowing and overtopping. Canal & River Trust operates a comprehensive asset management system which enables us to manage the risks of such events occurring.

Breaches occur on average at a rate of three per year over the whole of the Canal & River Trust owned canal network (that's over 2,000 miles of canal).

Appendix C

INFORMATION RECEIVED

Appendix C.1

PROPOSED DEVELOPMENT PLANS

NOTES:

SUBJECT TO STATUTORY CONSENTS

SUBJECT TO SURVEY

BASED ON OS MAP REPRODUCED BY PERMISSION OF CONTROLLER OF HM STATIONARY OFFICE (c) CROWN COPYRIGHT

DO NOT USE ELECTRONIC VERSIONS OF THIS DRAWING TO DETERMINE DIMENSIONS UNLESS SPECIFICALLY AUTHORISED BY MICHAEL SPARKS ASSOCIATES

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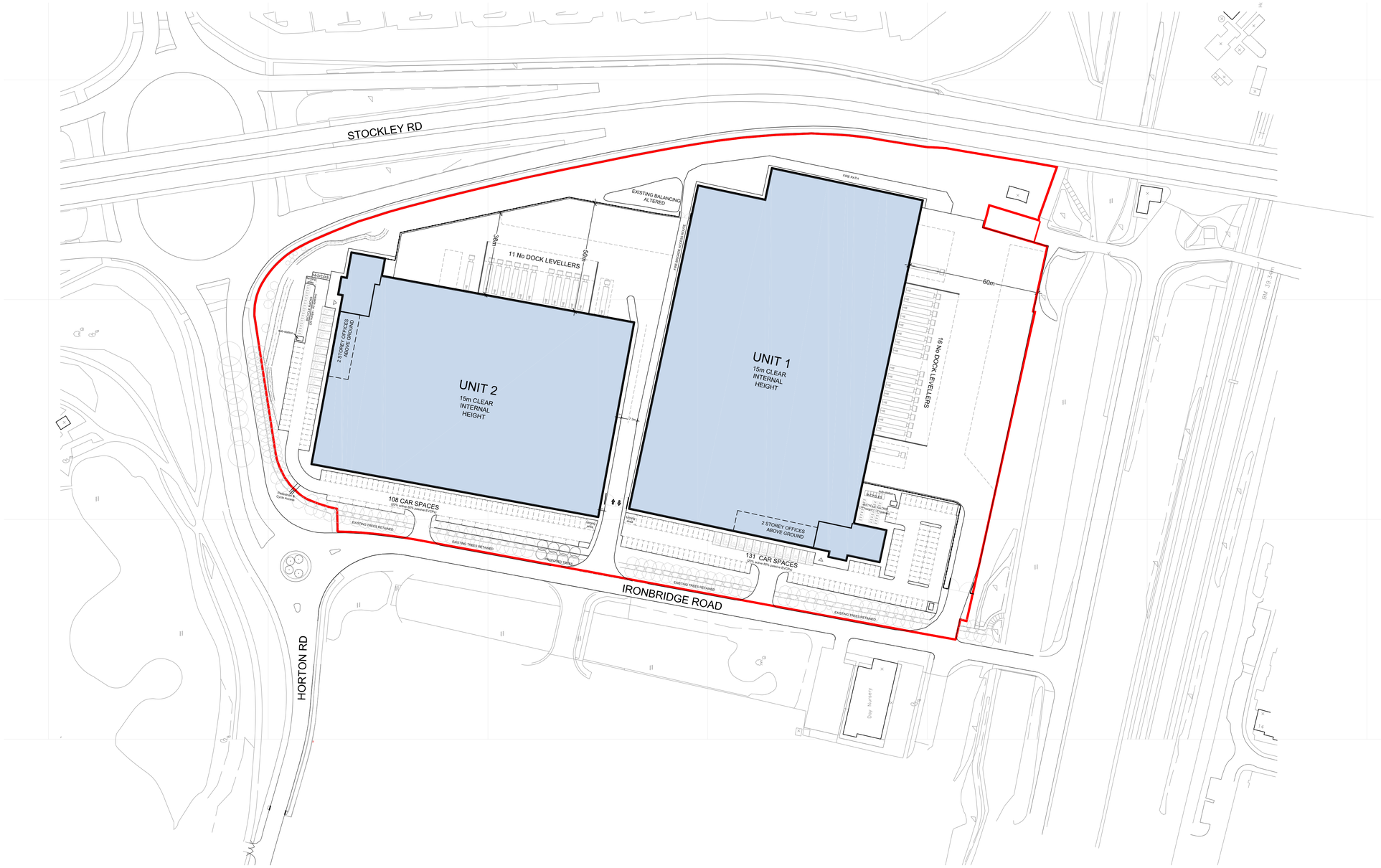
N

BASED ON GREENHATCH SURVEY
REF: 33865_T REV 0
DATED: 24.06.19



01/201 SITE LAYOUT
1:1000

0 25 50 100m

AREA SCHEDULE

GIA

1	sqm	sqft
Unit	15,843	170,535
Offices Gnd	403	4,340
Offices 1st	677	7,285
Offices 2nd	750	8,075
Sub total	**17,673**	**190,235**

2	sqm	sqft
Unit	11,463	123,390
Offices Gnd	387	4,165
Offices 1st	512	5,510
Offices 2nd	592	6,370
Sub total	**12,954**	**139,435**

	sqm	sqft
TOTAL FLOOR AREA	**30,627**	**329,670**

	Ha	acres
SITE AREA	6.321	15.62

REV	DATE	NOTE	DRAW	CHCK
A	23.06.20	Office areas amended.	sd	ss/ms

MICHAEL SPARKS ASSOCIATES
CHARTERED ARCHITECTS
11 PLATO PLACE
ST.DIONIS ROAD
LONDON SW6 4TU
TELEPHONE 020 7736 6162
www.msa-architects.co.uk

PROLOGIS

TITLE
IRONBRIDGE ROAD, HAYES

DRAWING
SITE LAYOUT PLAN

CLIENT
PROLOGIS UK LTD

DATE	SCALE	DRAWN
JUNE 2020	1:1000@A1	PF
	STATUS: PLANNING	CHECKED: MS/GZ/SD

DRAWING NUMBER
30928-PL-201A

NOTES:

SUBJECT TO STATUTORY CONSENTS

SUBJECT TO SURVEY

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IF USING AN ELECTRONIC VERSION OF THIS DRAWING FIGURED DIMENSIONS TAKE PRECEDENCE AND NOTIFY MICHAEL SPARKS ASSOCIATES OF ANY DISCREPANCIES

N

BASED ON GREENHATCH SURVEY
REF: 33865_T REV 0
DATED: 24.06.19

01/83 SITE LAYOUT
1:1000

0 25 50 100m

..	..	..	..	..
REV	DATE	NOTE	DRAW	CHCK

MICHAEL SPARKS ASSOCIATES
CHARTERED ARCHITECTS
11 PLATO PLACE
ST.DIONIS ROAD
LONDON SW6 4TU
TELEPHONE 020 7736 6162
www.msa-architects.co.uk

PROLOGIS

TITLE
IRONBRIDGE ROAD, HAYES

DRAWING
COLOUR SITE LAYOUT PLAN

CLIENT
PROLOGIS UK LTD

DATE	SCALE	DRAWN
MAY 2020	1:1000@A1	PF
	STATUS	CHECKED
	FEASIBILITY	MS/GZ/SD

DRAWING NUMBER
30928-FE-083

NORTH

KEY

EXISTING TREES AND HEDGEROWS TO BE RETAINED
(Refer to the Pre Development Tree Survey for detail)

EXISTING TREES AND HEDGEROWS TO BE REMOVED
(Refer to the Pre Development Tree Survey for detail)

SEMI-MATURE TREE
(*Tree pit size: 2000x2000x1000mm*)
25-30cm stem girth
6.0-7.0m height
2.5m clear stem
Rootballed

EXTRA HEAVY STANDARD TREES
(*Tree pit size: 1500x1500x900mm*)
18-20cm stem girth
4.5-5.5m height
1.8-2.1m clear stem
Rootballed

FEATHERED TREES
2.1-2.4m height
6-8cm stem girth
Well furnished with lateral shoots to the base

PROPOSED FORMAL NATIVE HEDGE
(*300mm depth of topsoil*)
Planted at 450mm centres in a double staggered row. Rows to be 500mm apart

%	Species	Common Name	Supply Size	
	Carpinus betulus #	Hornbeam	1000-1250mm	1+2 B

PROPOSED INDIGENOUS HEDGEROW
(*300mm depth of topsoil*)
Planted at 450mm centres in a double staggered row. Rows to be 500mm apart.

%	Species	Common Name	Size	Age	Root
50%	Acer campestre +	Field maple	400-600mm	1+1	OG
10%	Carpinus betulus #	Hornbeam	400-600mm	1+1	OG
30%	Corylus avellana #	Hazel	400-600mm	1+1	OG
5%	Crataegus monogyna #	Hawthorn	400-600mm	1+1	OG 'B'
5%	Salix caprea #	Goat Willow	400-600mm	1+1	OG

PROPOSED THICKET MIX PLANTING
(*300mm depth of topsoil*)
Where thicket is planted next to a hard surface/kerb/fence, it should be positioned 1m from the edge.

Transplants planted in groups of 7-15 of the same species on a 1.0m grid.

%	Species	Common Name	Supply Size		
20%	Acer campestre +	Field Maple	400-600mm	1+1	OG
35%	Corylus avellana #	Hazel	400-600mm	1+1	OG
5%	Crataegus monogyna #	Hawthorn	400-600mm	1+1	OG 'B'
10%	Frangula alnus #	Alder buckthorn	600-800mm	1+1	B
10%	Ligustrum vulgare #	Privet	400-600mm	1+1	OG
5%	Prunus spinosa #	Blackthorn	400-600mm	1+1	OG
10%	Salix caprea #	Goat Willow	400-600mm	1+1	OG
5%	Ulex europeaus #	Gorse	400-600mm	1+1	OG

PROPOSED SPECIMEN SHRUBS
(*450mm depth of topsoil*)

Species	Supply Size	Pot Size
Amelanchier canadensis	900-1200mm	15L
Mahonia x media 'Winter Sun'	900-1200mm	15L
Viburnum x burkwoodii	900-1200mm	15L

PROPOSED ORNAMENTAL SHRUB PLANTING
(*450mm depth of topsoil*)
Ultimate plant height is above 1m.

Species	Supply Size	Pot Size	Spacing
Cornus alba 'Sibirica'	400-600mm	3L	600mm cts
Cornus stolonifera 'Flaviramea'	600-800mm	3L	600mm cts
Corylus avellana	600-800mm	OG	600mm cts
Corylus maxima 'Purpurea'	400-600mm	3L	750mm cts
Photinia fraseri 'Red Robin'	400-600mm	3L	750mm cts
Pyracantha 'Saphyr Red'	400-600mm	3L	600mm cts
Viburnum x burkwoodi	300-400mm	3L	600mm cts

PROPOSED ORNAMENTAL GROUND COVER SHRUB PLANTING
(*450mm depth of topsoil*)
Ultimate plant height is below 1m.

Species	Supply Size	Pot Size	Spacing
Cotoneaster dammeri 'Coral Beauty'	400-600mm	3L	500mm cts
Berginia cordifolia 'Silver Light'	150-200mm	2L	450mm cts
Escallonia 'Red Dream'	300-400mm	3L	500mm cts
Euonymus 'Emerald 'n' Gold'	200-300mm	2L	500mm cts
Hebe pinguifolia 'Sutherlandii'	200-300mm	3L	500mm cts
Hypericum x moserianum	300-400mm	3L	600mm cts
Lonicera nitida 'Maygreen'	300-400mm	2L	500mm cts
Luzula sylvatica	150-200mm	2L	500mm cts
Persicaria affinis 'Darjeeling Red'	150-200mm	2L	450mm cts
Potentilla dalmunica 'Abbotswood'	300-400mm	3L	500mm cts
Prunus laurocerasus 'Cherry Brandy'	300-400mm	3L	500mm cts
Rosa 'Kent'	300-400mm	3L	450mm cts
Spiraea 'Gold Mound'	300-400mm	3L	500mm cts
Stephenandra incise 'Crispa'	300-400mm	3L	500mm cts

PROPOSED AMENITY GRASS AREAS
(*150mm depth of topsoil*)

PROPOSED WILDFLOWER AREAS
(200mm depth subsoil)

PROPOSED ECOLOGICAL GRASSLAND AREAS
(*150mm depth of topsoil*)

PROPOSED INUNDATION GRASSLAND AREAS
(Cultivated subsoil to a depth of 200mm)
EP1 – Pond edge mixture sown at 4g/m2 supplied by Emosgate Seeds

PROPOSED MARGINAL PLANTING
(Cultivated subsoil to a depth of 200mm)

10%	Caltha palustirs	Marsh marigold	9cm pot 600c/s	0-100mm
10%	Filipendula ulmaria	Meadowsweet	9cm pot 600c/s	0-100mm
10%	Galium palustre	Marsh bedstraw	9cm pot 600c/s	0-100mm
10%	Lythrum salicaria	Purple Loosestrife	9cm pot 600c/s	0-50mm
10%	Mentah aquatica	Water mint	9cm pot 600c/s	0-100mm
10%	Myosotis scorpioides	Water-forget-me-not	9cm pot 600c/s	0-100mm
10%	Ranunculus sceleratus	Celery-leaved buttercup	9cm pot 600c/s	0-100mm
10%	Scrophularia auriculata	Water Figwort	9cm pot 600c/s	0-100mm
10%	Sparganium erectum	Branched Bur Reed	9cm pot 600c/s	0-200mm
10%	Veronica beccabungo	Brooklime	9cm pot 600c/s	0-100mm

PROPOSED REED BED
(Cultivated subsoil to a depth of 200mm)
100% Phragmites australis 9cm pot 500c/s 0-900mm

PROPOSED TIMBER POST AND 4 RAIL FENCE WITH 3.6M VEHICULAR MAINTENANCE ACCESS GATE

INDICATIVE CONTOURS

REV	NOTE	DATE	AUTH
REV B	Unit 1 layout updated	04-05-20	MAB
REV A	General updates across the site	14-04-20	MAB

BCA BARRY CHINN associates Landscape Architects

PROLOGIS®

PROJECT
FORMER GSK SITE,
PROLOGIS PARK,
WEST LONDON

DRAWING
LANDSCAPE CONCEPT PLAN

				DRG NO.
CONTRACT	1982-19			05
DATE	12-02-20	DRAWN	MAB	
ISSUE	Comment	CHECKED	MAB	
SCALE	1:500	ORIG SHEET	A0	REV B
CAD FILE	1982-19-05.dwg			

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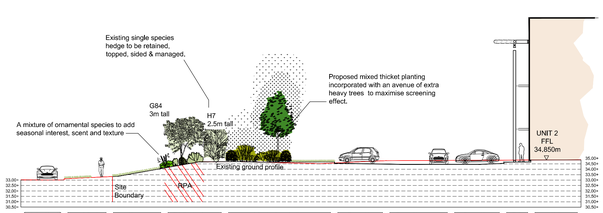

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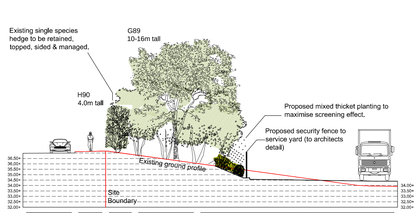

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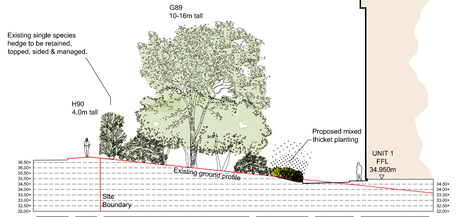

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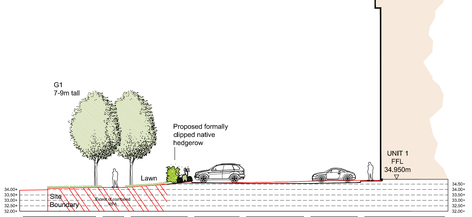

SECTION D-D 1:200

Notes

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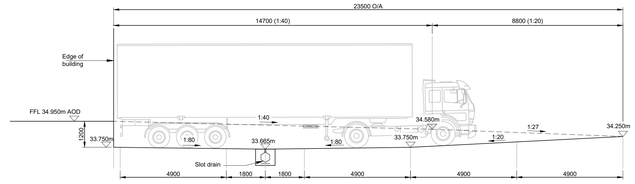
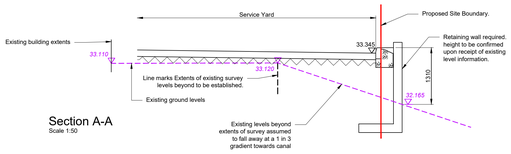
2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.
3. This drawing should be read in conjunction with all other relevant drawings and specifications.

Key :

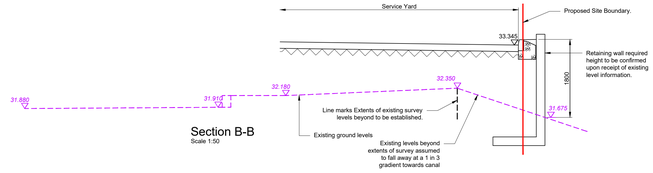
- : Indicates Retaining Wall Extents
- 34.530 + : Indicates Proposed Levels
- 34.530 + : Indicates Existing Road Tie In Levels
- : Indicates Major Contours 0.250m Intervals
- : Indicates Minor Contours 0.050m Intervals



Indicative Section Through Loading Dock
(Scale 1:100)



Section A-A
Scale 1:50



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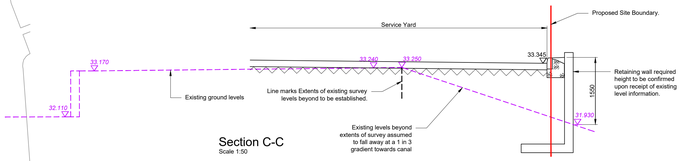

Section C-C
Scale 1:50

P02	Levels & sections revised to suit updated site layout.	ST	MH	28.05.20
P01	First Issue	ST	MH	18.02.20
Rev	Description	By	Ckd	Date

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Client: PROLOGIS®

Project: Prologis Park West London Expansion

Title: Proposed Levels

Status	Scale @ A0	Date Created
Preliminary	1:500	18.02.20
Task Team Manager	**Information Author**	**Task Information Manager**
MH	ST	MH

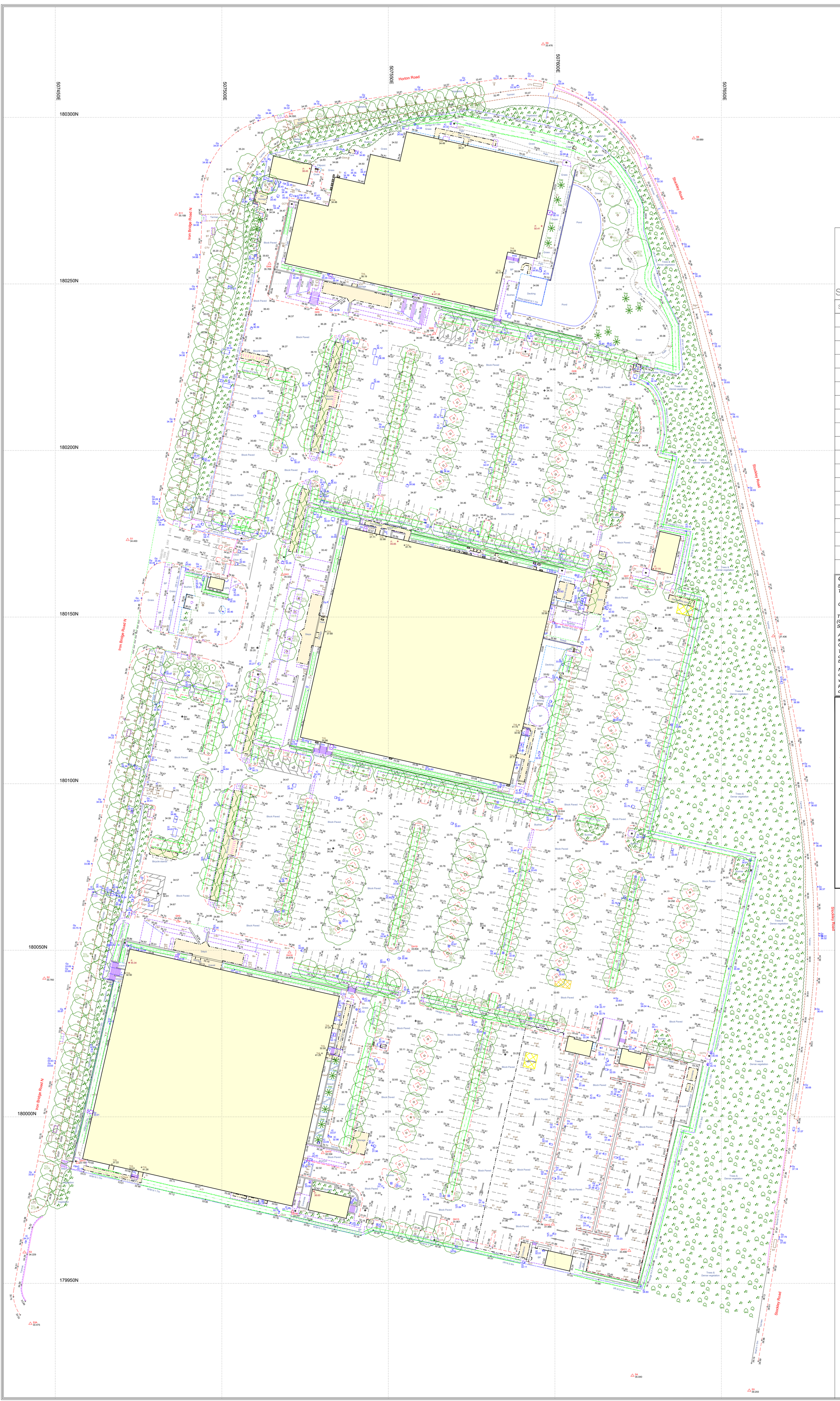
Document Number: PPWLE-RPS-SI-XX-DR-C-1600
Project Code - Originator - Zone - Level - Type - Role - Drawing Number

RPS Project Number	Suitability	Revision
NK019749	S0	P02

rpsgroup.com

Appendix C.2

TOPOGRAPHICAL SURVEY



N

Station Information:

Station	Easting (m)	Northing (m)	Level (m)
GH1	507518.211	180162.745	35.322
GH2	507486.864	180058.701	34.835
GH3	507528.668	180242.494	36.503
GH4	507514.349	180256.116	35.769
GH5	507563.793	180235.127	36.198
GH6	507607.288	180224.714	34.831
GH7	507622.943	180161.958	33.771
GH8	507600.085	180091.801	33.504
GH9	507636.936	180064.823	34.292
GH10	507627.854	180016.318	33.400
GH11	507622.357	179959.826	33.498
GH12	507599.399	179967.726	31.969
GH13	507569.066	179967.932	31.901
GH14	507542.077	179986.088	31.942
GH15	507530.345	179989.189	32.334
GH16	507521.223	179971.564	33.097
GH17	507456.742	179986.241	33.195
GH18	507520.339	180049.371	34.876
GH19	507556.184	180049.961	33.834

OS Note:

Some services may have been omitted due to parked vehicles. The Ordnance Survey tile is to be used as a guide only.

OS Buildings *Surveyed Buildings*

This survey has been orientated to the Ordnance Survey (O.S) National Grid OSGB36(15) via Global Navigation Satellite Systems (GNSS) and the O.S. Active Network (OS Net).

A true OSGB36 coordinate has been established near to the site centre via a transformation using the OSTN15GB & OSGM15GB transformation models.

The survey has been correlated to this point and a further one or more OSGB36 (15) points established to create a true O.S. bearing for angle orientation.

No scale factor has been applied to the survey therefore the coordinates shown are arbitrary & not true O.S. Coordinates which have a scale factor applied.

Please refer to Survey Station Table to enable establishment of the on-site grid and datum.

Legend:

Rev	Date	Description	Drawn	Q. Ref.

greenhatch group

- Topographical Surveys
- Site Engineering
- Utility / CCTV Surveys
- Measured Building Surveys
- 3D Laser Scanning
- Revit & BIM Models

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CLIENT
ProLogis UK Ltd

PROJECT
Stockley Park
West Drayton, Uxbridge
UB11 1BT

TITLE
Topographical Survey

SCALE	DATE
A1@ 1: 500	24.06.19
DRAWN: LB	QUALITY REF: GH5472
Level datum: See note	
Grid orientation: See note	
Job number: 33865	
Drawing No.: 33865_T	Rev.: 0

Comments
This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

Appendix C.3

WSP GEO-ENVIRONMENTAL REPORT

2. SITE SETTING

2.1. SITE DESCRIPTION AND CURRENT USE

Table 2 summarises the Site details presented in the PRA and obtained over the course of the intrusive works. A Site location plan and current layout plan are presented in Drawings 1 and 2 in **Appendix A.**

Table 2 - Summary of Site Details

Detail	Comment
Name of Site	Prologis Park West London: Expansion Land.
Address of Site	1-3 Ironbridge Road, Stockley Park West, Iron Bridge Road North, West Drayton, Uxbridge, UB11 1BT.
Location and National Grid Reference (NGR)	The Site is located in the west of London, approximately 4.5 km south-east of Uxbridge. The Site is situated on the Stockley Park business park at approximate NGR 507560, 180120. The Site can be accessed via Ironbridge Road North, adjacent to the west of the Site.
Site Area and Topography	The Site is broadly rectangular in shape and covers approximately 5.4 ha. The topography of the Site raises by approximately 1.5 m from the southern section towards the centre of the Site. The ground level in the north-west section of the Site reduces by approximately 1.5 m towards the northern Site boundary.
Site Description and Current Use	The Site is owned and occupied by GSK, a pharmaceutical company. The Site comprises the GSK offices, which includes four large buildings on-site; one in the north, one in the centre, one in the south-west and a multi-storey car park in the south-east corner. The remainder of the Site is covered in hardstanding (used as car parking) with limited landscaped areas. Two large surface waters feature are present; one located in the north of the Site and one in the east. It is understood the water feature in the east of the Site is a surface water balancing pond used to attenuate surface water car park discharge, prior to discharge to the Grand Union Canal. The surface water feature to the north is for aesthetic purposes. 3 x 30,000 litre underground diesel storage tanks (USTs) are present on-site; one associated with each building to power back-up generators (located on the roofs). The USTs were linked via underground fuel lines to fuel risers that were installed up the external side of the buildings. The fill points are located adjacent to the USTs. The USTs were reportedly installed in the early 1990s and decommissioned in 2014, which comprised emptying the tanks of fuel and filling each with foam. Each backup generator was served by a dedicated above ground tank (AGTs), approximately 500 litres in capacity. Reportedly the AGTs were emptied at the same time as the USTs were decommissioned. It is unknown whether the ancillary fuel pipes have been decommissioned or foam filled. Three electrical substations present on-site; located in the north-west, east and south. It is not known whether these substations contained polychlorinated biphenyls (PCBs).

Detail	Comment
	Waste storage areas are present to the east of Building 10 (in the centre of the Site), to the east of Building 11 (in the south of the Site) and to the west of Building 9 (in the north of the Site).
Ground Cover	The Site is predominantly covered by block paving with soft landscaping and trees between the parking bays. The block paving is generally in good condition.
Surrounding Area	The following land uses were observed in the area surrounding the Site: **North** – A408 junction with Horton Road and Bennetsfield Road with Stockley Park golf course beyond. **East** – A408 with further industrial units of Stockley Park beyond. **South** – Grand Union Canal, Iron Bridge Road South, railway line and residential properties. **West** – Iron Bridge Road North and industrial units of Prologis Park: West London beyond.
Observations of Impact	During the Site walkover, no external staining of the ground was observed. No evidence of vegetation stress was noted.

2.2. ANTICIPATED GEOLOGY AND HYDROGEOLOGY

A review of the publicly available geological information has been undertaken, with sources including the regional British Geological Survey (BGS) 1:50,000 maps, information available on the BGS on-line Geology of Britain Viewer and local BGS borehole logs. These indicate that the underlying superficial geology on Site comprises “worked ground” above natural superficial deposits comprising the Lynch Hill Gravel Member (sand and gravel) across the majority of the Site and the Langley Silt Member (clay and silt) along the southern and eastern boundaries. The bedrock geology comprises the London Clay Formation (clay, silt and sand).

According to Council records obtained by Ramboll Environ, anticipated ground conditions beneath the structures comprises 1.75 m thick structural fill (compacted granular fill), 0.4 m approved fill (excavated gravel/site won/imported material) over unexcavated Lynch Hill Gravel above the London Clay. Anticipated ground conditions in external areas were likely to comprise 150 mm hardstanding/paving; over 450 mm sub-base; over a 300 mm reported capping layer; over landfill material; all over unexcavated Lynch Hill Gravel (approximately 450 mm thick) and London Clay.

The Lynch Hill Gravel Member is classified as a Principal Aquifer and the Langley Silt Member and London Clay Formation are designated as Unproductive Strata. The Site is not situated within a groundwater Source Protection Zone (SPZ) and there are no operational groundwater abstraction licences for potable water supply within 1 km of the Site. The closest abstraction is approximately 42 m north-west of the Site and relates to abstracting groundwater for make-up or top-up water (i.e. to make up water levels in ponds, canals, boilers, lagoons). It is understood this abstraction was used to maintain water levels in the surface water features located to the west of Ironbridge Road North.

2.3. HYDROLOGY

Two surface water ponds are present on-site; located in the north and east. The nearest off-site surface water feature is the Grand Union Canal, which lies adjacent to the southern boundary. The section of the canal between Iron Bridge and Brent was given a General Quality Assessment (GQA) Grade of D (i.e. Fair) in 2000. No recent water quality data for the canal is available from the Environment Agency. The River Crane is located approximately 3 km east of the Site and has an overall water body quality classification of poor (2016).

The closest surface water abstraction point (for process water) is located approximately 156 m south-east of the Site.

2.4. SITE HISTORY

ON-SITE

The following summary of the Site history has been produced from a review of the historical mapping provided in the PRA and regulatory information provided in the Ramboll Environ report.

The earliest available historical maps from 1868 indicate the majority of the Site to be undeveloped, comprising three fields.

By 1895 a gravel pit is present in the south-east corner of Site. The central field is shown as an orchard with three small buildings constructed; one in the centre and two on the eastern boundary. An additional building is present in the south-east corner of Site.

By 1914, the southern two thirds of the Site is a gravel pit with a flooded excavation in the west. By 1934, further excavation has occurred along the western half of the Site. The previously flooded section of the gravel pit in the west of the Site has been extended north and formed into a navigable channel connected to the canal to the south.

Historical reports indicate that the gravel extraction was followed by progressive filling in the 1930s to 1940s and again in the 1960s.

In 1960 the channel is no longer connected to the canal and the building at the northern end is no longer present. The Site is marked as rough pasture. The northern ends of two long buildings cross the western boundary.

By the mid 1960s, the channel had been backfilled and a depot had been constructed in the south of the Site. The long building that crossed the western boundary is part of a piggery with additional related buildings present in the eastern half of the Site. By 1975 a plant hire works has been built cross boundary to the south of the piggery.

By the early 1990s, the Site is redeveloped into its current day configuration with the exception of the multi-story carpark in the south-east corner (constructed in the late 1990s).

The Envirocheck report indicates the majority of the Site to be infilled land with a small area of landfill in the north-west.

Council records obtained by Ramboll Environ suggest remediation occurred on-site and at the adjacent (west) site from 1987 to 1988 involving the removal of 1,116,000 m^3 of landfill material. Further information is provided in the Ramboll Environ Phase 1 report and the WSP PRA.

3. GROUND AND GROUNDWATER CONDITIONS ASSESSMENT

3.1. GROUND CONDITIONS

SUMMARY

An exploratory hole location plan is presented in Drawing 3 in **Appendix A**. The exploratory logs are provided in **Appendix D** with a photographic record in **Appendix E**. Geological cross-sections are included as Drawings 4 and 5 in **Appendix A**.

The ground investigation carried out between February and March 2019 is consistent with the ground conditions provided by the BGS regional maps. A summary of the strata recorded across the Site during the investigation is provided in **Table 5**. All the exploratory holes were drilled in areas of hardstanding (outside of the existing building footprints).

Table 5 - Summary of Strata Encountered During Investigation

Stratum	Depth to Base of Strata (m bgl)	Level at Base of Strata (m AOD)	Thickness (m)
Hardstanding	0.08	36.27 to 31.76	0.08
Made Ground (sand and limestone aggregate subbase)	0.15 to 0.50	36.15 to 31.54	0.07 to 0.42
Made Ground (infilled material)	0.52 to 6.00 (1.50)	33.94 to 28.72 (30.54)	0.20 to 5.70 (1.35)
Made Ground (reworked natural)	3.00 to 6.20 (6.50)	30.54 to 28.36 (28.72)	0.20 to 4.60 (2.70)
Langley Silt Member	2.65 to 3.00	32.84 to 29.10	0.40 to 1.00
Lynch Hill Gravel Member	3.60 to 6.50 (6.45)	29.64 to 28.22 (27.91)	0.30 to 2.70 (0.50)
London Clay Formation	Not proven (>14.95)	Not proven (<16.95)	Not proven (>12.15)

** Brackets indicate maximum proven depth/ thickness and the minimum elevation at the base, in exploratory holes terminated within the stratum.*

HARDSTANDING

Brick block paving was encountered at the surface in all exploratory hole locations.

MADE GROUND

Both granular and cohesive Made Ground was recorded during the ground investigation as detailed below in Table 6. However, the source of this Made Ground is further defined as highlighted in Table 5 and the Sections below. For the purpose of the geotechnical assessment in Section 7, the Made Ground has been differentiated into Granular Made Ground (GMG) (which includes the granular

subbase and some infilled material) and Cohesive Made Ground (CMG) (which includes the majority of the infilled material and the reworked natural clay).

Table 6 - Summary of Made Ground

Geotechnical Unit	Description	Minimum and Maximum Thickness [Average] (m)
Granular Made Ground (GMG)	Light brownish yellow slightly gravelly medium and coarse sand (subbase) and dark brownish black gravelly fine and medium sand with frequent wood and ash and rare ceramic and glass (regular GMG). Gravel is fine and medium angular of flint. This layer is located over the Cohesive Made Ground (CMG), it forms the pavement build-up of the areas of hardstanding (found in every exploratory hole).	0.18 – 4.62 [0.72]
Cohesive Made Ground (CMG)	Soft locally firm brown slightly gravelly slightly sandy clay, containing wood, bricks, concrete, asphalt, and other manmade material. CMG was recorded below the GMG in all exploratory holes except boreholes BH03, WS10 and WS13.	0.57 – 6.05 [3.02]

GRANULAR MADE GROUND

The proven thickness of GMG ranged from 0.18 m in WS03 to 4.62 m in BH03. Typically, the greatest thicknesses of Made Ground were encountered towards the south-east of the Site.

COHESIVE MADE GROUND

The full thickness of the CMG was proven in 14 exploratory hole locations. The proven thickness of Made Ground ranged from 0.57 m in WS03 to 6.05 m in WS06. Typically, the greatest thicknesses of CMG were encountered towards the north and centre of the Site.

MADE GROUND (SUBBASE)

The block paving was underlain by a thin layer of light yellow / light brown / light yellowish brown fine to coarse sand over a granular subbase typically comprising pinkish or reddish brown gravelly sand or sandy fine to coarse angular to subrounded gravel of limestone.

A black geotextile membrane was encountered in the majority of locations underlying the subbase over the current road and parking areas.

MADE GROUND (INFILLED MATERIAL)

Made Ground was encountered in all exploratory hole locations and was variable in composition and thickness across the Site. Typically, the Made Ground was cohesive comprising soft to firm brown / orangish brown gravelly sandy silty clay; gravel is fine to coarse angular to sub-rounded of flint, brick, concrete and limestone. The cobble content was typically low; cobbles are angular of brick, flint and limestone. Rare inclusions of plastic, glass, wood, clinker, metal, bone, ceramic and ash were also noted.

The full thickness of the infilled material was proven in 13 exploratory hole locations. The proven thickness of Made Ground ranged from 0.20 m in WS01 to 5.70 m in BH01.

MADE GROUND (REWORKED NATURAL)

Possible reworked natural clay was encountered beneath Made Ground in eight exploratory hole locations (BH01, WS01, WS04, WS06, WS07, WS08, WS09 and WS11) as soft locally firm brown / orangish brown sandy silty occasionally slightly gravelly clay. The greatest proven thickness (4.38 m) was encountered in WS01 in the north-west corner of the Site.

LANGLEY SILT MEMBER (LASI)

The Langley Silt Member (LASI) is not very well represented in the area and was only recorded in four locations, namely; BH02 and WS15 in the west of the Site and BH04 and WS12 in the south-east. Despite the BGS maps showing LASI along the east and south of the Site, it was recorded along the west and south-east of the Site. The LASI was typically described as firm or stiff orangish brown or greyish brown mottled orangish brown slightly gravelly silty clay; gravel is fine to coarse angular to rounded of flint. The average thickness of the Langley Silt Member was 0.61 m, ranging from 0.40 m in WS15 to 1.00 m in BH04.

LYNCH HILL GRAVEL MEMBER (LHGR)

The Lynch Hill Gravel Member (LHGR) was encountered in nine of the twenty exploratory hole locations (BH01, BH02, BH03, WS07, WS08, WS09, WS11, WS12 and WS15). LHGR was found below the LASI or CMG units and overlying the London Clay. The Lynch Hill Gravel Member was typically described as brown / light brown sandy fine to coarse angular to rounded gravel of flint or yellowish brown / orangish brown slightly gravelly silty fine to coarse sand; gravel is fine to coarse angular and subangular of flint. The average proven thickness of the Lynch Hill Gravel Member was 0.70 m, ranging from 0.30 m in BH01 and BH03 (in the north and east, respectively) to 2.70 m in BH02 towards the west of the Site. The thin layer of gravel is consistent with records which indicates the majority of the Site to have been subject to historical gravel extraction.

LONDON CLAY FORMATION (LC)

The London Clay Formation was encountered in eight exploratory hole locations (BH01, BH02, BH03, BH04, WS01, WS09, WS11 and WS12) and was proven to 15 m bgl, although the thickness was not confirmed. The London Clay was typically described as stiff locally very stiff dark grey or brownish grey silty clay with occasional pyrite nodules and gypsum crystals. Claystone was encountered between 8.30 m and 8.60 m bgl and between 10.75 m and 10.87 m bgl in BH04.

EVIDENCE OF CONTAMINATION

Selected soil samples were collected during the advancement of investigation locations for headspace screening. Photo Ionisation Detector (PID) readings were typically below the limit of detection (< LOD) for the equipment with the highest reading recorded in BH02 at 4.00 m bgl (9.3 ppm), located to the west of Building 10.

The following visual or olfactory evidence of contamination was recorded during the ground investigation:

- Strong hydrocarbon odour at 4.00 m bgl within the Lynch Hill Gravel Member in BH02;
- Black leachate recorded between 3.00 m and 4.00 m bgl within Made Ground in WS04; and

- Strong hydrocarbon odour and black staining between 2.40 m and 2.75 m bgl within the Made Ground in WS06.

Organic odours were recorded within Made Ground in BH02, WS04, WS06, WS08, WS12 and WS14.

OBSTRUCTIONS

Obstructions encountered during the ground investigation are summarised in **Table 7**.

Table 7 – Obstructions Encountered During Ground Investigation

Exploratory Hole Location	Depth Obstruction Encountered (m bgl)	Elevation Obstruction Encountered (m AOD)	Remarks
BH03	0.60	33.11	Concrete
WS02	1.20	34.77	Concrete
WS03	0.83	33.49	Concrete
WS10	0.75	33.80	Concrete
WS10A	0.30	34.29	Concrete
WS13	0.65	33.61	Concrete
WS13A	0.67	33.59	Concrete
WS14	1.30	30.54	Concrete

3.2. GROUNDWATER CONDITIONS

GROUNDWATER CONDITIONS ENCOUNTERED DURING INVESTIGATION

Groundwater strikes recorded during the investigation are summarised in **Table 8**.

Table 8 – Groundwater Encountered During the Ground Investigation

Exploratory Hole Location	Depth Groundwater Encountered (m bgl)	Elevation Groundwater Encountered (m AOD)	Remarks
BH01	4.50	30.22	Seepage in Made Ground.
BH03	4.50	29.21	Strike in Made Ground.
WS04	3.10	30.74	Strike in Made Ground.
WS01	5.00	29.46	Strike in London Clay Formation.
WS06	5.50	29.72	Strike in Made Ground.

Exploratory Hole Location	Depth Groundwater Encountered (m bgl)	Elevation Groundwater Encountered (m AOD)	Remarks
WS07	3.00	30.79	Strike in Made Ground. Rising to 2.90 m bgl after 20 minutes.
WS11	4.00	29.55	Strike in Made Ground. Rising to 1.10 m bgl after 20 minutes.
WS14	1.30	30.54	Slight seepage in Made Ground.

MONITORED GROUNDWATER ELEVATIONS

Groundwater was recorded in 12 wells during monitoring. A summary is provided in **Table 9**.

Table 9 – Summary of Groundwater Levels During Monitoring

Exploratory Hole Location	Stratum	Groundwater Level Recorded (m bgl)		Groundwater Level Recorded (m AOD)	
		Min	Max	Min	Max
BH01	Made Ground	2.18	2.27	32.45	32.45
BH02	Lynch Hill Gravel Member	3.61	3.67	31.17	31.23
BH03	Made Ground	2.78	2.83	30.88	30.93
BH04	Made Ground / Langley Silt Member	0.49	1.32	30.58	31.41
WS01	Made Ground / London Clay Formation	1.89	2.09	32.37	32.57
WS02	Made Ground	DRY	1.03	DRY	34.94
WS04	Made Ground	2.83	2.85	30.99	31.01
WS06	Made Ground	3.64	3.74	31.48	31.62
WS08	Made Ground	3.48	4.95	29.41	30.88
WS09	Made Ground	2.57	2.65	30.89	30.97

Exploratory Hole Location	Stratum	Groundwater Level Recorded (m bgl)		Groundwater Level Recorded (m AOD)	
		Min	Max	Min	Max
WS10	Made Ground	DRY	DRY	DRY	DRY
WS11	Made Ground **Groundwater level may be associated with the Lynch Hill Gravel Member based the location of the strike and the installation details.*	2.65	2.74	30.81	30.90
WS12	Made Ground	DRY	DRY	DRY	DRY
WS14	Made Ground	0.71	0.76	31.08	31.13
Grand Union Canal	N/A	-	-	29.30	29.42

During monitoring, the water within WS04 had a strong organic odour and was black in colour and may be representative of landfill leachate. Groundwater recorded in WS02 (on one occasion) and WS14 is not considered to be representative of groundwater elevations at the Site since these exploratory hole locations have shallow response zones (<1.20 m bgl) and the levels within these installations may be due to surface infiltration or perched groundwater. This is supported by the monitoring records which indicate that the water levels at these two locations were significantly different to nearby installations and did not correlate to the estimated flow direction discussed below.

Insufficient groundwater (<0.50 m) was present within WS09 and WS14 for sampling.

During sampling, drawdown of the water level was observed in BH04, WS08. Groundwater in WS06. WS08 also became dry during the first round of sampling and demonstrated a low rate of recharge, thus potentially suggesting that the groundwater within these locations is perched.

HYDRAULIC GRADIENT AND CONTINUITY

Groundwater contour plots for the four monitoring visits are included as Drawings 6, 7, 8 and 9 in **Appendix A**. Based on the monitoring undertaken and contour plots, it appears that groundwater within the Made Ground may flow towards the south. Since only one monitoring well was installed within the Lynch Hill Gravel, it has not been possibly to infer a groundwater flow direction within this stratum. Groundwater elevation data from WS01, BH01, BH03, BH04, WS04, WS06, WS09 and WS11 (all installed within Made Ground) has been used in the production of these drawings. BH04 has been excluded from the contour plot for visit 1 since the groundwater level is considered to have been influenced by the water used during the drilling process. Groundwater data from BH02 has been excluded since the response zone is within the Lynch Hill Gravel and data from WS02, WS08 and WS14 have been excluded since the groundwater is either considered to be perched or due to surface water infiltration.

Hydrographs are included in **Appendix F**. The groundwater level within WS06 and WS08 continued to rise throughout the monitoring visit following sampling, indicating a low rate of recharge. Groundwater within BH04 also took over 24 hours to return to pre-sampling level. Groundwater within BH01, BH02 and WS01 was faster to recharge whilst limited drawdown was noted during sampling of BH03, WS04 and WS11. During the monitoring period, the water level within the canal rose slightly (by about 50 mm), assumed to be due to rainfall. An overall rise in groundwater level was also observed in BH01, BH04 and WS01.

The groundwater level within the canal was typically lower than groundwater levels recorded on-site, which may provide the potential for hydraulic conductivity with the groundwater beneath the Site. However, there is also evidence to suggest that the groundwater may be perched and the cohesive nature of the Made Ground and presence of the sheet pile wall along the canal would limit lateral migration.

It is should be noted that the groundwater present beneath the adjacent Prologis Park: West London site has been demonstrated to be hydraulically disconnected from the Grand Union Canal during previous ground investigations.

Further groundwater level data will be required to fully establish the hydrogeology at the Site.

IN-SITU GEOCHEMISTRY MEASUREMENTS

Geochemical parameters were recorded during low flow purging in nine exploratory hole locations prior to groundwater sampling. The results are included in **Appendix G** and the stabilised readings are summarised in **Table 10**.

Table 10 - Recorded In-situ Geochemistry Measurements

Exploratory Hole	Stratum	Temperature (°C)	pH (pH units)	Dissolved Oxygen (mg/l)	Specific Conductivity (µS/m)	Redox Potential (mV)
BH01	Made Ground	12.42 to 13.37	7.66 to 7.72	0.38 to 0.88	1193 to 1260	-98.77 to -95.11
BH02	Lynch Hill Gravel Member	12.97 to 13.04	6.74 to 6.84	0.39 to 0.57	2716 to 2767	+41.75 to +56.45
BH03	Made Ground	11.78 to 13.73	6.79 to 6.80	0.36 to 0.38	1861 to 1906	-47.33 to -42.57
BH04	Made Ground / Langley Silt Member	9.71 to 10.13	7.02 to 7.08	0.54 to 0.95	1293 to 1320	+97.51 to +100
WS01	Made Ground / London Clay Formation	11.39 to 11.79	6.95 to 7.01	0.55 to 2.75	2204 to 2260	-22.99 to -12.17
WS04	Made Ground	11.25 to 12.39	6.85 to 6.89	0.28 to 1.30	3185 to 3336	-109.5 to -103
WS06	Made Ground	13.08 to 13.91	7.55 to 7.56	0.44 to 0.70	3341 to 3638	-28.05 to -18.15

Exploratory Hole	Stratum	Temperature (°C)	pH (pH units)	Dissolved Oxygen (mg/l)	Specific Conductivity (µS/m)	Redox Potential (mV)
WS08	Made Ground	14.22 to 14.64	6.63 to 6.70	0.63 to 1.17	2001 to 2271	+56.51 to +68.22
WS11	Made Ground	11.11 to 12.67	6.98 to 6.99	0.33 to 0.34	2410 to 2430	-41.66 to -37.05

The measured pH was near neutral across the Site, ranging from 6.63 in WS08 to 7.72 in BH01. Specific conductivity was more variable ranging from 1,193 µS/m in BH01 to 3,638 µS/m in WS06. The dissolved oxygen concentration was typically low and redox potential ranged from -109.5 mV in WS04 to 100 mV in BH04; indicative of anaerobic conditions.

3.3. SUMMARY OF FINDINGS

The ground conditions encountered across the Site were broadly consistent with Council records and BGS maps for the area. Block paving underlain by an average thickness of 0.31 m of granular subbase (comprising sand over limestone) was encountered across the Site. The underlying capping layer reported within Council records was not evident during the ground investigation. However, a black geotextile membrane was encountered in the majority of exploratory hole locations between the subbase and underlying Made Ground (infilled material). This Made Ground was identified in all exploratory hole locations, underlain by reworked natural clay in eight locations.

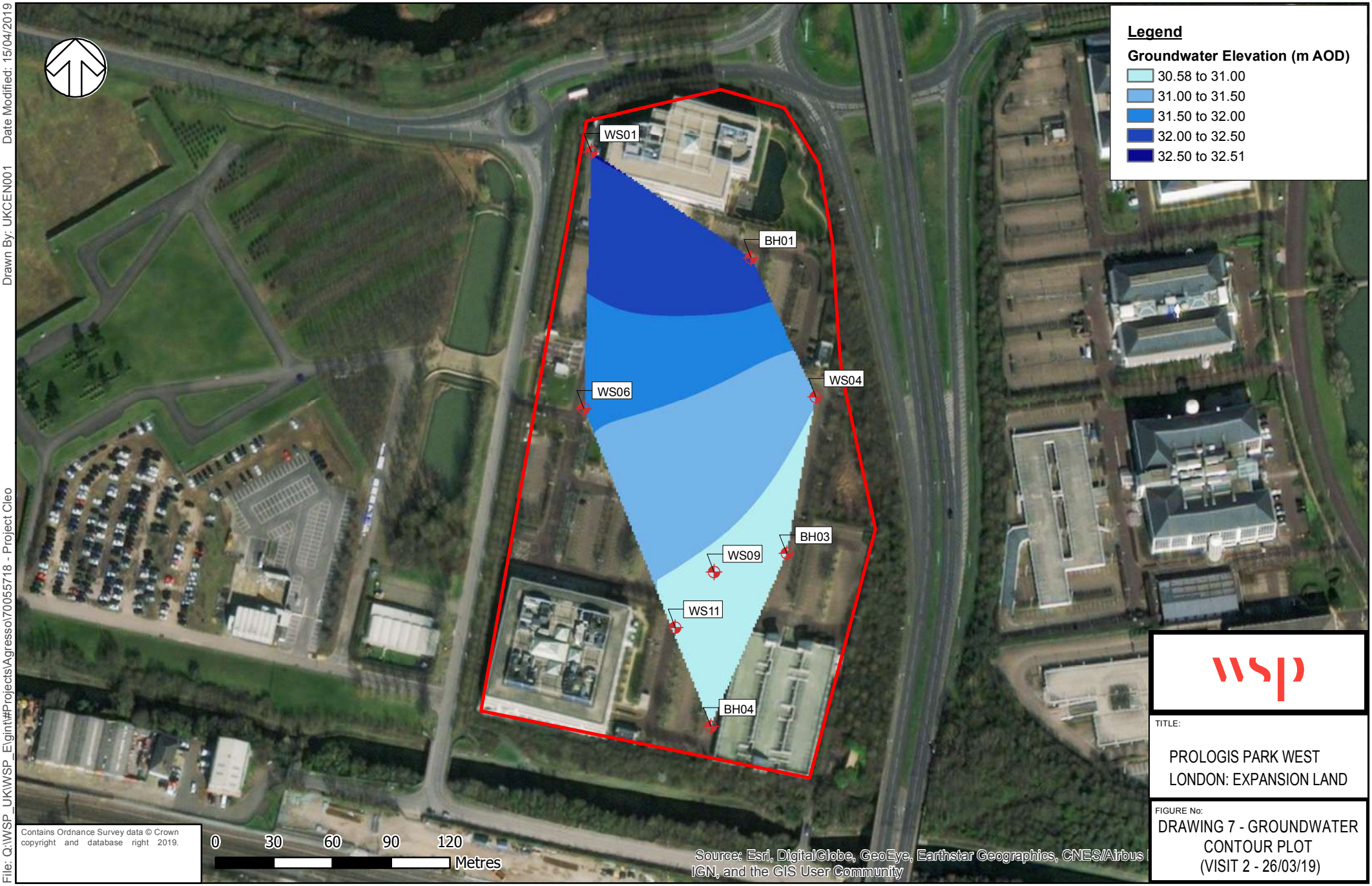
Where the full depth of the Made Ground was proven, the Lynch Hill Gravel Member was encountered in six locations and averaged 0.70 m thick where proven. The Langley Silt was encountered in two locations in the south-east of the Site in accordance with BGS maps and also in two locations in the west; the average thickness was 0.61 m.

During the ground investigation, groundwater was encountered as a seepage or strike within Made Ground in seven exploratory hole locations. Groundwater was also recorded at the top of the London Clay Formation in WS01. During monitoring, groundwater was recorded in 12 locations, of which nine had sufficient water to sample. Based on the monitoring undertaken to date, a southerly groundwater flow direction (towards the Grand Union Canal) has been inferred. However, it is inconclusive as to whether the water recorded within the boreholes on-site is representative of a truly hydraulically continuous groundwater body beneath the Site given the cohesive nature of the Made Ground. There is also evidence to suggest that the groundwater may be perched and the cohesive nature of the Made Ground and presence of the sheet pile wall along the canal would limit lateral migration in a similar way to that present beneath the adjacent Prologis Park: West London site where hydraulically disconnection from the Grand Union Canal was demonstrated.

Limited Lynch Hill Gravel Member was recorded on Site and a monitoring installation was placed within this stratum, which recorded groundwater. Although the majority of the Lynch Hill Gravel Member has been removed from the Site, given it is classified as a Principal Aquifer the risk to this aquifer has been further assessed in Section 4.


Key
Site Boundary
Cone Penetration Test (CPT) Location
Window Sampler Location
Rotary Borehole Location
WS01
CPT01
WS02
BH01
CPT03 / WS15
CPT02
WS03
CPT04
CPT05
WS04
WS06
BH02
WS07
CPT06
CPT07
WS08
WS10
CPT08
BH03
WS09
CPT09
WS11
WS12
WS13
CPT10
BH04
WS14
0 10 20 30 40
m
Imagery ©2019 , Bluesky, DigitalGlobe, Getmapping plc, Infoterra Ltd & Bluesky, The GeoInformation Group
Imagery ©2019 , Bluesky, DigitalGlobe, Getmapping
wsp
TITLE:
Prologis Park West London: Expansion Land
FIGURE No:
Drawing 3 - Exploratory Hole Location Plan
File: Created using iGIS, WSP's Online Mapping System
Drawn By: UKCEN001
Date Modified: 12/04/2019 10:55

BH04 excluded due to groundwater elevation interference from water flush used during drilling



wsp

TITLE:

PROLOGIS PARK WEST
LONDON: EXPANSION LAND

FIGURE No:

DRAWING 7 - GROUNDWATER CONTOUR PLOT
(VISIT 2 - 26/03/19)

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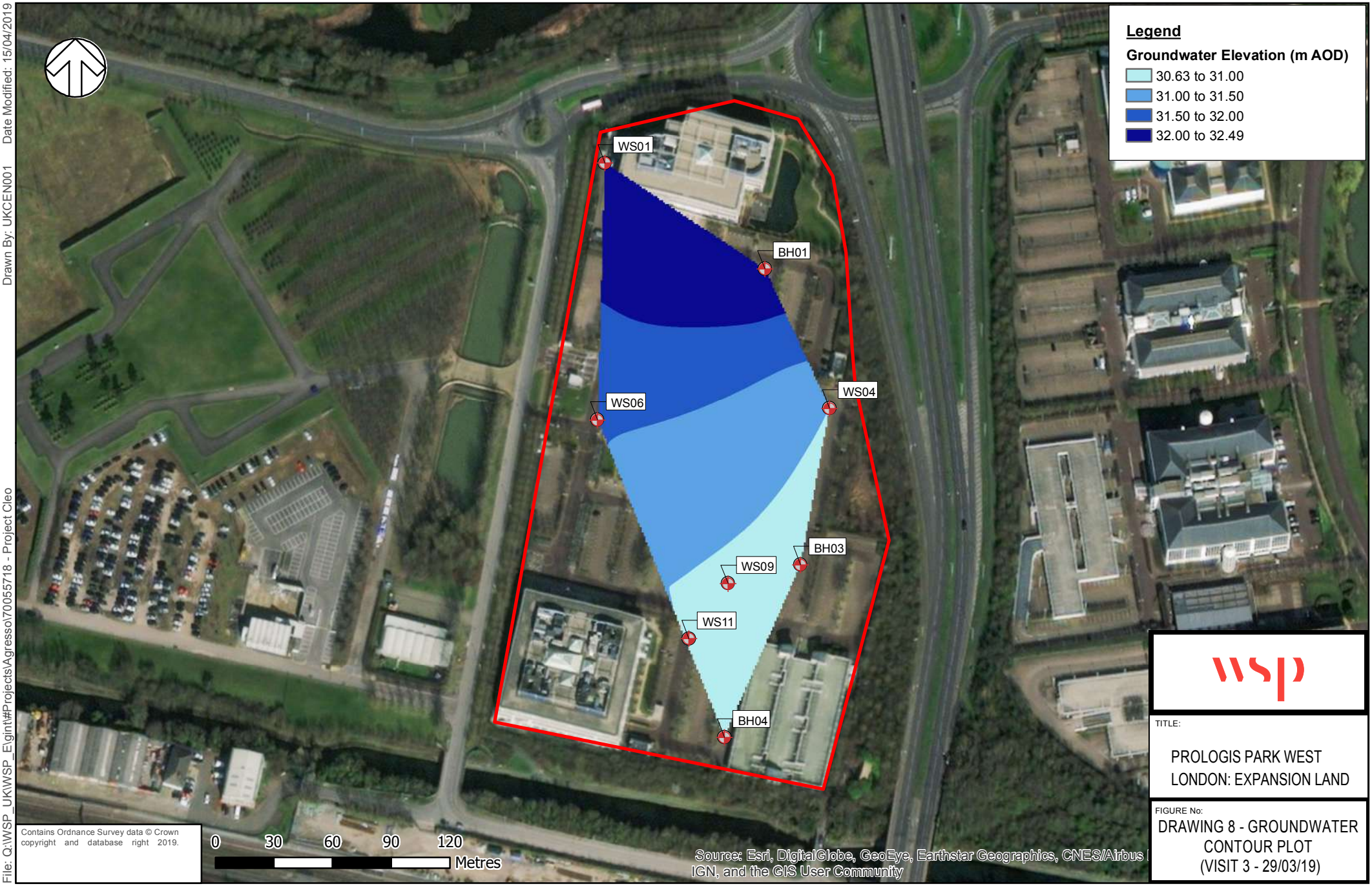

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Drawn By: UKCEN001
Date Modified: 15/04/2019

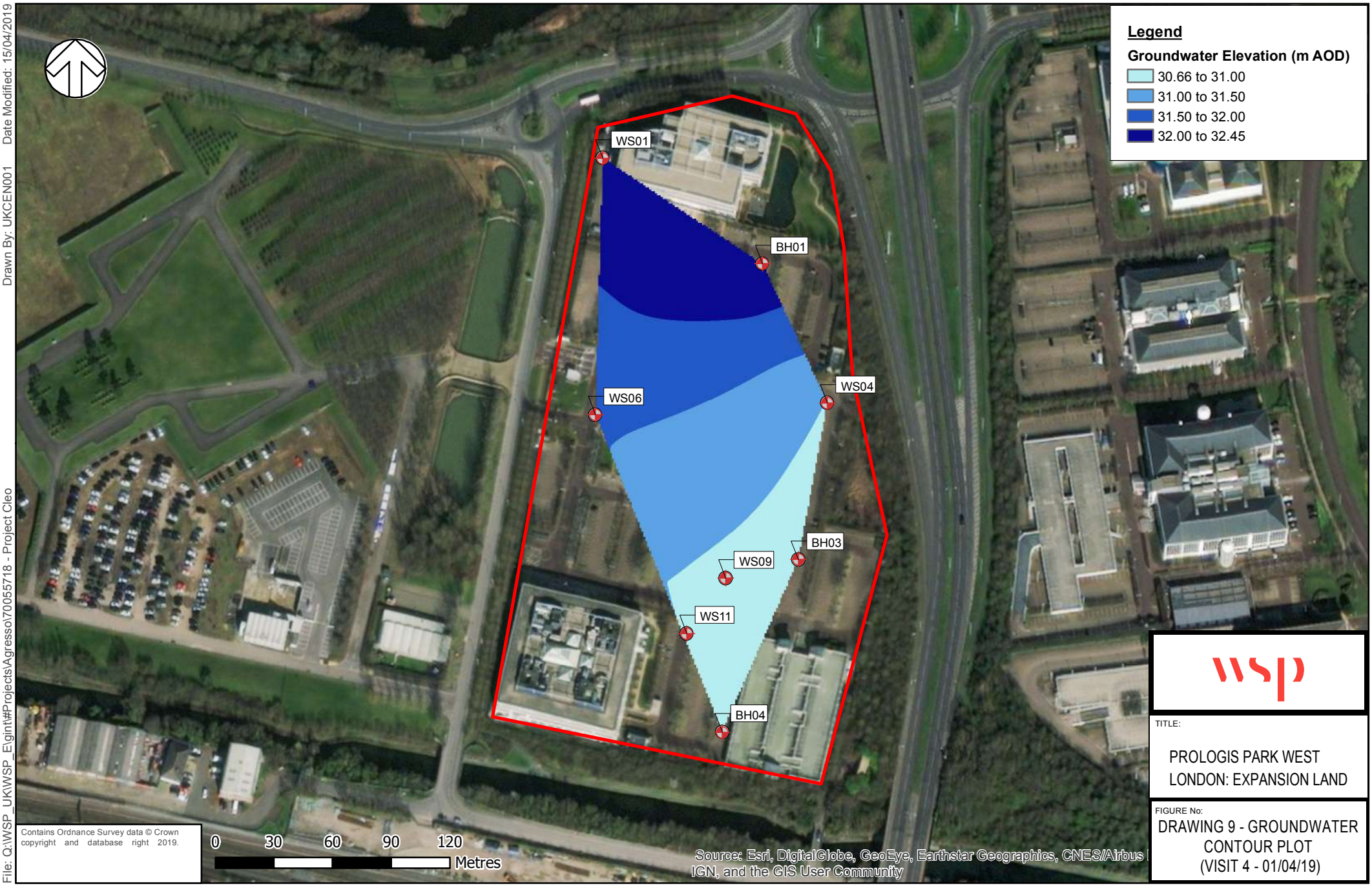
wsp

TITLE:

PROLOGIS PARK WEST
LONDON: EXPANSION LAND

FIGURE No:

DRAWING 8 - GROUNDWATER CONTOUR PLOT
(VISIT 3 - 29/03/19)



File: Q:\WSP_UK\WSP_E\gint\#Projects\Agresso\70055718 - Project Cleo
Drawn By: UKCEN001
Date Modified: 15/04/2019

wsp

TITLE:

PROLOGIS PARK WEST
LONDON: EXPANSION LAND

FIGURE No:

DRAWING 9 - GROUNDWATER CONTOUR PLOT
(VISIT 4 - 01/04/19)

Appendix C.4

THAMES WATER ASSET PLANS

Asset location search

Thames Water Property Searches

WSP
Mountbatten House
Basing View
BASINGSTOKE
RG21 4HJ

Search address supplied Glaxo Smithkline Uk Ltd
1-3
Stockley Park
Iron Bridge Road
Uxbridge
UB11 1BT

Your reference Prologis Park Expansion Land

Our reference ALS/ALS Standard/2019_4102534

Search date 1 November 2019

Keeping you up-to-date

Notification of Price Changes

From 1 September 2018 Thames Water Property Searches will be increasing the price of its Asset Location Search in line with RPI at 3.23%.

For further details on the price increase please visit our website: www.thameswater-propertysearches.co.uk
Please note that any orders received with a higher payment prior to the 1 September 2018 will be non-refundable.

Thames Water Utilities Ltd
Property Searches, PO Box 3189, Slough SL1 4WW
DX 151280 Slough 13

searches@thameswater.co.uk
www.thameswater-propertysearches.co.uk

0845 070 9148

searchcode

Asset location search

Property Searches

Search address supplied: Glaxo Smithkline Uk Ltd, 1-3, Stockley Park, Iron Bridge Road, Uxbridge, UB11 1BT

Dear Sir / Madam

An Asset Location Search is recommended when undertaking a site development. It is essential to obtain information on the size and location of clean water and sewerage assets to safeguard against expensive damage and allow cost-effective service design.

The following records were searched in compiling this report: - the map of public sewers & the map of waterworks. Thames Water Utilities Ltd (TWUL) holds all of these.

This searchprovides maps showing the position, size of Thames Water assets close to the proposed development and also manhole cover and invert levels, where available.

Please note that none of the charges made for this report relate to the provision of Ordnance Survey mapping information. The replies contained in this letter are given following inspection of the public service records available to this company. No responsibility can be accepted for any error or omission in the replies.

You should be aware that the information contained on these plans is current only on the day that the plans are issued. The plans should only be used for the duration of the work that is being carried out at the present time. Under no circumstances should this data be copied or transmitted to parties other than those for whom the current work is being carried out.

Thames Water do update these service plans on a regular basis and failure to observe the above conditions could lead to damage arising to new or diverted services at a later date.

Contact Us

If you have any further queries regarding this enquiry please feel free to contact a member of the team on 0845 070 9148, or use the address below:

Thames Water Utilities Ltd
Property Searches
PO Box 3189
Slough
SL1 4WW

Email: searches@thameswater.co.uk
Web: www.thameswater-propertysearches.co.uk

Waste Water Services

Please provide a copy extract from the public sewer map.

Enclosed is a map showing the approximate lines of our sewers. Our plans do not show sewer connections from individual properties or any sewers not owned by Thames Water unless specifically annotated otherwise. Records such as "private" pipework are in some cases available from the Building Control Department of the relevant Local Authority.

Where the Local Authority does not hold such plans it might be advisable to consult the property deeds for the site or contact neighbouring landowners.

This report relates only to sewerage apparatus of Thames Water Utilities Ltd, it does not disclose details of cables and or communications equipment that may be running through or around such apparatus.

The sewer level information contained in this response represents all of the level data available in our existing records. Should you require any further Information, please refer to the relevant section within the 'Further Contacts' page found later in this document.

For your guidance:

- The Company is not generally responsible for rivers, watercourses, ponds, culverts or highway drains. If any of these are shown on the copy extract they are shown for information only.
- Any private sewers or lateral drains which are indicated on the extract of the public sewer map as being subject to an agreement under Section 104 of the Water Industry Act 1991 are not an ‘as constructed’ record. It is recommended these details be checked with the developer.

Clean Water Services

Please provide a copy extract from the public water main map.

With regard to the fresh water supply, this site falls within the boundary of another water company. For more information, please redirect your enquiry to the following address:

Affinity Water Ltd
Tamblin Way
Hatfield

AL10 9EZ
Tel: 0845 7823333

For your guidance:

- Assets other than vested water mains may be shown on the plan, for information only.
- If an extract of the public water main record is enclosed, this will show known public water mains in the vicinity of the property. It should be possible to estimate the likely length and route of any private water supply pipe connecting the property to the public water network.

Payment for this Search

A charge will be added to your suppliers account.

Further contacts:

Waste Water queries

Should you require verification of the invert levels of public sewers, by site measurement, you will need to approach the relevant Thames Water Area Network Office for permission to lift the appropriate covers. This permission will usually involve you completing a TWOSA form. For further information please contact our Customer Centre on Tel: 0845 920 0800. Alternatively, a survey can be arranged, for a fee, through our Customer Centre on the above number.

If you have any questions regarding sewer connections, budget estimates, diversions, building over issues or any other questions regarding operational issues please direct them to our service desk. Which can be contacted by writing to:

Developer Services (Waste Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

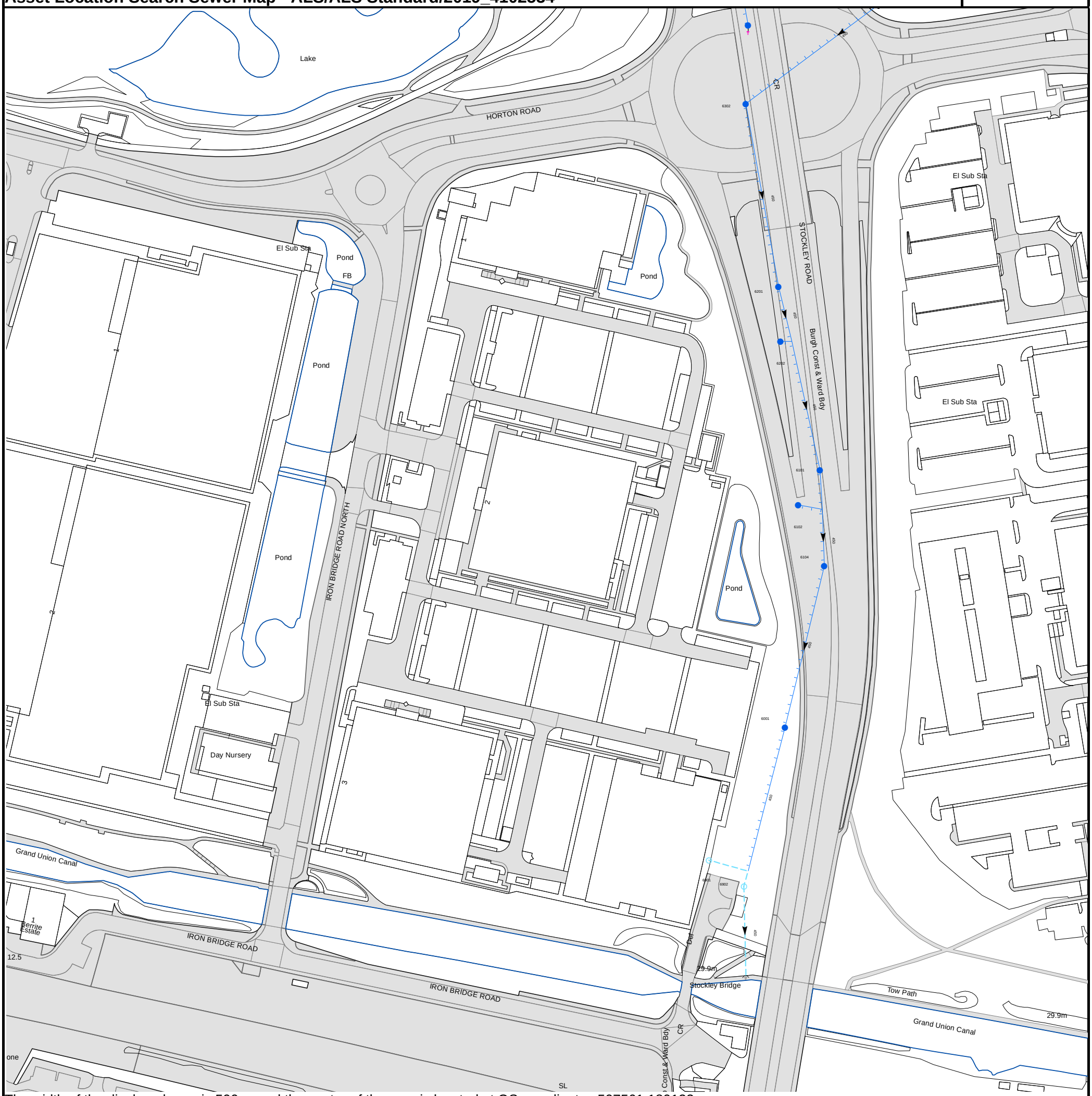
Clean Water queries

Should you require any advice concerning clean water operational issues or clean water connections, please contact:

Developer Services (Clean Water)
Thames Water
Clearwater Court
Vastern Road
Reading
RG1 8DB

Tel: 0800 009 3921
Email: developer.services@thameswater.co.uk

Asset Location Search Sewer Map - ALS/ALS Standard/2019_4102534



The width of the displayed area is 500 m and the centre of the map is located at OS coordinates 507561,180123

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

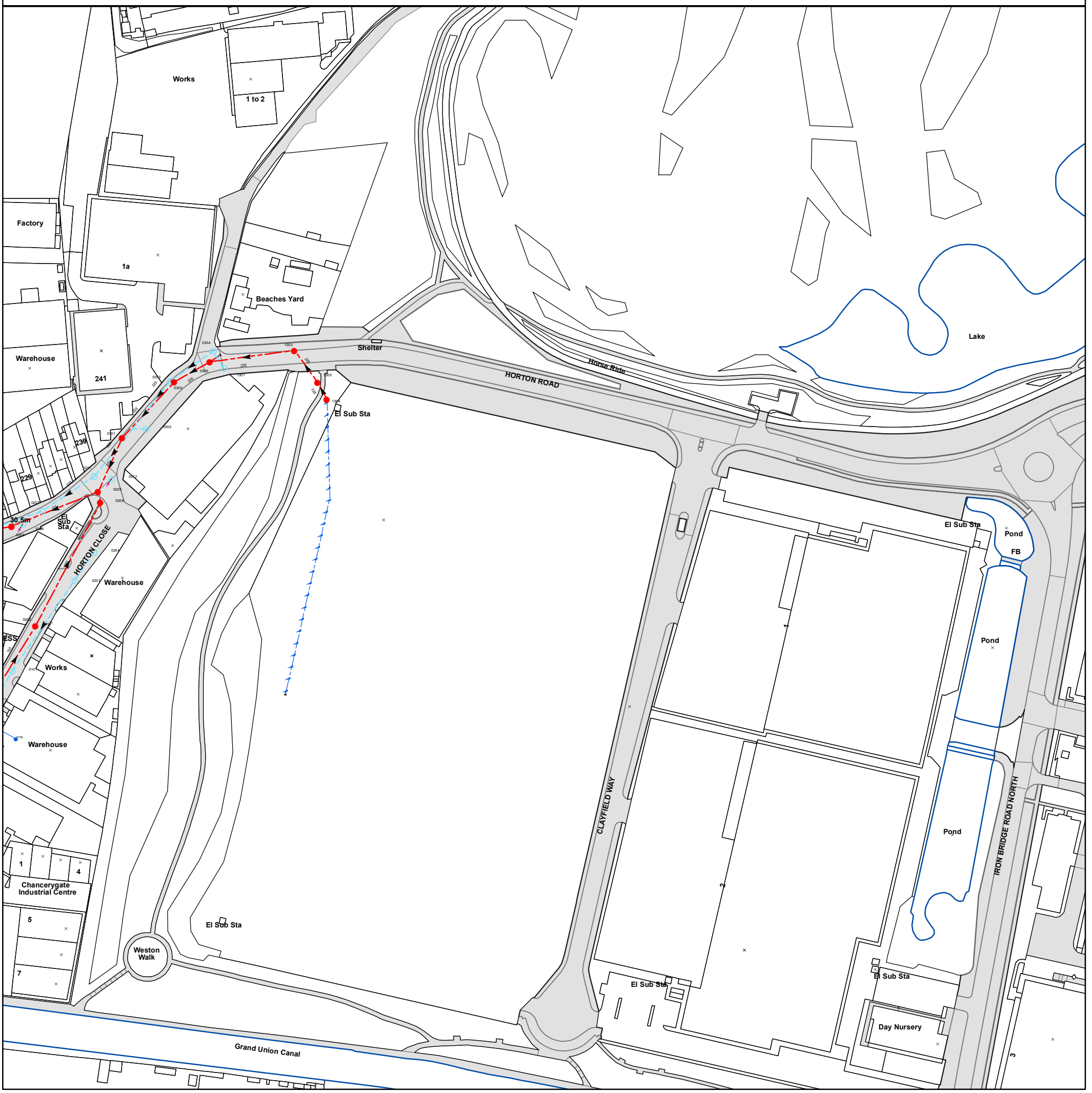
NB. Levels quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates that no survey information is available

Manhole Reference	Manhole Cover Level	Manhole Invert Level
6902	29.83	29.82
6901	n/a	n/a
6001	n/a	n/a
6104	n/a	n/a
6102	n/a	n/a
6101	n/a	n/a
6202	n/a	n/a
6201	n/a	n/a
6302	n/a	n/a
6301	35.4	34.48

The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified and established on site before any works are undertaken.

Based on the Ordnance Survey Map with the sanction of the Controller of H.M Stationary Office License Number 10019345

ALS/ALS Standard/2019_4102534



The position of the apparatus shown on this plan is given without obligation and warranty, and the accuracy cannot be guaranteed. Service pipes are not shown but their presence should be anticipated. No liability of any kind whatsoever is accepted by Thames Water for any error or omission. The actual position of mains and services must be verified before any works are undertaken. Crown copyright Reserved

Scale:	1:1792
Width:	500m
Printed By:	G1KANAGA
Print Date:	01/11/2019
Map Centre:	507250,180250
Grid Reference:	TQ0780SW

Comments:

ALS/ALS Standard/2019_4102534

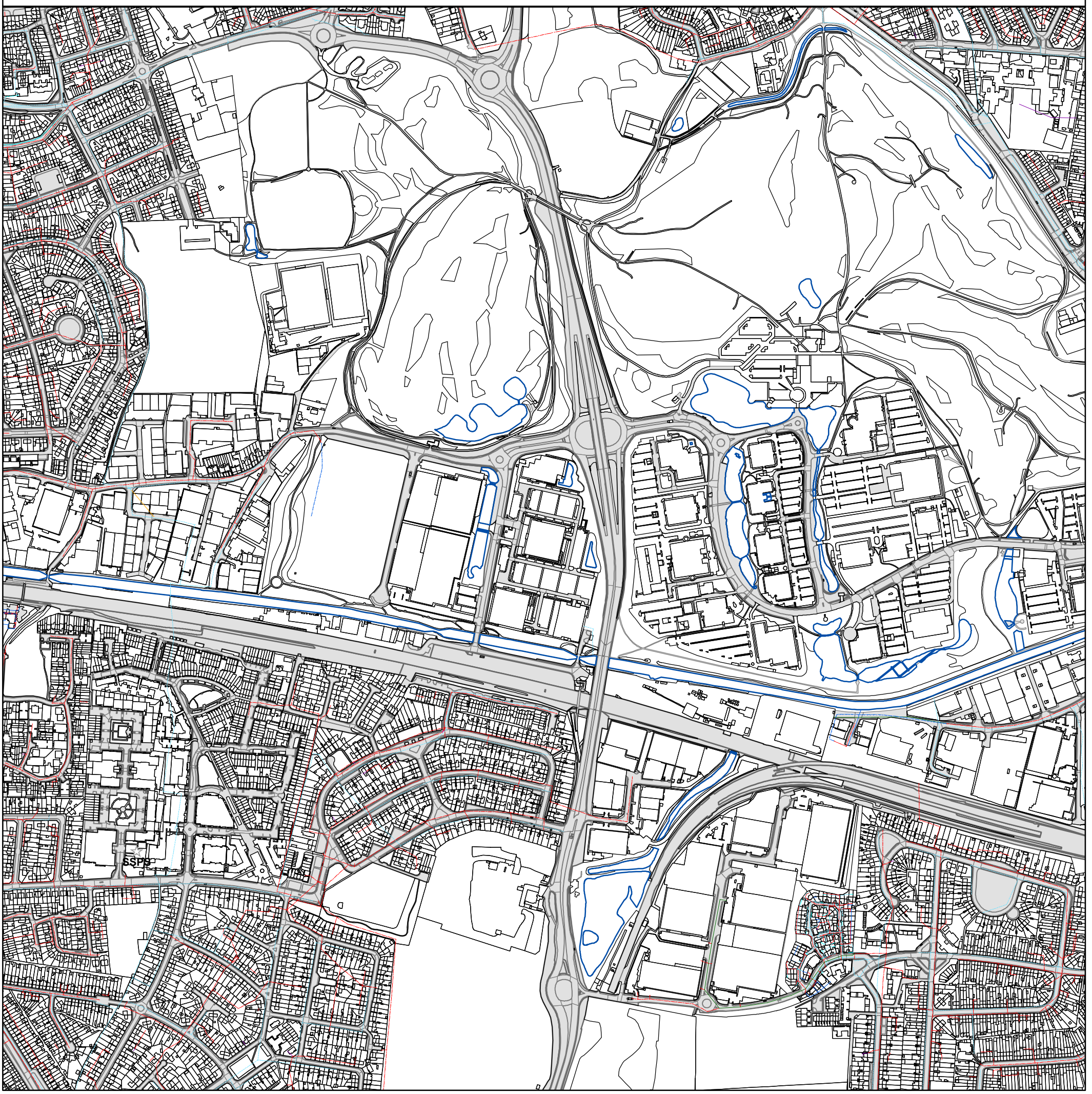
NB: Level quoted in metres Ordnance Newlyn Datum. The value -9999.00 indicates no Survey information is available.

REFERENCE	COVER LEVEL	INVERT LEVEL
0301		30.1
1303	33.08	31.29
0208	31.21	29.51
0305	32.19	30.92
0211	31	29.36
0306	32.48	31.11
0206	30.56	29.24
0207	30.67	29.58
0302	31.72	30.46
1304	34.9	32.28
0209	31.29	30.55

REFERENCE	COVER LEVEL	INVERT LEVEL
0212	31.64	30.19
1305	33.24	32.17
0303	32.13	30.3
0204	30.97	30.27
1301		
0101	30.65	29.68
0202	30.79	29.81
0203	30.99	30.14
011B		
0304		
0205	31.51	29.66

Based on the Ordnance Survey Map with the sanction of the Controller of H.M Stationary Office License Number 10019345

ALS/ALS Standard/2019_4102534



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Print Date:	01/11/2019
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Grid Reference:	TQ0780SE

Comments:

ALS Sewer Map Key

Public Sewer Types (Operated & Maintained by Thames Water)

Foul: A sewer designed to convey waste water from domestic and industrial sources to a treatment works.

Surface Water: A sewer designed to convey surface water (e.g. rain water from roofs, yards and car parks) to rivers or watercourses.

Combined: A sewer designed to convey both waste water and surface water from domestic and industrial sources to a treatment works.

Trunk Surface Water

Trunk Foul

Storm Relief

Trunk Combined

Vent Pipe

Bio-solids (Sludge)

Proposed Thames Surface Water Sewer

Proposed Thames Water Foul Sewer

Gallery

Foul Rising Main

Surface Water Rising Main

Combined Rising Main

Sludge Rising Main

Proposed Thames Water Rising Main

Vacuum

Sewer Fittings

A feature in a sewer that does not affect the flow in the pipe. Example: a vent is a fitting as the function of a vent is to release excess gas.

Air Valve

Dam Chase

Fitting

Meter

Vent Column

Operational Controls

A feature in a sewer that changes or diverts the flow in the sewer. Example: A hydrobrake limits the flow passing downstream.

Control Valve

Drop Pipe

Ancillary

Weir

End Items

End symbols appear at the start or end of a sewer pipe. Examples: an Undefined End at the start of a sewer indicates that Thames Water has no knowledge of the position of the sewer upstream of that symbol, Outfall on a surface water sewer indicates that the pipe discharges into a stream or river.

Outfall

Undefined End

Inlet

Other Symbols

Symbols used on maps which do not fall under other general categories

Public/Private Pumping Station

Change of characteristic indicator (C.O.C.I.)

Invert Level

Summit

Areas

Lines denoting areas of underground surveys, etc.

Agreement

Operational Site

Chamber

Tunnel

Conduit Bridge

Other Sewer Types (Not Operated or Maintained by Thames Water)

Foul Sewer

Surface Water Sewer

Combined Sewer

Gulley

Culverted Watercourse

Proposed

Abandoned Sewer

Notes:

1) All levels associated with the plans are to Ordnance Datum Newlyn.
2) All measurements on the plans are metric.
3) Arrows (on gravity fed sewers) or flecks (on rising mains) indicate direction of flow.
4) Most private pipes are not shown on our plans, as in the past, this information has not been recorded.
5) 'na' or '0' on a manhole level indicates that data is unavailable.
6) The text appearing alongside a sewer line indicates the internal diameter of the pipe in milimetres. Text next to a manhole indicates the manhole reference number and should not be taken as a measurement. If you are unsure about any text or symbology present on the plan, please contact a member of Property Insight on 0845 070 9148.

Terms and Conditions

All sales are made in accordance with Thames Water Utilities Limited (TWUL) standard terms and conditions unless previously agreed in writing.

1. All goods remain in the property of Thames Water Utilities Ltd until full payment is received.
2. Provision of service will be in accordance with all legal requirements and published TWUL policies.
3. All invoices are strictly due for payment 14 days from due date of the invoice. Any other terms must be accepted/agreed in writing prior to provision of goods or service, or will be held to be invalid.
4. Thames Water does not accept post-dated cheques-any cheques received will be processed for payment on date of receipt.
5. In case of dispute TWUL`s terms and conditions shall apply.
6. Penalty interest may be invoked by TWUL in the event of unjustifiable payment delay. Interest charges will be in line with UK Statute Law 'The Late Payment of Commercial Debts (Interest) Act 1998'.
7. Interest will be charged in line with current Court Interest Charges, if legal action is taken.
8. A charge may be made at the discretion of the company for increased administration costs.

A copy of Thames Water's standard terms and conditions are available from the Commercial Billing Team (cashoperations@thameswater.co.uk).

We publish several Codes of Practice including a guaranteed standards scheme. You can obtain copies of these leaflets by calling us on 0800 316 9800

If you are unhappy with our service you can speak to your original goods or customer service provider. If you are not satisfied with the response, your complaint will be reviewed by the Customer Services Director. You can write to her at: Thames Water Utilities Ltd. PO Box 492, Swindon, SN38 8TU.

If the Goods or Services covered by this invoice falls under the regulation of the 1991 Water Industry Act, and you remain dissatisfied you can refer your complaint to Consumer Council for Water on 0121 345 1000 or write to them at Consumer Council for Water, 1st Floor, Victoria Square House, Victoria Square, Birmingham, B2 4AJ.

Ways to pay your bill

Credit Card	**BACS Payment**	**Telephone Banking**	**Cheque**
Call **0845 070 9148** quoting your invoice number starting CBA or ADS / OSS	Account number **90478703** Sort code **60-00-01** A remittance advice must be sent to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW.** or email **ps.billing@thameswater.co.uk**	By calling your bank and quoting: Account number **90478703** Sort code **60-00-01** and your invoice number	Made payable to '**Thames Water Utilities Ltd**' Write your Thames Water account number on the back. Send to: **Thames Water Utilities Ltd., PO Box 3189, Slough SL1 4WW** or by DX to **151280 Slough 13**

Thames Water Utilities Ltd Registered in England & Wales No. 2366661 Registered Office Clearwater Court, Vastern Rd, Reading, Berks, RG1 8DB.

Search Code

IMPORTANT CONSUMER PROTECTION INFORMATION

This search has been produced by Thames Water Property Searches, Clearwater Court, Vastern Road, Reading RG1 8DB, which is registered with the Property Codes Compliance Board (PCCB) as a subscriber to the Search Code. The PCCB independently monitors how registered search firms maintain compliance with the Code.

The Search Code:

- provides protection for homebuyers, sellers, estate agents, conveyancers and mortgage lenders who rely on the information included in property search reports undertaken by subscribers on residential and commercial property within the United Kingdom
- sets out minimum standards which firms compiling and selling search reports have to meet
- promotes the best practise and quality standards within the industry for the benefit of consumers and property professionals
- enables consumers and property professionals to have confidence in firms which subscribe to the code, their products and services.

By giving you this information, the search firm is confirming that they keep to the principles of the Code. This provides important protection for you.

The Code's core principles

Firms which subscribe to the Search Code will:

- display the Search Code logo prominently on their search reports
- act with integrity and carry out work with due skill, care and diligence
- at all times maintain adequate and appropriate insurance to protect consumers
- conduct business in an honest, fair and professional manner
- handle complaints speedily and fairly
- ensure that products and services comply with industry registration rules and standards and relevant laws
- monitor their compliance with the Code

Complaints

If you have a query or complaint about your search, you should raise it directly with the search firm, and if appropriate ask for any complaint to be considered under their formal internal complaints procedure. If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award compensation of up to £5,000 to you if the Ombudsman finds that you have suffered actual loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the code.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs or to the PCCB.

TPOs Contact Details

The Property Ombudsman scheme
Milford House
43-55 Milford Street
Salisbury
Wiltshire SP1 2BP
Tel: 01722 333306
Fax: 01722 332296
Web site: www.tpos.co.uk
Email: admin@tpos.co.uk

You can get more information about the PCCB from www.propertycodes.org.uk

PLEASE ASK YOUR SEARCH PROVIDER IF YOU WOULD LIKE A COPY OF THE SEARCH CODE

Mountbatten House
Basing View
Basingstoke, Hampshire
RG21 4HJ

wsp.com