



VIRTUS HAYES LIMITED

ENVIRONMENTAL RISK ASSESSMENT

Hayes LON2





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CONTENTS

1	INTRODUCTION	1
1.1	AUTHORISATION	1
1.2	BACKGROUND INFORMATION	1
1.3	OBJECTIVES OF THE ENVIRONMENTAL RISK ASSESSMENT (ERA)	1
1.4	EMERGENCY PREPAREDNESS AND RESPONSE	2
1.5	RECORD KEEPING	3
1.6	RESPONSIBILITY	3
2	SITE SETTING AND RECEPTORS	4
2.1	INSTALLATION ADDRESS	4
2.2	SITE LOCALITY	4
2.3	SURROUNDING LAND USE	5
2.4	RAW MATERIAL AND WASTE INVENTORY	6
2.5	INDUSTRIAL AND COMMERCIAL RECEPTORS	7
2.6	RESIDENTIAL RECEPTORS	7
2.7	GEOLOGY, HYDROLOGY AND HYDROGEOLOGY	7
2.8	NATURE AND HERITAGE CONSERVATION	10
2.9	WOODLANDS	12
2.10	CULTURAL HERITAGE	13
3	ENVIRONMENTAL RISK ASSESSMENT	15
3.1	SCOPE	15
3.2	METHODOLOGY	15
3.3	AIR EMISSIONS RISK ASSESSMENT	17
3.4	ODOUR RISK ASSESSMENT	19



3.5	NOISE AND VIBRATION RISK ASSESSMENT	21
3.6	UNCONTROLLED OR UNINTENDED FUGITIVE EMISSIONS RISK ASSESSMENT	23
3.7	VISIBLE EMISSIONS RISK ASSESSMENT	25
3.8	DISCHARGES RISK ASSESSMENT	27
3.9	ACCIDENT RISK ASSESSMENT	30

TABLES

Table 2-1 – Surrounding Land Use	5
Table 2-2 – Raw Material and Waste Inventory	6
Table 2-3 – Licensed Groundwater Abstractions within 2 km of the Site (Landmark Envirocheck, 2022)	8
Table 2-4 – Surface Water Features within 1 km of the Site (Landmark Envirocheck, 2022)	9
Table 2-5 – Licensed Surface Water Abstraction within 2 km of the Site (Landmark Envirocheck, 2022)	9
Table 2-6 – Nature and Heritage Conservation Sites (Environment Agency, 2022)	10
Table 3-1 – Air Emissions Risk Assessment	17
Table 3-2 – Odour Risk Assessment	19
Table 3-3 – Noise and Vibration Risk Assessment	21
Table 3-4 – Uncontrolled or Unintended Fugitive Emissions Risk Assessment	23
Table 3-5 – Visible Emissions Risk Assessment	25
Table 3-6 – Discharges Risk Assessment	27
Table 3-7 – Accident Risk Assessment	30

FIGURES

Figure 1-1 - Emergency Preparedness Response Process	3
Figure 2-1 - Site Locality	4
Figure 2-1 - Site Locality	5
Figure 2-2 - Surrounding Landuse	6



Figure 2-3 - Surface Water Features	9
Figure 2-4 - Nature and Heritage Conservation Sites (magic.defra.gov.uk, 2022)	11
Figure 2-5 - Local Wildlife Sites (Environment Agency, 2022)	11
Figure 2-6 – Sites of Special Scientific Interest and Nitrate Vulnerable Zone (magic.defra.gov.uk, 2022)	12
Figure 2-7 – Woodlands (magic.defra.gov.uk, 2022)	13
Figure 2-8 - Cultural Heritage (magic.defra.gov.uk, 2022)	14



1 INTRODUCTION

1.1 AUTHORISATION

On the instruction of VIRTUS HAYES LIMITED (hereafter referred to as “Virtus”), an Environmental Risk Assessment (ERA) has been compiled for the London 2 (LON2) Data Centre located in Hayes, West London (hereafter referred to as the “Site”). This ERA has been undertaken as part of the Environmental Permit application process.

1.2 BACKGROUND INFORMATION

The LON2 Data Centre is connected to the local electricity transmission network via multiple grid connections. The nature of the Data Centre and the requirement to always have an available energy supply has resulted in the installation of ultra-low sulphur diesel-fired standby generators at the Site.

LON2 (currently 12MW IT load) has 8 (eight) diesel-fired standby generators for Low Voltage generation installed, with a further (1) one proposed.

The Site will be operated independently but managed under a common management system and management structure as other Virtus Data Centres across North London.

The generators will provide power to the Site in the event of an emergency situation such as a failure of the local electricity transmission network, or an internal component failure requiring disconnection from the grid. During such events there is a potential for a delay between fault detection and initial operation of these back-up generators; hence the initial uninterruptible power supply is provided by on-site battery arrays in order to cover this ‘time gap’ and the consequent loss or reduction in the power supply to the data servers.

The total rated thermal input (under standby power operating conditions) of all the generators across the LON2 Data Centre will be 51.00 MW(th) on completion and, as such, will be required to be operated as a Part A1 combustion activity installation under an Environmental Permit as per the Environmental Permitting (England and Wales) Regulations 2016, as amended.

1.3 OBJECTIVES OF THE ENVIRONMENTAL RISK ASSESSMENT (ERA)

The aim of the ERA is to identify any significant risks associated with the LON2 Data Centre and to demonstrate how the risk of environmental pollution or harm will be minimised through appropriate measures and Best Available Techniques.



This ERA has been undertaken in accordance with GOV.UK web-based guidance Risk assessments for your environmental permit¹ (updated January 2019). The ERA:

- Identifies potential accidents and the measures in place to minimise them happening;
- Identifies events or equipment failures that could damage the environment;
- Considers the likely frequency of how often these events or failures are likely to occur; and,
- Details the consequences if they do occur.

The guidance referred to above requires all receptors that are near the Site and those that could reasonably be affected by the LON2 Data Centre to be identified and considered as part of the ERA.

1.4 EMERGENCY PREPAREDNESS AND RESPONSE

EMERGENCY RESPONSE PLAN

The LON2 Data Centre has in place procedures for managing accidents, incidents and complaints. These will dictate the actions to take in the event of these occurring and will be part of the Site Environmental Management System (EMS).

The process of managing and responding to environmental incidents will be incorporated into the existing overall Incident Management Process (Chapter 2 of the Virtus Operations Manual) controlled via the Virtus Service Management Centre. All incidents will be reported to the Compliance Manager, who will be responsible for assessment of actions completed and updating of procedures and escalating to a business continuity plan where necessary.

Virtus has an Emergency Preparedness Response Process detailed in Figure 1-1. The process identifies risks under the headings of operational (environmental), third party (environmental), standards/statutory risk, and risks arising from natural disasters. This will be reviewed and updated as necessary.

¹ <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit#risk-assessments-for-bespoke-permits>

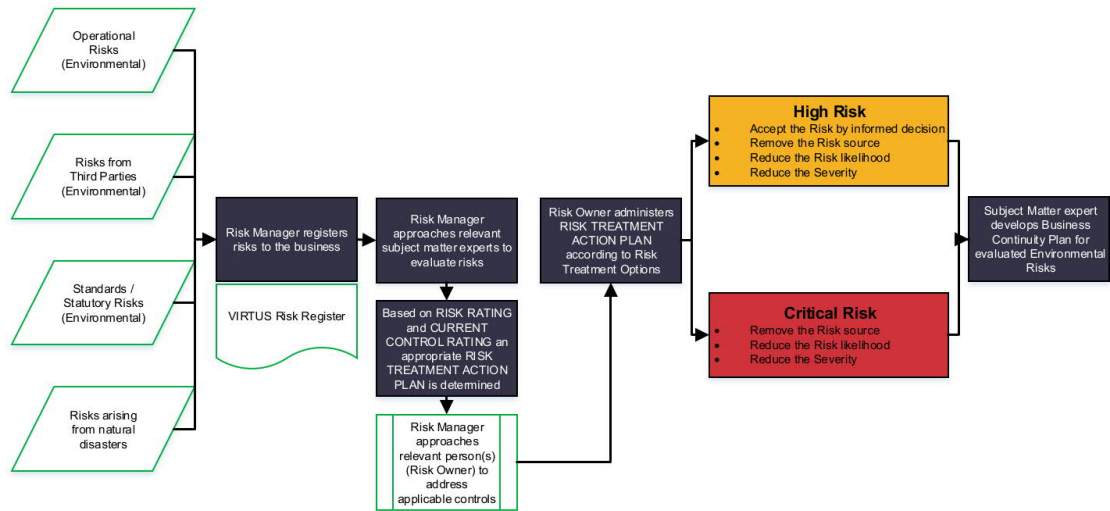


Figure 1-1 - Emergency Preparedness Response Process

1.5 RECORD KEEPING

Records of all environmental accidents, incidents and complaints will be kept and be accessible to the management team.

1.6 RESPONSIBILITY

The ERA is the responsibility of the Compliance Manager.

2 SITE SETTING AND RECEPTORS

2.1 INSTALLATION ADDRESS

The installation address is:

LON2 Data Centre

Western International Park

Hayes Road

Southall

UB2 5XX

The OS National Grid Reference of the approximate centre of the LON2 Data Centre is TQ 10860 78698.

2.2 SITE LOCALITY

LON2 is located in Hayes, west London and is part of the London Borough of Hillingdon. The Site is located approximately 4.4 km north-east of Heathrow Airport. The Site is accessed via Hayes Road, which then joins 'The Parkway' (A312 dual carriageway in Hayes) (Figure 2-1 and Figure 2-2).

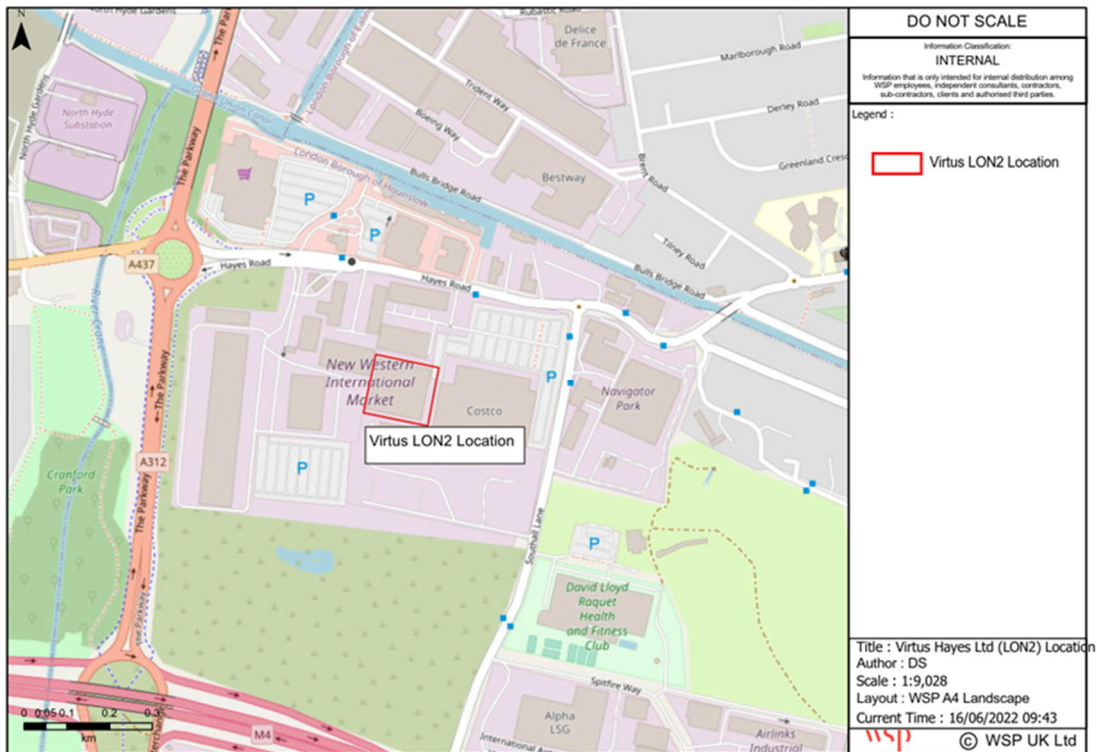


Figure 2-1 - Site Locality



Figure 2-2 - Site Boundary

2.3 SURROUNDING LAND USE

The surrounding land use is detailed in Table 2-1 and Figure 2-3.

Table 2-1 – Surrounding Land Use

Boundary	Land Use
North	Surrounding land use to the north of the Site include business premises namely electronic and home suppliers. Hayes Road runs beyond these premises with a supermarket and repair shops located beyond Hayes Road. The Grand Union Canal is located beyond these premises. The nearest residential receptor north-east of the Site resides in the village of Southall Green approximately 290 m from the Site.
South	Surrounding land use to the south of the Site include business premises namely import / export company and the western international market, and industrial premises namely a cement works. Beyond these premises is an open grass area with a water body followed by 'The Parkway' (A312) which joins the M4 travelling east. The nearest residential receptor south of the Site resides approximately 785 m from the Site.
East	Surrounding land use to the east of the Site includes a warehouse premise and associated parking. Beyond this premises is Southall Lane followed by corporate offices and food importers.

Boundary	Land Use
	The nearest residential receptor east of the Site resides approximately 415 m from the Site.
West	<p>Surrounding land use to the west of the Site includes food wholesalers. Beyond these premises is 'The Parkway' (A312) followed by Deciduous Woodland and the River Crane.</p> <p>The nearest residential receptor west of the Site resides approximately 490 m from the Site.</p>



Figure 2-3 - Surrounding Landuse

2.4 RAW MATERIAL AND WASTE INVENTORY

Table 2-2 details the raw material and waste inventory for the Site.

Table 2-2 – Raw Material and Waste Inventory

Inventory	Description
Raw Material	
Ultra low sulphur gas oil	<p>Each generator set has/will have a dedicated bulk fuel belly tank and a day tank. These are/will be stored underneath each generator set and comprise the following:</p> <p>- 8 x 21,666 litre belly tanks (installed)</p>

	<ul style="list-style-type: none"> - 8 x 1,200 litre day tanks (installed) - 1 x 21,666 litre belly tank (designed) - 1 x 1,200 litre day tank (designed) <p>(Maximum capacity = 205,794 litres)</p>
Waste	
Oil/Fuel Hazardous Waste	Following the containment of spill/leaked material, the Facilities Management team will arrange for a controlled clean up and disposal.

2.5 INDUSTRIAL AND COMMERCIAL RECEPTORS

Industrial and commercial receptors surround the Site with a variety of business operations in the area.

2.6 RESIDENTIAL RECEPTORS

Residential receptors are located beyond the industrial and commercial receptors described above with typical residential amenities including schools and other educational facilities, supermarkets / grocers, sports and community centres, retail facilities and some restaurants. The nearest residential receptor north-east of the Site resides in the village of Southall Green approximately 290 m from the Site.

2.7 GEOLOGY, HYDROLOGY AND HYDROGEOLOGY

GEOLOGY

The Geology of Britain Viewer (displaying BGS data) indicates that the Site is underlain by superficial deposits of sand and gravel (Lynch Hill Gravel Member). The underlying solid bedrock geology comprises the London Clay Formation – clay and silt.

HYDROGEOLOGY

Groundwater vulnerability data provided by the Environment Agency within the Landmark Envirocheck Report dated 24 May 2022 indicates that the Superficial Lynch Hill Gravel Member is classified as a High Vulnerability, Principal Aquifer. The London Clay Formation is classified as Unproductive Strata.

There is 1 groundwater abstraction located on Site for evaporative cooling (National Grid Reference: 510876; 178731). Five licensed groundwater abstractions are located within 2 km of the Site (Table 2-3). The Landmark Envirocheck Report dated 24 May 2022 indicates that the Site does not lie within a currently designated groundwater Source Protection Zone.

**Table 2-3 – Licensed Groundwater Abstractions within 2 km of the Site
(Landmark Envirocheck, 2022)**

Licensee	Details	Approximate Distance from Site (m)	Direction from Site
Usc Europe UK Ltd	Other Industrial/ Commercial/Public Services: Non-Evaporative Cooling	669	North
Chancerygate Group Limited	Other Industrial/ Commercial/Public Services: Non-Evaporative Cooling	707	North-East
Nestle UK Limited	Other Industrial/ Commercial/Public Services: Evaporative Cooling	778	North-West
Harleyford Aggregates Ltd	Mineral Products: Mineral Washing	1552	South-West
Thorn Emi Electronics Ltd	Manufacture (Boiler)	1694	North-West

HYDROLOGY

The Yeading Brook becomes the River Crane near the Grand Union Canal in Hayes. The River Crane runs south through Cranford Park, past the Heathrow Airport towards Whitton and Twickenham. The river then travels through St Margarets and joins the Thames at Isleworth. The River Crane is located approximately 430 m west of the Site (Figure 2-4).

The Grand Union Canal is located approximately 300 m north of the Site (Figure 2-4).

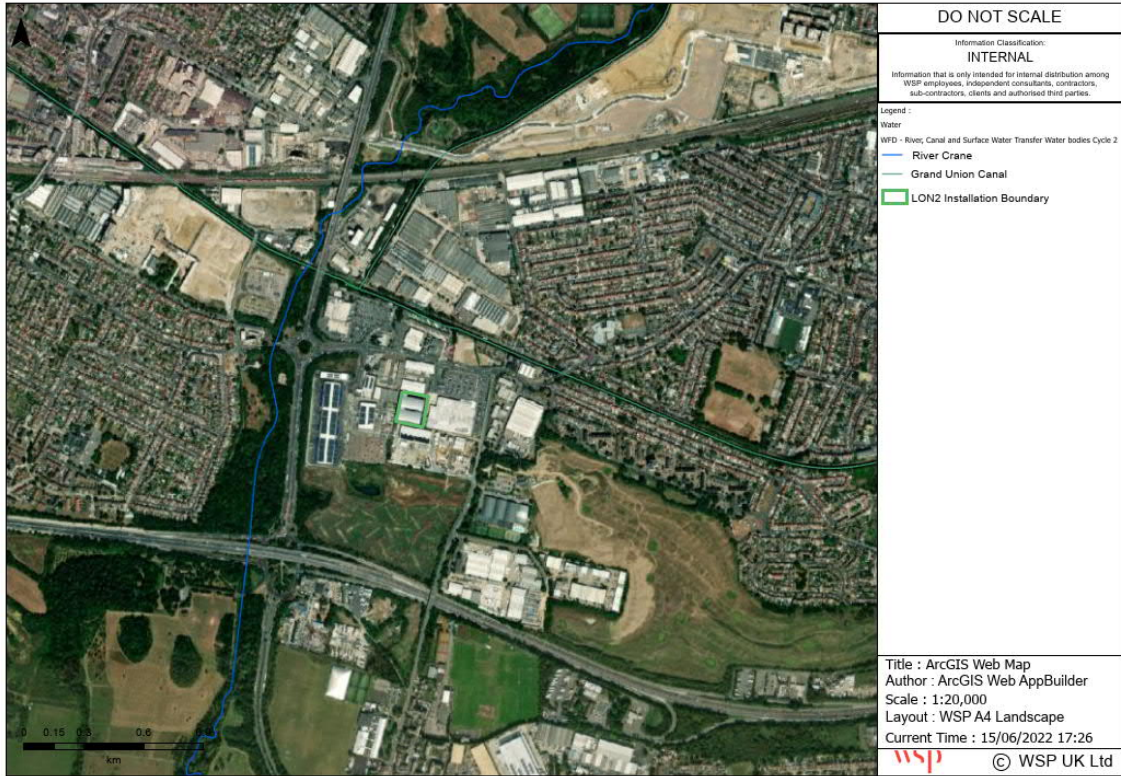


Figure 2-4 - Surface Water Features

The Landmark Envirocheck Report dated 24 May 2022 indicates that there is one surface water feature within 1 km of the Site (Table 2-4).

Table 2-4 – Surface Water Features within 1 km of the Site (Landmark Envirocheck, 2022)

Surface Water Feature	Approximate Distance from Site (m)	Direction from Site	National Grid Reference
Un-named feature	185	North-East	510980; 178905

The Landmark Envirocheck Report indicates that there is one surface water abstraction within 2 km of the Site (Table 2-5).

Table 2-5 – Licensed Surface Water Abstraction within 2 km of the Site (Landmark Envirocheck, 2022)

Licensee	Details	Approximate Distance from Site (m)	Direction from Site
Canal and River Trust	Other Industrial/Commercial/Public Services: Non-Evaporative Cooling	1937	North-West

2.8 NATURE AND HERITAGE CONSERVATION

A nature and heritage conservation screening report dated 10/06/2022 was provided by the Environment Agency (Appendix A). Table 2-6 outlines the nature and heritage conservation sites identified within a specified screening distance from the Site. These are presented in Figure 2-5 and Figure 2-6 respectively.

Table 2-6 – Nature and Heritage Conservation Sites (Environment Agency, 2022)

Designations	Screening Distance (km)	Nature and Heritage Conservation Sites	Figure Reference
Special Areas of Conservation	10	Richmond Park	Figure 2-5
Special Protection Area	10	South West London Waterbodies	
Ramsar	10	South West London Waterbodies	
Local Wildlife Sites	2	Airlinks Ponds	Figure 2-6
		Crane Corridor	
		Cranford Countryside Park and Open Space	
		Cranford Lane Gravel Workings	
		Hartlands Wood and Lower Park Farm	
		Havelock Cemetery	
		Lake Farm Country Park	
		London's Canals	
		Thornclyffe Rough	
		Yeading Brook, Minet Country Park and Hitherbroom Park	

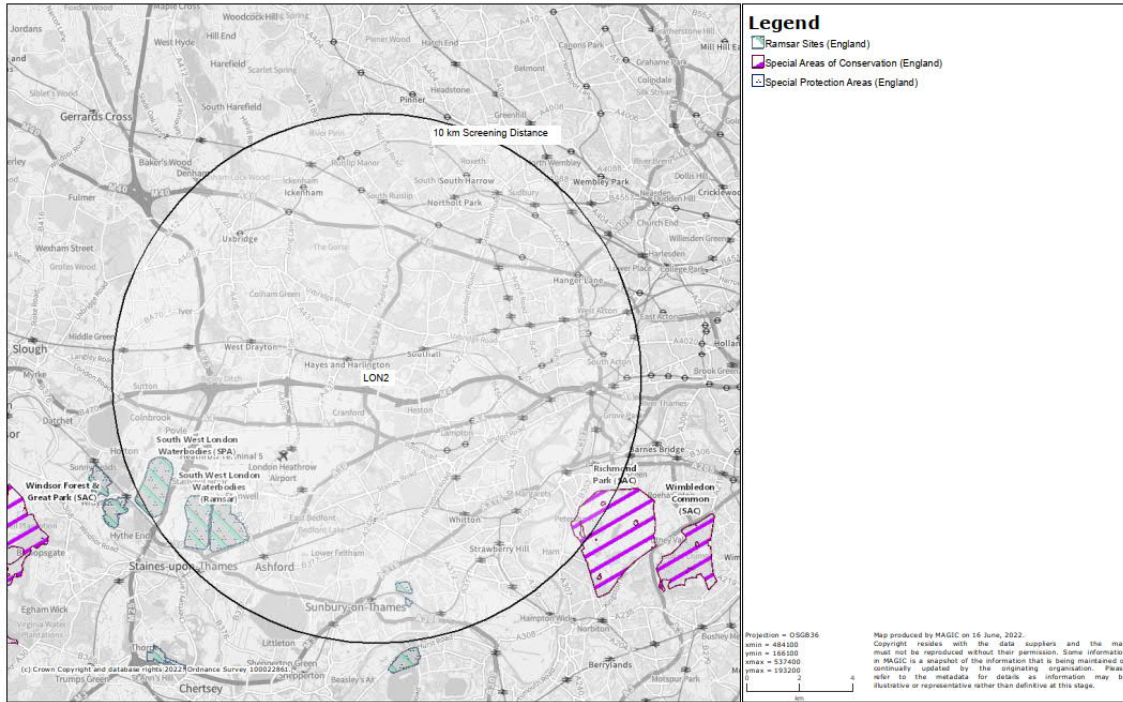


Figure 2-5 - Nature and Heritage Conservation Sites (magic.defra.gov.uk, 2022)

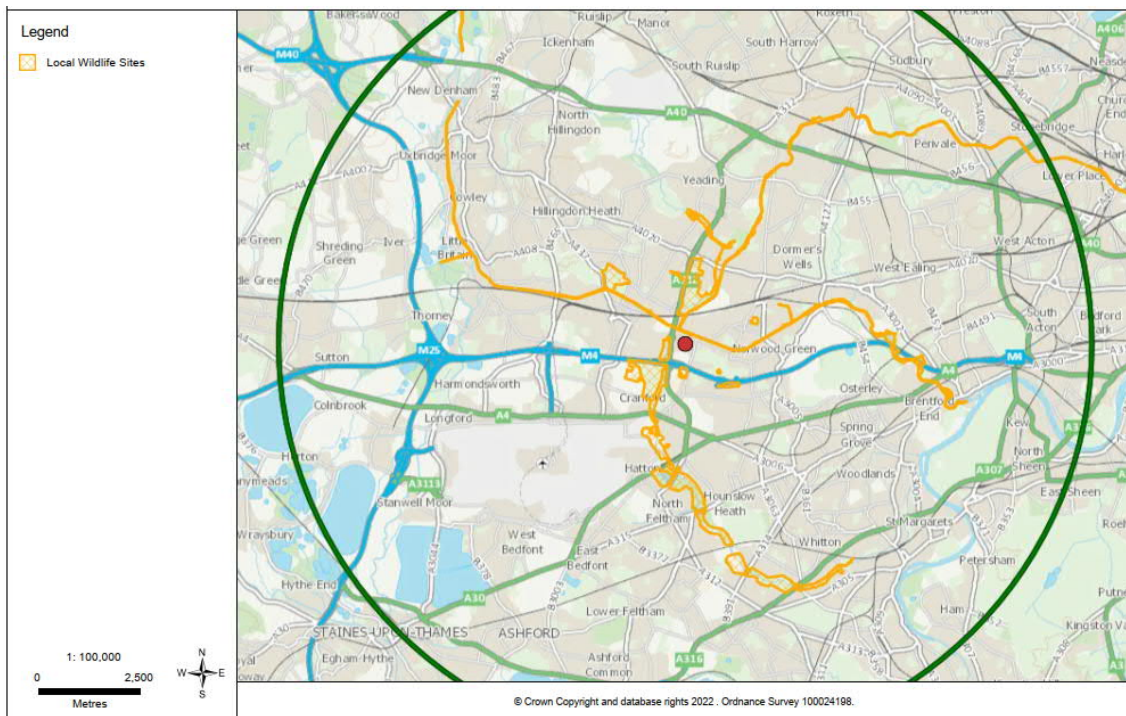


Figure 2-6 - Local Wildlife Sites (Environment Agency, 2022)

The European Eel has been identified as a protected species with its migratory route located in the Grand Union Canal (Environmental Agency, 2022).

Ten Sites of Special Scientific Interest have been identified within a screening distance of 10 km from the Site (Figure 2-7). These include the following:

- Ruislip Woods;
- Denham Lock Wood;
- Fray’s Farm Meadows;
- Kingcup Meadows and Oldhouse Wood;
- Wraysbury Reservoir;
- Staines Moor;
- Kempton Park Reservoirs;
- Bushy Park and Home Park;
- Syon Park; and,
- Richmond Park.

There is 1 Nitrate Vulnerable Zone within a screening distance of 10 km (Figure 2-7), namely Beverley Brook (Motspur Park to Thames) and Pyl Brook at West Barnes.

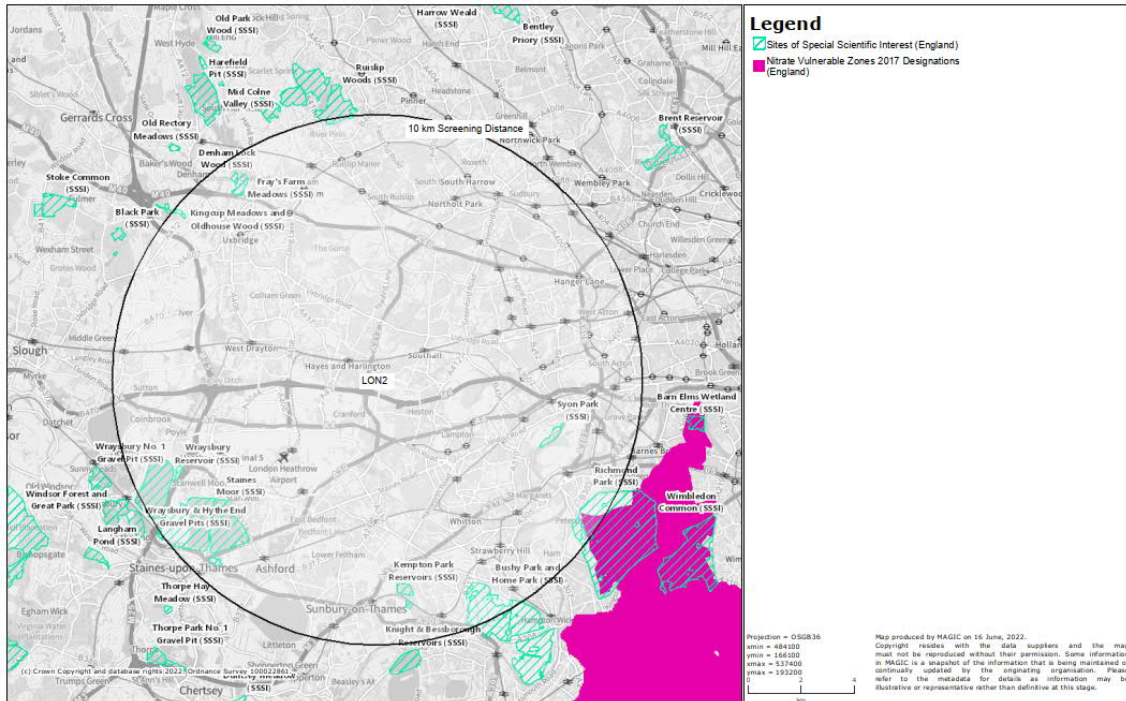


Figure 2-7 – Sites of Special Scientific Interest and Nitrate Vulnerable Zone (magic.defra.gov.uk, 2022)

2.9 WOODLANDS

No Ancient and Semi-Natural Woodland is located within a 2 km screening distance of the Site. The closest Ancient and Semi-Natural Woodland (Gutteridge Wood) is located approximately 5.6 km north-north-west of the Site. Deciduous Woodland is evident within a 1 km screening distance of the Site, the majority to the north and west of the Site. One Traditional Orchard is located approximately 885 m south-west of the

Site. The closest wood-pasture and Parkland BAP Priority Habitat is located approximately 2.65 km east of the Site (Figure 2-8).



Figure 2-8 – Woodlands (magic.defra.gov.uk, 2022)

2.10 CULTURAL HERITAGE

Twelve Grade II Listed Buildings are located within a 1 km screening distance of the Site, namely Bull’s Bridge Number 21 over Grand Union Canal and Grand Union Canal (Paddington Branch) Junction, Brentford Fountain, Featherstone Boys School War Memorial, The Rectory, Cranford Park Bridge, HA HA Walls to south and south-west of Cranford House Stables, cellars of former Cranford House, curved wall to south of west end of Stables, wall to south of east end of Stables, Cranford House Stables, walls to north of Stables, garden walls to west of Cranford House Stables.

One Grade II* Listed Building namely Church of St Dunstan, is located within a 1 km screening distance of the Site.

No Grade I Listed Buildings are located within a 2 km screening distance of the Site. The nearest Grade I Listed Building is located approximately 3.5 km east of the Site, namely the Temple in Osterley Park.

No scheduled monuments are located within a 2 km screening distance of the Site. The closest scheduled monument is located approximately 3.5 km east-north-east of the Site, namely Windmill Bridge.

There are no World Heritage Sites within a 2 km screening distance of the Site. The closest World Heritage Site is located approximately 6.1 km south-east of the Site, namely Royal Botanic Gardens, Kew.

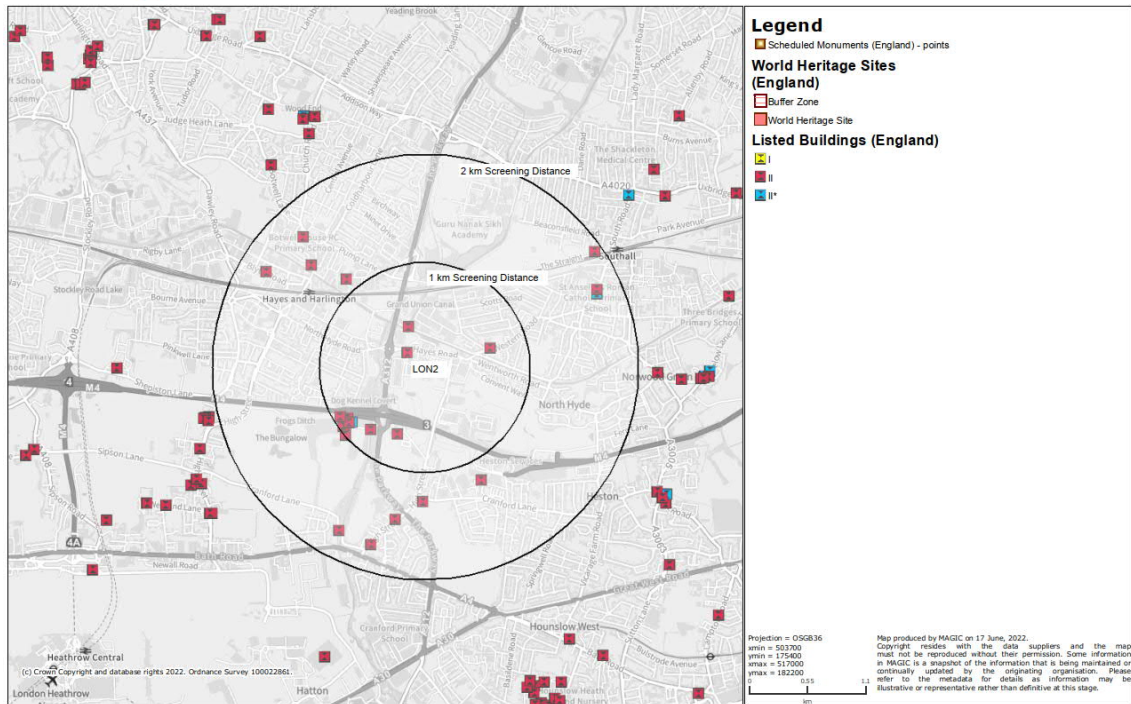


Figure 2-9 - Cultural Heritage (magic.defra.gov.uk, 2022)

3 ENVIRONMENTAL RISK ASSESSMENT

3.1 SCOPE

The environmental risk assessment in the following sections has been based on GOV.UK Guidance <https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>. The environmental risks associated with the LON2 Data Centre are considered for the following potential impacts:

- Air emissions;
- Odour;
- Noise and vibration;
- Uncontrolled or unintended fugitive emissions;
- Visible emissions;
- Discharges; and,
- Accidents.

3.2 METHODOLOGY

The following steps outline the methodology that has been followed in the undertaking of the ERA associated with the LON2 Data Centre environmental permit application.

Step One- Identification of Risks

The key environmental risk areas have been identified in Section 3.1.

Step Two- Identification of Receptors

Section 2 of this document describes the site setting and the land uses in the vicinity of the Site. This information has been used to identify the main receptors that could be potentially at risk from the activities being applied for in the environmental permit application.

Step Three- Identification of Pathways between Sources and Receptors

For each of the identified hazards associated with the activities being applied for in the environmental permit application, the ERA has considered the pathways through which each hazard may impact on a sensitive receptor identified under Step Two. Where such pathways exist, the risks of potentially significant impacts have been assessed along with any controls and mitigation in place.

Step Four- Assessment of Risks

The risks from each potential impact is assessed according to the activity being undertaken.

Step Five- Controls for Risks

The GOV.UK Guidance states: “You’ll need to show how you’re managing any risks appropriately by controlling and monitoring your emissions and through your management system.”



The ERA is required to demonstrate how the risk of pollution or harm can be mitigated and the control measures that are in place as part of the environmental management system to reduce residual risks.

Step Six- Presentation of the Results

The findings of the ERA are presented in Table 3-1 to Table 3-7.



3.3 AIR EMISSIONS RISK ASSESSMENT

The risks associated with air emissions from the Site are considered to be low. The risk assessment with regards to air emissions is presented in Table 3-1.

Table 3-1 – Air Emissions Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Combustion emissions (NO _x , CO, particulate matter, products of incomplete combustion) released by standby generators during the testing regime	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air	<p>An Air Quality Impact Assessment is currently being undertaken to determine the potential impact of air emissions on nearby receptors</p> <p>Stack heights exceed the building height</p> <p>Testing periods will continue to be strictly limited in duration</p> <p>Testing will not be undertaken concurrently</p> <p>Testing will not be undertaken during peak hours</p>	Low- Mitigation measures in place should ensure that exposure is minimised	Very Low	Low



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
Combustion emissions (NOx, CO, particulate matter, products of incomplete combustion) released by standby generators during periods of emergency back-up situations	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air	<p>An Air Quality Impact Assessment is currently being undertaken to determine the potential impact of air emissions on nearby receptors</p> <p>Stack heights exceed the building height</p> <p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>The generators will only operate during maintenance or grid failures as they are for emergency backup only. In the event of one failing during operation it would immediately be shut down</p> <p>Record and act on complaints in accordance with the EMS</p>	Very Low - Mitigation measures in place should ensure that exposure is minimised	Low – increased exposure to NO ₂ of residents and workers	Low



3.4 ODOUR RISK ASSESSMENT

The risks associated with odour from the Site are considered to be very low. The risk assessment with regards to odour is presented in Table 3-2.

Table 3-2 – Odour Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Odour from the displacement of gases to air during filling of ultra low sulphur gas oil	- Local business employees	Air	<p>Virtus has an oil/fuel delivery procedure. This will continue to be implemented each time the fuel oil storage tanks require filling. Included in this procedure is the requirement for any 'at risk' drains to be covered to prevent any illegal discharges and spill kits must be positioned nearby</p> <p>The Nine Point Fuel/Chemical Spill Procedure will continue to be implemented</p> <p>Pipework between generators allows for the transfer of diesel from generator to generator.</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Increased nuisance to residents and workers	Very Low provided equipment is operated in accordance with manufacturers recommendations



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>These are routinely kept closed</p> <p>The fuel delivery pipe connections are in an enclosed locked box over a bunded and covered area</p>			
Odour from the process due to failure of equipment, accident or other abnormal operation	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>The generators will only operate during maintenance or grid failures as they are for emergency backup only. In the event of one failing during operation it would immediately be shut down</p> <p>Any unusual odours to be investigated immediately in accordance with procedures within the EMS</p> <p>Record and act on complaints in accordance with the EMS</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Increased nuisance to residents and workers	Very Low provided equipment is operated in accordance with manufacturers recommendations



3.5 NOISE AND VIBRATION RISK ASSESSMENT

The risks associated with noise and vibration from the Site are considered to be very low. The risk assessment with regards to noise and vibration is presented in Table 3-3.

Table 3-3 – Noise and Vibration Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Noise from normal operation of diesel generators	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air (noise propagation)	<p>A Noise Impact Assessment is currently being undertaken to determine the potential impact of noise on nearby receptors</p> <p>Generator sets positioned within Generator Room 1 and Generator Room 2</p> <p>The generators will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Any unusual noise or vibration to be investigated</p>	Low- Mitigation measures in place should ensure that exposure is minimised	Very Low – Increased nuisance to residents and workers	Very Low provided equipment is operated in accordance with manufacturers recommendations



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>immediately in accordance with procedures within the EMS</p> <p>Record and act on complaints in accordance with the EMS</p>			
Noise and vibration from diesel generators due to failure of equipment, accident or other abnormal operation	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air (noise propagation)	<p>Any unusual noise or vibration to be investigated immediately in accordance with procedures within the EMS</p> <p>Record and act on complaints in accordance with the EMS</p>	Low- Mitigation measures in place should ensure that exposure is minimised	Very Low – Increased nuisance to residents and workers	Very Low provided equipment is operated in accordance with manufacturers recommendations



3.6 UNCONTROLLED OR UNINTENDED FUGITIVE EMISSIONS RISK ASSESSMENT

The risks associated with uncontrolled or unintended fugitive emissions from the Site are considered to be not significant.

The risk assessment with regards to uncontrolled or unintended fugitive emissions is presented in Table 3-4 below.

Table 3-4 – Uncontrolled or Unintended Fugitive Emissions Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Failure of engine management system	<ul style="list-style-type: none"> - Local business employees - Residents (closest residential receptor is located is ~ 290 m north-east of the Site) 	Air	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Any failure in the engine management system will either send an alarm and the equipment will be manually shutdown via the control software or it will not be able to operate</p> <p>Any unusual emissions to be investigated immediately in</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Increased nuisance to residents and workers	Not significant provided equipment is operated in accordance with manufacturers recommendations



			accordance with procedures within the EMS Record and act on complaints in accordance with the EMS			
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3.7 VISIBLE EMISSIONS RISK ASSESSMENT

The risks associated with visible emissions from the Site are considered to be not significant. The risk assessment with regards to visible emissions is presented in Table 3-5 below.

Table 3-5 – Visible Emissions Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Visible emissions from diesel generators	- Local business employees	Air	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Generators will be for emergency back-up generation and will only operate in the event of a grid failure outside of performance testing</p> <p>Any observed plumes will be investigated immediately</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Very Low – Nuisance to amenity for housing within the locality	Not significant provided equipment is operated in accordance with manufacturers recommendations



			in accordance with procedures within the EMS			
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3.8 DISCHARGES RISK ASSESSMENT

The risk assessment with regards to discharges into the receiving environment is presented in Table 3-6 below.

Table 3-6 – Discharges Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Emissions to Water	Surface Water	Surface water sewer	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Visual Inspections of the external structures of the tanks and containment features will continue to be undertaken on a daily basis for signs of corrosion. This is undertaken in accordance with the Asset Integrity Programme. Checks are also carried out as the generators are serviced</p>	Low- Mitigation measures in place should ensure that exposure is minimised	Very Low – Contamination of watercourse	Very Low provided equipment is operated in accordance with manufacturers recommendations and infrastructure maintained in accordance with preventative maintenance programme



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>(minor or major service) by the OEM or OEM approved provider 6-monthly and annually</p> <p>The fuel filler point is external to the building in an enclosed locked box over a bunded and covered area with surface water drainage via a Class 1 forecourt separator with 10,000 l capacity and high level alarm</p>			
Emissions to Land	Land and Groundwater	Groundwater percolation (in the event that hardstanding fails)	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Visual Inspections of the external structures of the tanks and containment features are/will continue to be undertaken on a daily basis for signs of corrosion. This is undertaken in accordance with the Asset Integrity Programme.</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Contamination of land or groundwater	Very Low provided equipment is operated in accordance with manufacturers recommendations and infrastructure maintained in accordance with preventative maintenance programme



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>Checks are also carried out as the generators are serviced (minor or major service) by the OEM or OEM approved provider 6-monthly and annually</p> <p>Any observed imperfections and flaws in hardstanding will be repaired as soon as practicable</p> <p>Any observed emissions to land will be investigated immediately in accordance with procedures within the EMS</p>			



3.9 ACCIDENT RISK ASSESSMENT

The risk assessment with regards to potential accidents which could occur as a result of the operations occurring at LON4 Data Centre are presented in Table 3-7 below.

Table 3-7 – Accident Risk Assessment

Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Leak from fuel deliveries and vehicles	Land Groundwater	Drains Groundwater percolation (in the event that hardstanding fails)	Virtus has an oil/fuel delivery procedure. This will continue to be implemented each time the fuel oil storage tanks require filling. Included in this procedure is the requirement for any ‘at risk’ drains to be covered to prevent any illegal discharges and spill kits must be positioned nearby. Should a major spillage of diesel occur, the site would initiate a High; P2 incident and both Incident Management Process & Pollution Incident Response Plans initiated to directly contain the spillage	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Nuisance to amenity for housing within the locality	Very Low provided equipment is operated in accordance with manufacturers recommendations



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>to prevent leakage entering local drains and watercourses</p> <p>All vehicles will continue to be tested annually in accordance with their MOT to ensure their road worthiness</p> <p>Spill kits will continue to be maintained at site to clean up leaks and spills should they occur</p> <p>All staff will continue to be trained in managing fuel deliveries and the use of spill kits</p> <p>Any observed leaks will be investigated immediately in accordance with procedures within the EMS</p>			
Leak from lubricating oil	Land Groundwater	Drains Groundwater percolation (in the event that hardstanding fails)	<p>Lubricating oil is contained within each engine which is located within the generator rooms</p> <p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Nuisance to amenity for housing within the locality	Not significant provided equipment is operated in accordance with manufacturers recommendations



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Spill kits will continue to be maintained at site to clean up leaks and spills should they occur</p> <p>All staff will continue to be trained in the use of spill kits</p> <p>Any observed leaks will be investigated immediately in accordance with procedures within the EMS</p>			
Leak from transfer of fuel oil via connecting pipes	Land Groundwater	Drains Groundwater percolation (in the event that hardstanding fails)	<p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>Spill kits will continue to be maintained at site to clean up leaks and spills should they occur</p> <p>All staff responsible for fuel transfer will continue to be trained in managing fuel</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Nuisance to amenity for housing within the locality	Not significant provided equipment is operated in accordance with manufacturers recommendations



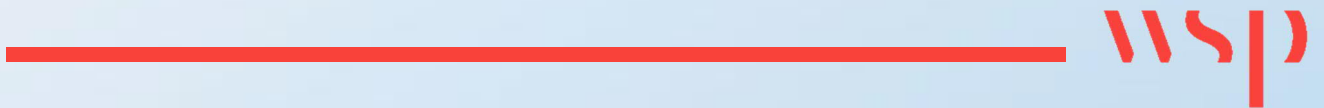
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			<p>transfers and the use of spill kits</p> <p>Any observed leaks will be investigated immediately in accordance with procedures within the EMS</p>			
Leak of chemicals used for engine water treatment/coolant	Land Groundwater	Drains Groundwater percolation (in the event that hardstanding fails)	<p>Coolant is contained within each engine which is located within a building</p> <p>Coolant levels will continue to be checked by service engineers on a regular basis</p> <p>The generators and fuel storage systems will continue to be maintained and inspected in line with best practice (SFG20). These requirements are detailed in Chapter 6 of the Occupational Health Safety and Environmental Management (6.7.9)</p> <p>All staff will continue to be trained in managing deliveries and the use of spill kits</p> <p>Spill kits will continue to be maintained at site to clean up leaks and spills should they occur</p>	Very Low- Mitigation measures in place should ensure that exposure is minimised	Low – Nuisance to amenity for housing within the locality	Not significant provided equipment is operated in accordance with manufacturers recommendations



Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the Overall Risk?
			Any observed leaks will be investigated immediately in accordance with procedures within the EMS.			

Appendix A

NATURE AND HERITAGE CONSERVATION SCREENING REPORT



Nature and Heritage Conservation

Screening Report: Bespoke Installation

Reference	EPR/EP3247JV/A001
NGR	TQ 10851 78699
Buffer (m)	65
Date report produced	10 June 2022
Number of maps enclosed	5

The nature conservation sites identified in the table below must be considered in your application.

Nature and heritage conservation sites	Screening distance (km)	Further information
Special Areas of Conservation (cSAC or SAC)	10	Joint Nature Conservation Committee
Richmond Park (SAC)		
Special Protection Area (pSPA or SPA)	10	Joint Nature Conservation Committee
South West London Waterbodies (SPA)		
Ramsar	10	Joint Nature Conservation Committee
South West London Waterbodies (Ramsar)		
Local Wildlife Sites (LWS)	2	Appropriate Local Record Centre (LRC)
Airlinks Ponds		
Crane Corridor		Appropriate Wildlife Trust
Cranford Countryside Park and Open Space		
Cranford Lane Gravel Workings		



- Hartlands Wood and Lower Park Farm
- Havelock Cemetery
- Lake Farm Country Park
- London's Canals
- Thornclyffe Rough
- Yeading Brook, Minet Country Park and Hitherbroom Park

Protected Species	Screening distance (m)	Further Information
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European eel migratory route	up to 500m	Natural England Environment Agency. Dial 03708 506 506 for your local Fisheries and Biodiversity team
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Where protected species are present, a licence may be required from Natural England or the Welsh Government to handle the species or undertake the proposed works.


The relevant Local Records Centre must be contacted for information on the features within local wildlife sites. A small administration charge may also be incurred for this service.

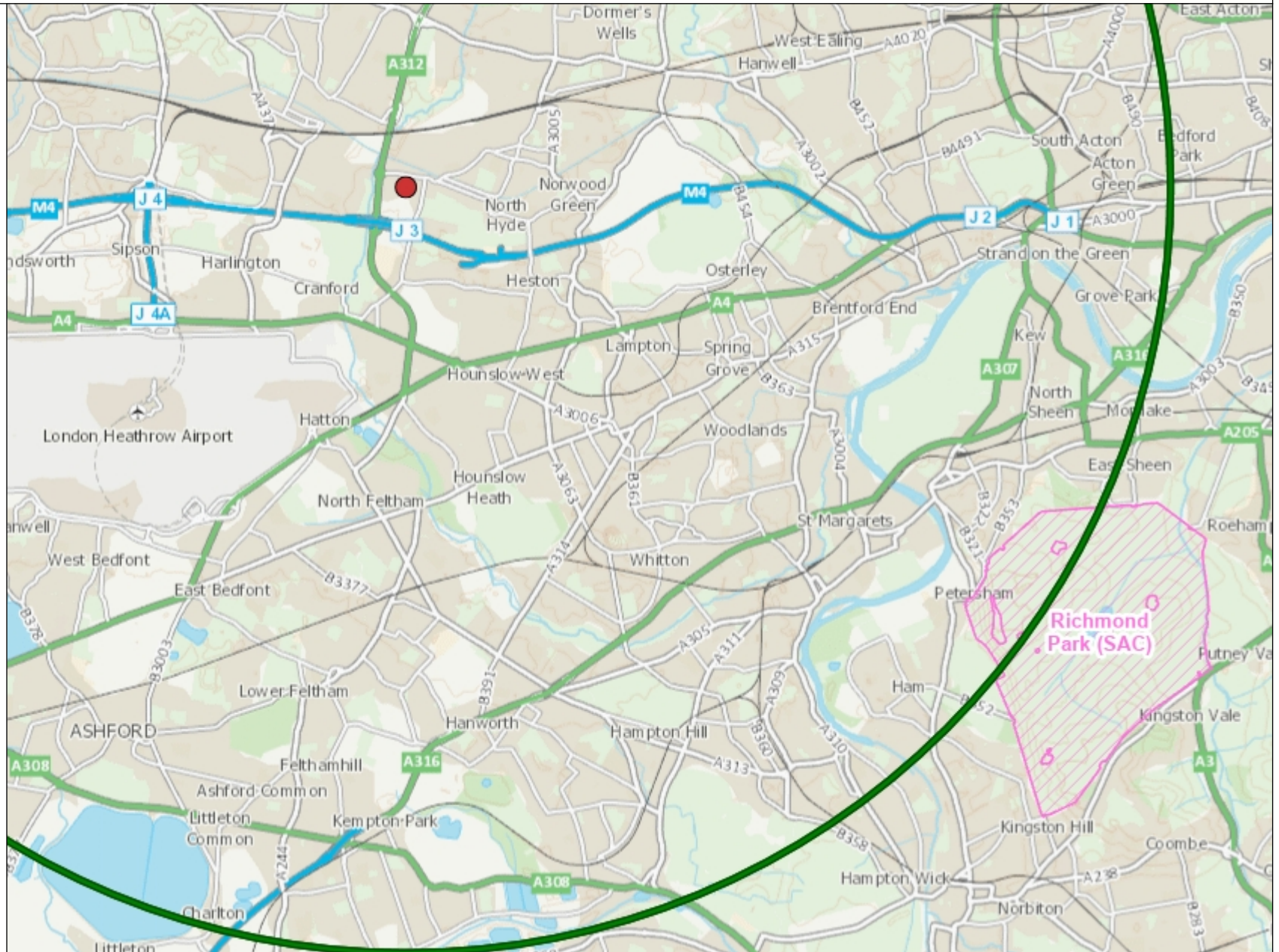
Please note we have screened this application for protected and priority sites, habitats and species for which we have information. It is however your responsibility to comply with all environmental and planning legislation, this information does not imply that no other checks or permissions will be required.

Please note the nature and heritage screening we have conducted as part of this report is subject to change as it is based on data we hold at the time it is generated. We cannot guarantee there will be no changes to our screening data between the date of this report and the submission of the permit application, which could result in the return of an application or requesting further information.

Special Areas of Conservation

Legend

 SAC (England)



1: 75,000

0 1,875


Metres

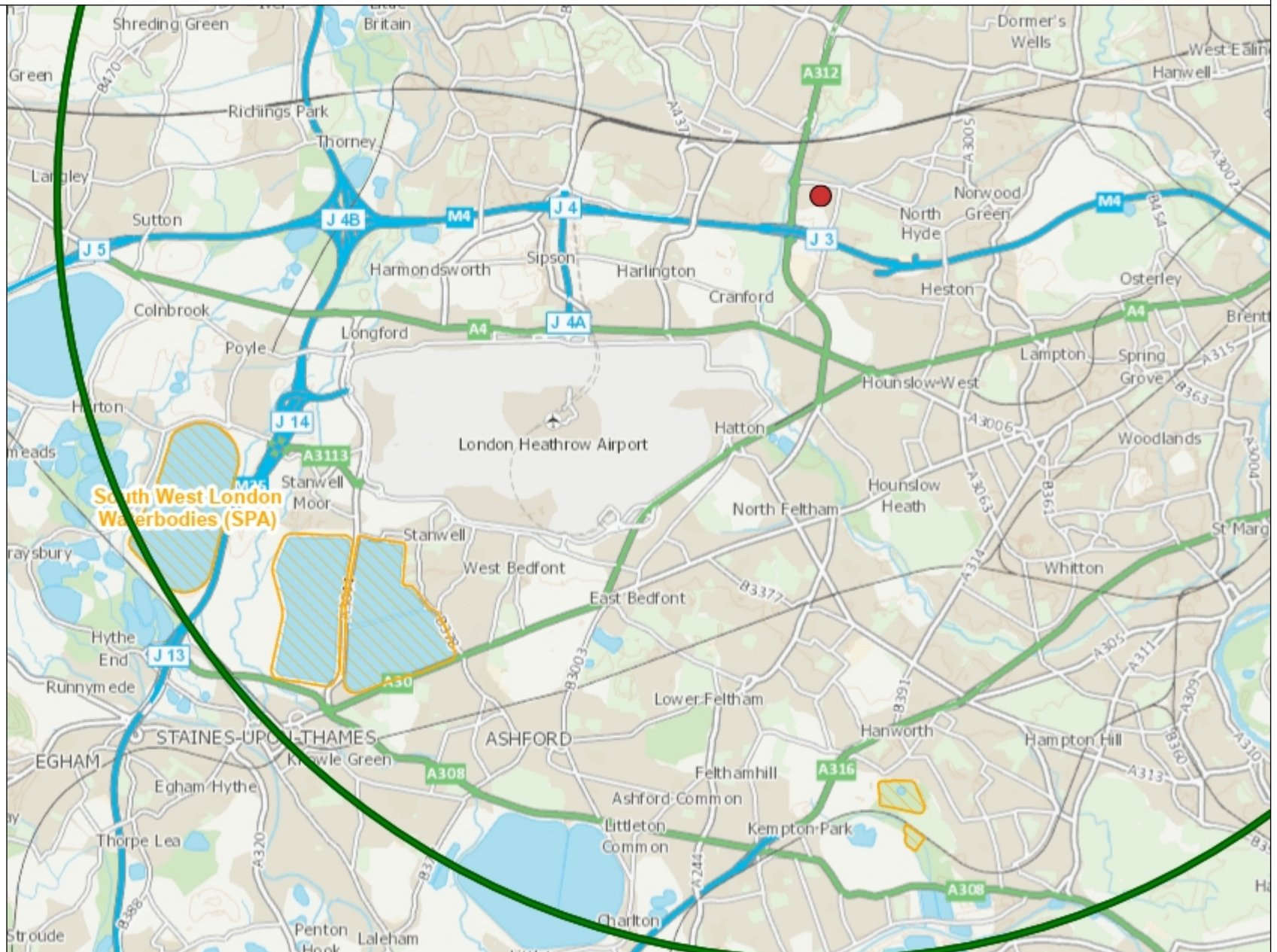


Special Protection Areas



Legend

 SPA (England)



1: 75,000


0 1,875

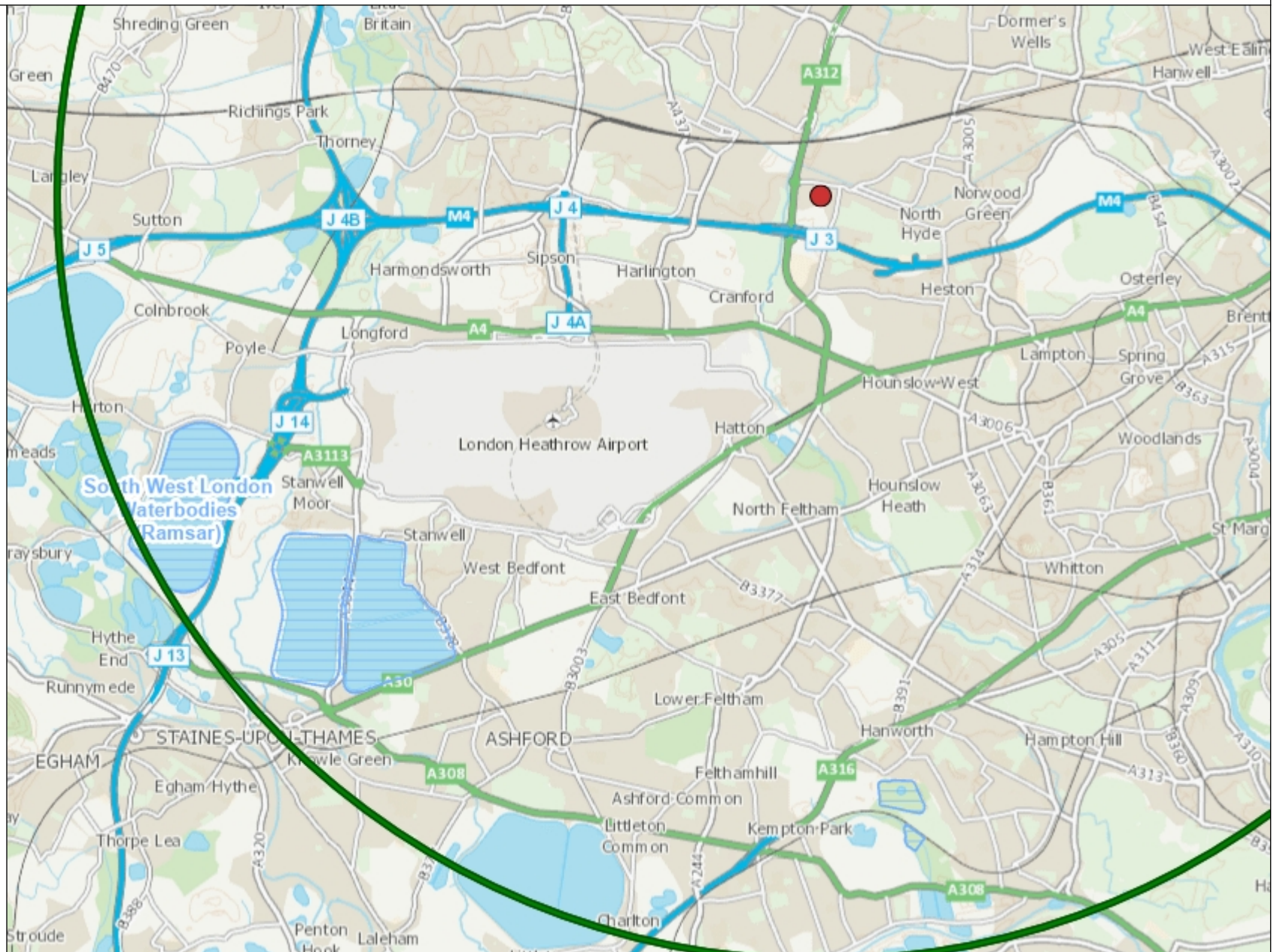
Metres



Ramsar Sites

Legend

 Ramsar (England)



1: 75,000

0 1,875

Metres

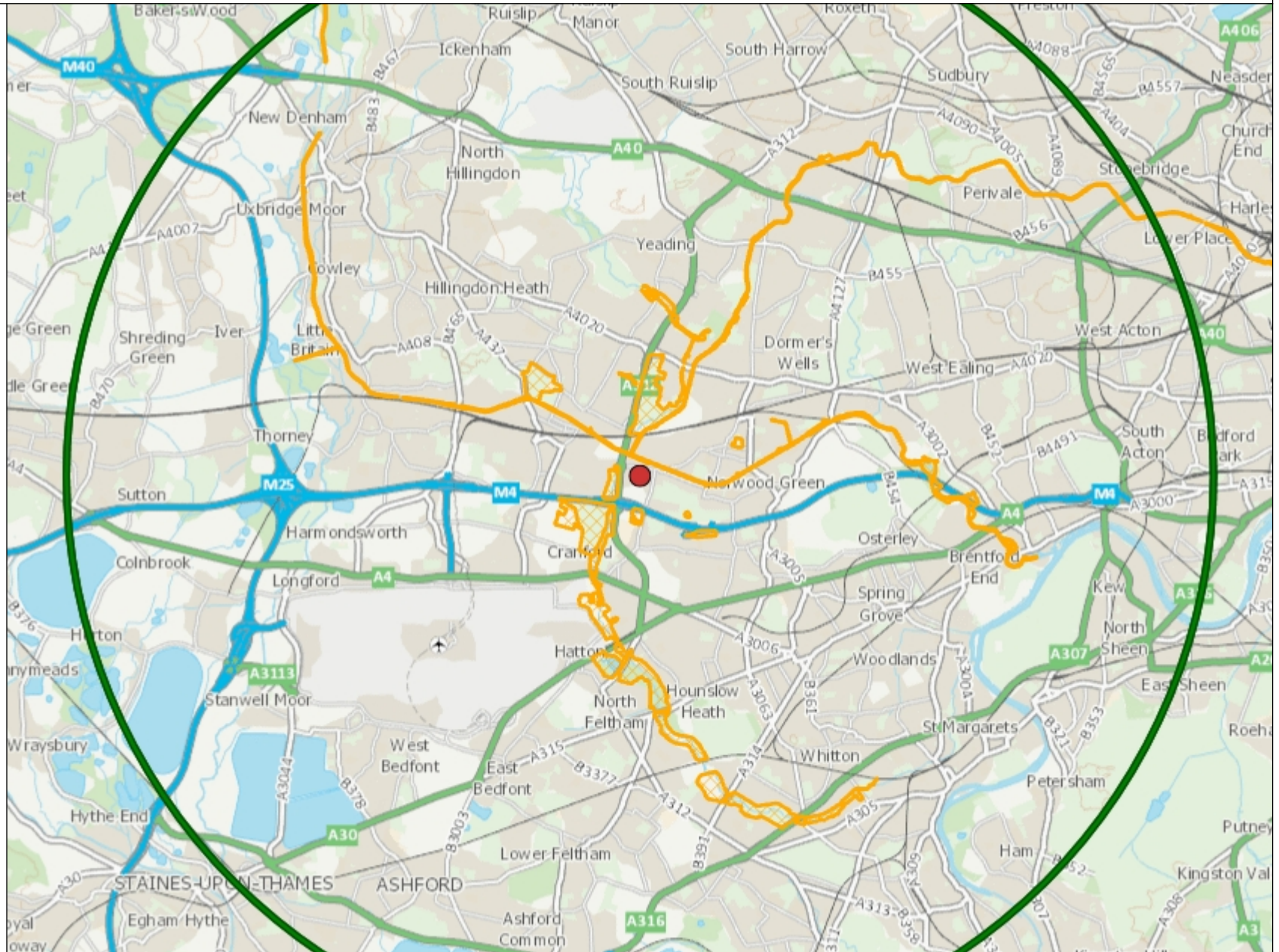


Local Wildlife Sites



Legend

 Local Wildlife Sites



1: 100,000

0 2,500




Metres

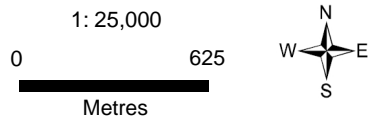
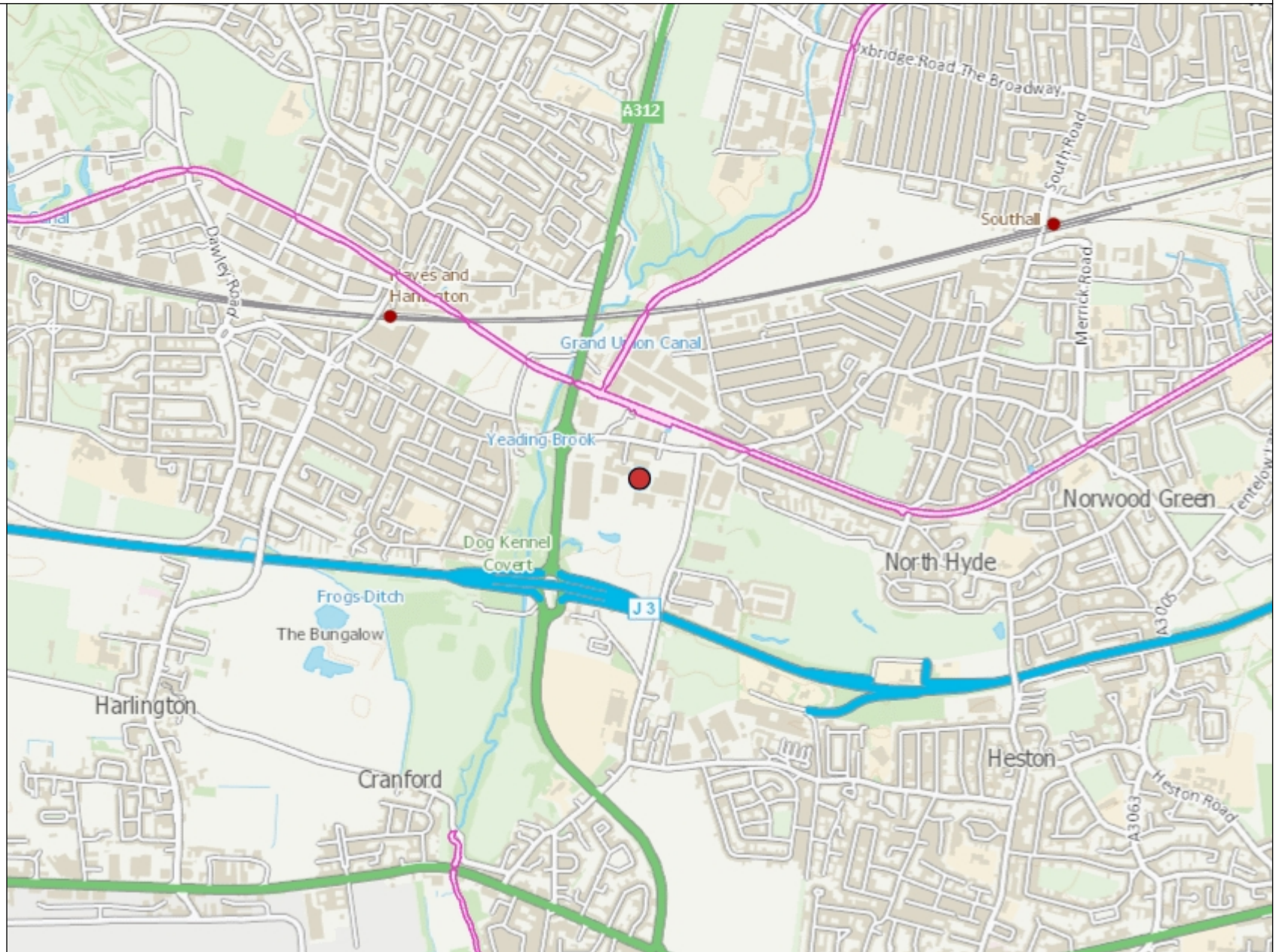


Protected Species

Legend

Protected species screened for Env Permits - complete set

-  Protected species, non fish
-  Protected fish
-  Protected fish migratory route





7 Lochside View
Edinburgh Park
Edinburgh, Midlothian
EH12 9DH

wsp.com

PUBLIC