Taylor Wimpey South East

Stone Pit 2, Greenhithe

Reference F – Environmental Risk Assessment and Habitats Assessment

3020079 – Permit Application

RSK GEOSCIENCES

NOVEMBER 2024

RSK GENERAL NOTES

Project No.: 3020079

Title: Reference F – Environmental Risk Assessment and Habitats Assessment: Stone Pit 2

Client: Taylor Wimpey South East

Date: 14 November 2024

Office: RSK Environment Limited, Fourways House, 57 Hilton Street, Manchester, M1 2EJ, UK

Status: Rev 01

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Rev 01	14 November 2024	Amendments following Environment Agency comments	A. White	T. Holding

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1 INTRODUCTION

1.1 Report context

RSK Environment Limited (RSK) was commissioned by Taylor Wimpey South East to produce to prepare an Environmental Risk Assessment and Habitats Assessment as part of supporting documentation for an application to obtain a Bespoke Environmental Permit for their site at Stone Pit 2, St James Lane, Horns Cross, Greenhithe, Kent, hereafter referred to as the 'Site'. A Bespoke Environmental Permit is required as the Site is located on a former landfill site.

A scheme to redevelop the site is proposed comprising a new residential development, business premises, community and social facilities, provision of a primary school site and supporting retail. A Waste Recovery Plan has been developed and has been submitted to the Environment Agency for approval.

Activities will include:

- Excavation of surplus material from Phase 1, 2 and 3 of the development, which previously formed part of the now surrendered landfill permit for Stone Pit 2 (Permit No. EPR/BS6726IL)
- Treatment by screening to removal anthropogenic material to make suitable engineering fill.
- Re-deposition of the material under the Deposit for Recovery Permit.

1.1.1 Environmental risk assessment and habitats assessment

This Environmental Risk Assessment (ERA) is a simple assessment of the risks to the environment and human health from emissions and accidents that may be associated with the site. It has been completed in accordance with Environment Agency guidance.

The aim of the ERA is to identify any significant risks and demonstrate that the risk of pollution or harm will be acceptable by taking the appropriate measures to manage the risk.

The ERA should be read in conjunction with the other documentation accompanying the permit application.

This document also includes the Habitats Assessment that is required to support the permit application.

1.2 Operator and agent

The Environmental Permit application and this summary have been prepared by RSK Environment Ltd (RSK) which is acting as an 'Agent' on behalf of the proposed 'Operator', Taylor Wimpey UK Limited, which is registered in England and Wales as Company Number 01392762.

2 ENVIRONMENTAL RISK ASSESSMENT

2.1 Risk matrix

The following table shows the resultant risk of an identified hazard or potential situation. This uses the hierarchy of both probability and consequence to assess the level of risk. The level of risk determines what level of management would be required in order to reduce the risk of the occurrence and/or scale.

Table 1: Risk matrix

		Consequence			
		High	Medium	Low	Very Low
Probability	High	High	High	Medium/Low	Near Zero
	Medium	High	Medium	Low	Near Zero
	Low	High/Medium	Medium/Low	Low	Near Zero
	Very Low	High/Medium/Low	Medium/Low	Low	Near Zero

2.2 Risk assessment

The following pages contain the site-specific risk assessment for the site with appropriate remedial actions, recommendations and measures for each identified hazard, potential contaminant or situation.

Table 2: Risk Assessment

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population.	Releases of particulate matter (dust).	Harm to human health - respiratory irritation and illness.	Air transport then inhalation.	Medium	Medium	Medium	Permitted waste types are inert and have a low potential to produce bioaerosols. The activities may produce dust from movement of vehicles and tipping operations especially in dry and also windy weather.	Activities shall be managed and operated in accordance with the management system that includes measures to prevent and reduce risk of dust being produced and where it is produced from leaving the site boundaries.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population.	Releases of particulate matter (dust). Excavation and treatment of materials.	Nuisance - dust on cars, clothing etc.	Air transport then deposition.	Medium	Low	Medium	Permitted waste types are inert and are from waste already deposited on site. The activities may produce dust from movement of vehicles and tipping operations especially in dry and also windy weather.	Activities shall be managed and operated in accordance with the management system that includes measures to prevent and reduce risk of dust being produced and where it is produced from leaving the site boundaries. During excavation of materials on site control measures such as water sprays will be utilised. Treatment plant will be fitted with water suppression systems. Drop heights will minimised where appropriate to reduce the generation of dust. Waste storage will be covered if	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								required to minimise windblow dust. Visual monitoring will be carried and where significant dust is generated, affected areas will be sprayed with water and if required site operations will cease if dust generation is excessive.	

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population.	Releases of particulate matter (dust). Redeposit of materials	Nuisance - dust on cars, clothing etc.	Air transport then deposition.	Medium	Low	Medium	Permitted waste types are inert. The activities may produce dust from movement of vehicles and tipping operations especially in dry and also windy weather.	Activities shall be managed and operated in accordance with the management system that includes measures to prevent and reduce risk of dust being produced and where it is produced from leaving the site boundaries. The number of vehicles entering the site will be reduced due to the excavation and reuse of existing material on site. Vehicles will operate at low speeds. Visual monitoring will be carried and where significant dust is generated, affected areas will be sprayed with water and if required site	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								operations will cease if dust generation is excessive.	
Local human population.	Litter.	Nuisance, loss of amenity and harm to animal health.	Air transport then deposition.	Low	Low	Very Low	Waste types permitted have a low risk of litter due to materials being excavated on site.	The management system will have procedures to remove and contain any litter to prevent it being re-deposited at the site or to leave the site boundaries.	Very Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population.	Mud and waste on road.	Nuisance, loss of amenity, road traffic accidents.	Tracked on tyres of vehicles entering and leaving the site and from loads which are not properly contained.	Medium	Medium	Medium	Waste types are typically ones that will produce mud especially during wet weather.	Due waste be excavated and re-deposited on site the number and volume of vehicles will be significantly lower compared to a site receiving waste from external sources. The management system will contain procedures to minimise the risk of mud and waste being tracked out onto the highway. This may include wheel-cleaning facilities where appropriate. All vehicles should have adequate containment such as sheeting to prevent waste spillage.	Low
Local human population .	Odour .	Nuisance, loss of amenity.	Air transport.	Very Low	Very Low	Very Low	Permitted waste types are inert and therefore should not be odorous.	The management system will contain procedures to prevent non-permitted	Very Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								wastes being re-deposited at site. It is anticipated that there will be minimal requirement to bring materials into the site from external sources.	
Local human population.	Noise and vibration.	Nuisance, loss of amenity, loss of sleep.	Noise through the air and vibration through the ground.	Medium	Medium	Medium	Local residents often sensitive to noise and vibration but there is usually low potential for exposure.	Noise and vibration shall be minimised and not cause nuisance. If it is deemed appropriate a noise and vibration management plan will be produced.	Low
Local human population.	Scavenging animals and scavenging birds.	Harm to human health from waste carried off site and faeces. Nuisance and loss of amenity .	Air transport and over land.	Low	Low	Very Low	Wastes are limited to inert wastes that are not normally attractive to animals and birds.	Risk limited by permitted waste types and good onsite management practices detailed in management system of non-conforming wastes.	Very Low
Local human population and local environment.	Pests (e.g.) flies.	Harm to human health. Nuisance, loss of amenity.	Air transport and overland.	Low	Medium	Medium	Wastes are limited to inert wastes that are not normally likely	Risk limited by permitted waste types and good onsite management	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
							to encourage pest infestations.	practices detailed in management system of non-conforming wastes.	
Local human population and local environment.	Flooding of site.	If waste contaminated water is washed off site it may contaminate buildings, gardens, watercourses and natural habitats.	Flood waters .	Low	Medium	Medium	Permitted waste types are inert so any waste washed off site will add to the volume of local post flood clean-up workload rather than the hazard. However, they may cause increased siltation and need for dredging in water courses. Increased suspended solids.	Activities are not permitted within 10 metres of a watercourse or to be deposited sub-water table. The written management system will identify and minimise risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
Local human population and/or livestock gaining unauthorised access to the waste operation.	All on-site hazards, wastes, machinery and vehicles.	Bodily injury.	Direct physical contact.	Low	High	Medium	Permitted waste types are inert therefore only a low risk from the actual waste. However, there could be stockpiles that people could climb or void spaces that people could fall into, and wastes have a higher risk in wet conditions where deep mud could form.	The written management system will identify and minimise risks from unauthorised access and site security measures identified to prevent such access.	Low
Local human population and the environment.	Arson and/or vandalism causing the release of polluting materials to air (smoke or fumes) and firewater or spillage of polluting liquids to water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters or arsonists/vandals. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from and via surface water drains and ditches.	Low	Medium	Medium	Permitted waste types are inert so very low-risk of combustion. Site machinery and fuels and oils are more of a risk, but quantities would typically be low.	The written management system will identify and minimise risks from unauthorised access and site security measures identified to prevent such access. Fuels will be stored in compliance with	Very Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								the Oil Storage Regulations, drip trays are be used when refuelling of plant is carried out.	
Local human population and local environment.	Accidental fire causing release of polluting materials to air (smoke or fumes), water or land.	Respiratory irritation, illness and nuisance to local population. Injury to staff, fire fighters. Pollution of water or land.	Air transport of smoke. Spillages and contaminated firewater by direct run-off from and via surface water drains and ditches.	Low	Medium	Low	Permitted waste types are inert so very low-risk of combustion. Site machinery and fuels and oils are more of a risk, but quantities would typically be low.	The written management system will identify and minimise risks. The system will describe how any polluting liquids or materials will be stored safely.	Very Low
Local human population and local environment.	Build up and emissions of gas from old waste deposits on the permitted site	Respiratory irritation, illness and nuisance to local population. Risk of explosion and injury to staff and local population.	Gas migrating laterally through waste deposit and building up in certain areas.	Low	High	Medium	Old waste deposits may be disturbed by additional waste deposits. Trapping of gas, increased pressure may cause gas to	The operator currently has gas control measures in place and further measures are to be adopted through the development of the site.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
							build up. However, distance criteria mean that the probability of exposure is low.		
All surface waters close to and downstream of site.	Spillage of liquids, including oil.	Acute effects: fish and invertebrate kill.	Direct run-off from site across ground surface, via surface water drains, ditches etc.	Low	Medium	Medium	Wastes are solid and inert. Potential for spillage from any fuel and oil storage for machinery or directly from machinery operating on the site.	No point source discharges of contaminated water to controlled waters. All liquids shall be provided with secondary containment. The written management system will identify and minimise risks. This could include how polluting liquids or materials will be stored safely and how machinery/plant will be maintained to prevent liquids from leaking.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
All surface waters close to and downstream of site.	Leachate from waste and contaminated rainwater run-off from waste e.g. suspended solids.	If waste contaminated water is washed off site it may contaminate watercourses and natural habitats leading to chronic effects and deterioration of water quality.	Surface waters, leachate from infiltration through the waste	Medium	Medium	Medium	Permitted waste types are inert so any waste washed off site will not be chemically hazardous however they may cause increased siltation and need for dredging in water courses. It will also reduce water quality and may smother fish breeding grounds and invertebrate populations. The waste will not produce liquid in itself but rainwater percolating through the waste will produce a waste leachate which should still be very	No point source discharges of contaminated water to controlled waters. Risk limited by waste acceptance rules and limits to permitted waste types. Good onsite management practices will be detailed in the management system for controlling and containing water and leachate generated on the site.	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
							low in contamination.		
Groundwater	Leachate from waste and contaminated rainwater run-off from waste e.g., suspended solids.	Chronic effects: contamination of groundwater, requiring treatment of water or closure of borehole.	Transport through soil/groundwater then extraction at borehole.	Medium	Medium	Medium	Permitted waste types are inert with limited uses of road planings and organic wastes so any waste should not contain hazardous substances or non-hazardous pollutants in quantities that pose a risk to groundwater.	Site is not located within Source Protection Zones 1 or 2 or within 250 metres of any well, spring or borehole used for the supply of water for human consumption, including private water supplies. Waste will not be re-deposited in any controlled or surface waters or sub-water table. Waste acceptance and re-use procedure on site. The management system will set out any additional waste acceptance	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								procedures to ensure only waste listed in permit are re-deposited on site. Groundwater is being monitored.	
Protected nature conservation sites - European sites and SSSIs.	Dust, noise, contaminated run-off leachate etc.	Harm to protected sites through contamination, smothering, disturbance etc.	Any	Low	Medium	Medium	Emissions to air may cause harm to and deterioration of nature conservation sites. Vehicles moving on and around site causing disturbance through noise. Potential for run-off and siltation of habitats etc.	The site is not within 500 metres of a European Site or a Site of Special Scientific Interest (SSSI); or 250 metres within the presence of Great Crested Newts where it is linked to the breeding ponds of the newts by good habitat; or 50 metres of a site that has species or habitats protected under the Biodiversity Action Plan that the Environment	Low

Receptor	Source	Harm	Pathway	Probability of exposure	Consequence	Magnitude of risk	Justification for magnitude	Risk management	Residual risk
								Agency considers at risk to this activity; and not 50 metres of a National Nature Reserve (NNR), Local Nature Reserves(LNR), Local Wildlife Site (LWS), Ancient woodland or Scheduled Ancient Monument.	

3 POTENTIAL RECEPTORS

3.1 Site setting

The site is located adjacent to London Road, Greenhithe. The north the site borders London Road, public open space and Stone Pit 1, former landfill, public open space, residential properties and the Blue Water Shopping centre to the east, to the west allotments and residential properties and to the south Watling Street and Darent Valley Hospital.

The site is 'L' shaped and covers an area of approximately 20 ha. The Site Location Plan is provided at **Figure 1**. The ground level in the north is topographically lower than that in the south with a surface level of 29.00 m above ordnance datum (AOD) along the northern boundary and a surface level of 54.00 m AOD along the southern boundary. In the north of the site is a hardstanding concrete area. The remainder of the site is undeveloped vegetated land with some areas of exposed soils at the ground surface. The site in general has the following main attributes:

- Historically the site was open space with footpaths crossing the north and south-east corner of the site up to the 1960's when the site became a quarry with chalk extraction.
- The site became disused in the 1980's and no significant change occurred until 2002 when the site was issued with an Environmental Permit for landfilling of inert waste.
- The landfill was operated in three Phases with Phase 1 being surrendered in 2019, Phase 2 being surrendered in 2021 and Phase 3 being surrendered in December 2022.

The area surrounding the site is as detailed in **Table 3**.

Table 3: Site Setting

To the north:	The A226 London Road is present along the northern/north-west boundary with open grassland and woodland beyond. To the north-east the Stone Pit 1 site.
To the east:	Hayes Park Road borders the northern part of the east boundary of the site with a sports field with pavilion and residential properties beyond. A further residential estate is located to the east of the site and beyond this lakes and the Bluewater Shopping Centre.
To the south:	The A296 Watling Street is present along the southern boundary with the Darent Valley Hospital site and carparks beyond.
To the west:	A mature hedgerow and trees border the site to the west with allotments and residential housing estates beyond.

3.2 Areas of public and recreational use

There are no public footpaths on the site, public footpaths (pavements) are located alongside the northern (London Road) and southern (Watling Street) sides of the site and alongside the eastern part of the site (opposite side of St James Lane). There is public access to sports field with pavilion next to the eastern boundary of the site.

3.3 Residential

The nearest residential properties are located to the east and west of the site. Residential properties are next to the central part of the eastern boundary of the site and residential properties and an allotment site are located next to the entire western boundary of the site.

3.4 Site access

Access to the site is made off the A226 London Road. Should waste material be required for the site it will be transported via this route. Once on site a spine road runs down the eastern side of the site.

3.5 Geology

There are no recorded superficial deposits according to the British Geological Survey website, indicating that the area of the site has been quarried and classed as worked ground. The underlying bedrock geology is indicated to be strata of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newhaven Chalk Formation.

Previous site investigations show that made ground was encountered across the whole site at thicknesses ranging between 1.00 m to 28.45 m. The depth of made ground was not fully proven so as not damage the integrity of the base layer. Investigations by others encountered made ground up to 35.50 m below ground level (bgl).

Concrete hardstanding was present in the south-east of the site forming the entrance of the former landfill site and a small vehicle parking and loading area.

A prominent layer of chalky material was reported in the northern part of the site, generally below .00 bgl and ranging between 1 m and 6 m in thickness.

The Seaford and Newhaven Chalk Formations were encountered in several exploratory locations from 1.00 m to 10.00 m bgl. Shallow chalk deposits were encountered at the site boundaries relating to the sides of the former quarry. The base of the strata was not proven, and the maximum depth recorded as 55.00 m bgl.

The depths to the base of the gravelly silt weathered layer varied from 9.00 m to 29.50 m bgl and the depths to the base of the silty gravel weathered layer varied from 20.00 m to 38.00 m bgl.

3.6 Hydrology

The nearest surface water feature to the site is Bluewater Lake located approximately 71 m to the east of the site and the River Thames is located approximately 1.70 km to the north of the site.

Historically there was a surface water drain aligned north south through Phase 1 and Phase 2 at the base of the quarry. This was present up to at least 1999.

There are no surface water abstractions within 1.00 km of the site reported by the JNP Group.

There were two licensed discharge consents within 500 m of the site reported by the JNP Group;

- Bluewater Park Lake, 85.00 m to the east of the site, issued January 1996 to discharge trade discharges – site drainage into the lake/reservoir.
- Bluewater Park Lake, 271.00 m to the east of the site, issued January 1996 to discharge trade discharges – site drainage into the lake/reservoir.

3.7 Flood Risk

The site is located within an Environment Agency designated Flood Zone 1 which has a probability of fluvial flooding less than 1 in 1000 (<0.1%) in any given year.

According to previous reports the eastern part of the site is at high risk (1 in 30 year) of surface water flooding, however it was considered that the risk was based on a lower topographical level.

The north and central parts of the site are at low risk of groundwater flooding and in the south of the site the risk ranges between moderate and high. It was considered that these risks are based on a lower topographic level.

3.8 Ecology

Ecology Solutions Limited produced an Ecological Mitigation Strategy in October 2022 (**Appendix B**) after undertaking habitat, reptile, dormice, bat and badger surveys (in 2022), building on surveys undertaken by Hyder Consulting Limited in 2008 and ECOSA Limited in 2019.

The site was considered to not support dormice. The development is considered to improve wildlife habitats and to include suitable mitigation measures for the local bat population. Although no badgers were found to be on site, during construction the mitigation measure of the placement of timber planks being placed within open excavations is to be undertaken to provide means of escape.

Nesting bird checks are to be undertaken by an ecologist prior to the clearance/cutting of existing site vegetation. Reptile relocation is to take place by an ecologist prior to the clearance/cutting of existing site vegetation, once the release habitat areas have been prepared and a temporary reptile fence is to be built, maintained and checked to minimise the potential for reptiles to re-enter the construction site. Construction works are to take place at optimal times to minimise potential wildlife disturbance.

4 HABITATS ASSESSMENT

The main environmental receptors around the site which could be impacted by the proposed changes on site are identified below. These were identified as part of the Nature and Heritage Conservation Screening Report undertaken by the EA as outlined within **Appendix C,** previous reports and the MAGIC publicly available database.

The following nature and heritage conservation site have been identified within a 1.00 km/500 m distance from the site and shown in **Figure 2**:

4.1 Special protection area (SPA) and RAMSAR

Site	Approximate Distance from Stone Pit 2
None	Not Applicable

There are no Special Protection Areas (SPA) or RAMSAR sites identified within 1km of the site.

4.2 Sites of special scientific interest (SSSI)

Site	Approximate Distance from Stone Pit 2
Darenth Wood	~610 m south east of the site

4.3 Protected habitats

Site	Approximate Distance from Stone Pit 2
Deciduous Woodland	0.00 m – Located alongside the southern and southeastern boundary of the site. ~181 m northeast of the site. ~334 m north of the site. ~337 m east of the site.

4.4 Ancient woodland

Site	Approximate Distance from Stone Pit 2
Darenth Wood (SSSI)	~610 m southeast of the site
Unnamed wood	~649 m southeast of the site
Unnamed wood	~804 m east of the site

4.5 Local wildlife sites

Site	Approximate Distance from Stone Pit 2
None	Not applicable

There are no local wildlife sites identified within 500 m of the site.

4.6 Protected species

There are no protected species which were identified to be present within 500 m of the site.

4.7 Measures to prevent harm

Prior to development of the different areas of the site any existing drains and interceptors will be emptied of all liquids/sludge and chemical analysis will be undertaken to determine an appropriate disposal method. No collected water will be discharged via any ground surface or surface watercourse. All activities will be undertaken away from any intact surface water drains to prevent any pathway off site.

There will be no discharges to surface water from the proposed activities on site. All activities will be contained within the boundaries of the site away from open surface water drains. As a result, there is no direct pathway leading to any nearby watercourses.

All care will be taken to ensure that there is no impact to the environment from activities on site. It is expected that as a result of the remediation works, there will be an overall benefit and reduced risk of pollution from the landfill activities carried out on site previously.

Any works which could involve Ancient Woodland or trees which are subject to Tree Preservation Orders, will be discussed with the Local Authority.

5 CONCLUSION

The environmental risk assessment has been undertaken as described by the EA guidance.

The risk assessment has considered emissions to air, land and water, odour, noise, dust, litter, and potential for accidents and incidents. The assessment concludes that with the implementation of the risk management measures described above, potential hazards from the proposed development are not likely to be significant and no further assessment is required.

FIGURE 1
SITE LOCATION PLAN

Rev	Date	Amendment	Drawn	Chkd	Appd
C01	20.06.23	First Issue	LS	AW	AW

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Client: Taylor Wimpey South East

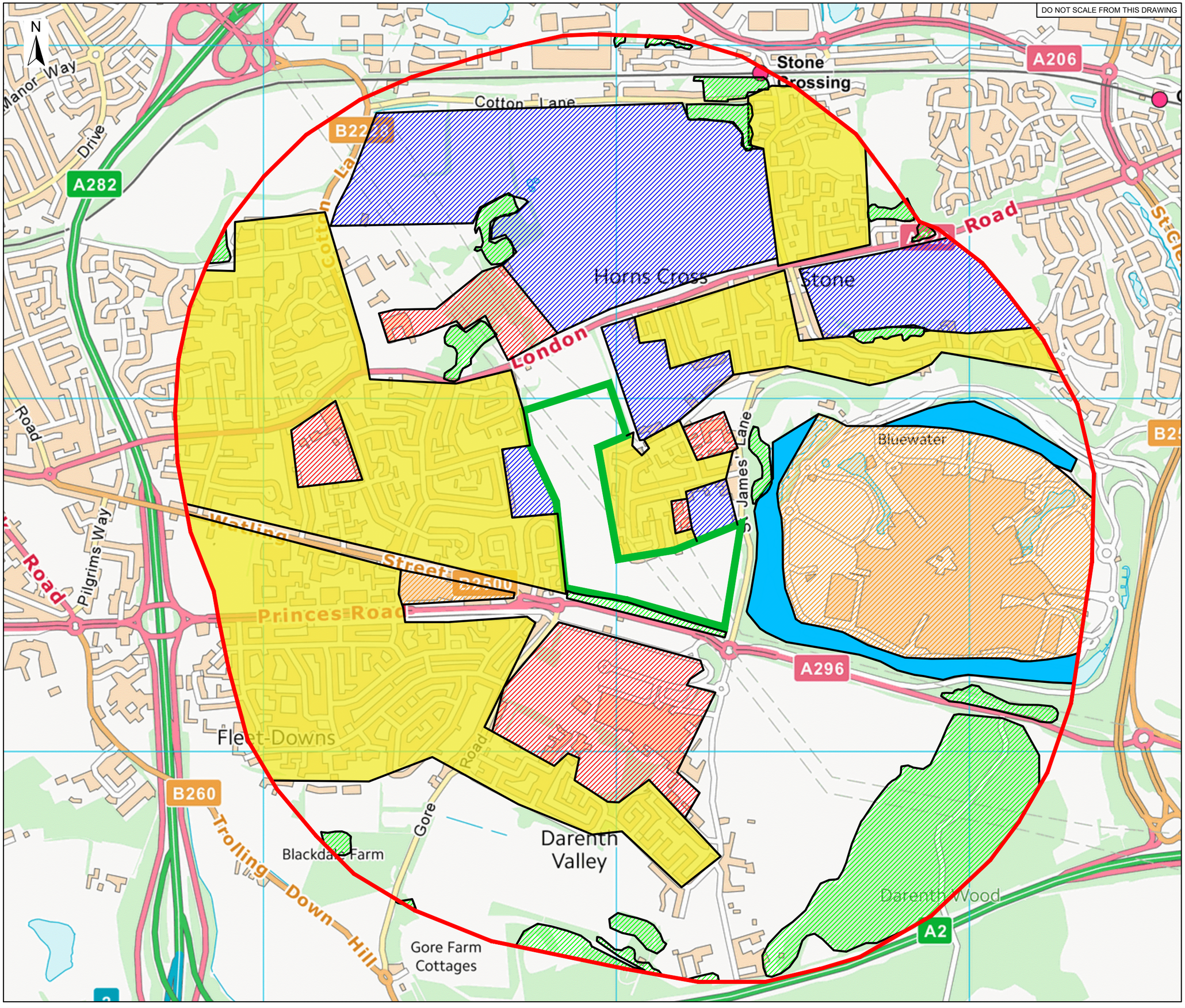
Project Name: Stone Pit 2, St James Lane, Horns Cross, Greenhithe, Kent

Description: Site Location Plan

Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name
m	A4	1:25,000	556888,173850	3020079	11101	C01	3020079-MA-111-SS-D-C-11101-C01

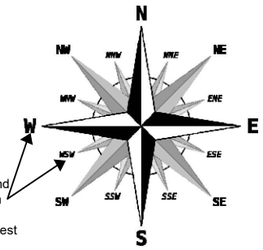
FIGURE 2
SENSITIVE RECEPTORS PLAN

DO NOT SCALE FROM THIS DRAWING



LEGEND

- 1km radius
- Permitted Boundary
- People and property
- Education and health
- Commercial and business
- Public access / footpaths / playing fields
- Sensitive land
- Drainage systems and watercourse / features



Prevailing wind direction from the west and west-south-west

Notes:

The information I have from Information from the website Windfinder.com detailing annual wind and weather statistics for Erith weather station indicates that the prevailing wind direction is from the west and west-south-west with wind coming from those directions around 75% of the time throughout the last 10 years.

Rev	Date	Amendment	Drawn	Chkd	Appd
C01	13.11.24	First Issue	AS	AW	AW

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Client: Taylor Wimpey Limited

Project Name: Stonepit 2, Kent

Description: Sensitive Receptors Plan

Project ID	Drawing no.	Revision
3020079	11301	C01

File name: 3020079-MA-113-XX-D-G-11301-C01

Dimensions	Scale	Size
m	NTS	A3

APPENDIX A
SERVICE CONSTRAINTS

APPENDIX A
SERVICE CONSTRAINTS

1. Service Constraints for all Reports

1.1. This Report (the “Report”) and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Carbon Zero Consulting, Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the “Appointment”) between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.

d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together

with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not

been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibly for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/ radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD)Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided

by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

APPENDIX B
ECOLOGICAL MITIGATION STRATEGY

TAYLOR WIMPEY SOUTH EAST

ECOLOGYSOLUTIONS

Part of the ES Group

STONE PIT, DARTFORD

Discharge of Condition 16

Ecological Mitigation Strategy

October 2022
10395.Development.EMS.vf

ecology solutions for planners and developers

CONTENTS

PLANS

APPENDICES

1. INTRODUCTION

1.1. An initial ecological assessment and suite of survey work was undertaken at the site in 2008 by Hyder Consulting. The details of this assessment can be found in Chapter 15 of the Environmental Impact Assessment (document ref: 15723/A5/ES2012) submitted as part of the initial planning application.

1.2. Planning permission for the site was granted by Dartford Borough Council in 2017, subject to a number of conditions (reference: DA/19/01289/VCON). This includes condition 16, which relates to ecology. This condition is reproduced below:

"Before commencement of the development in any given phase (including site clearance), details of the following, relating to that phase shall be submitted to and approved by the Local Planning Authority and implemented in accordance with the details approved:

1) Dormouse survey;
2) Details of an update to the phase 1 ecological assessment;
3) A further reptile survey to update previous results and to inform a detailed mitigation strategy;
4) A detailed ecological mitigation strategy;
5) Lighting strategy that avoids and minimizes illumination of habitats (particularly boundary vegetation) with bat foraging and commuting potential;
6) Site landscaping that provides ecological enhancements;
7) Design features that are beneficial to wildlife with particular reference to bats and birds."

1.3. Since this time, updated survey and assessment work has been undertaken by ECOSA Ltd in 2019, including an Updated Ecological Appraisal (May 2019) and updated reptile and dormouse surveys. In addition, ECOSA Ltd produced a Preliminary Works Ecological Mitigation Strategy (EMS) submitted in relation to the London Road access only that was approved by Dartford Borough Council in May 2020 (planning ref: 20/00182/CDNA).

1.4. Ecology Solutions Ltd was commissioned by Taylor Wimpey South East Ltd in March 2022 to produce an Ecological Mitigation Strategy for the proposed wider development including all phases of development (see Appendix 1).

1.5. With regard to condition 16, this EMS has been written with regard to with previous approved reports produced by ECOSA Ltd. Furthermore, update survey information has been collected at the site by Ecology Solutions in 2022 in respect of habitats, bats, Badgers, reptiles, and Dormouse. The update survey results have been included where relevant.

1.6. This EMS has been written with reference to published guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM) and with regard to relevant guidelines for protected species.

1.7. The document is set out as follows:

- Ecological baseline and evaluation of important features within the development site;
- Aims and objectives in order to safeguard wildlife during construction and maximise the ecological potential of features due to be retained and created within the site; and
- Mitigation measures that will take place in order to prevent impacts on protected species.

1.8. This EMS has been produced to discharge Condition 16 in relation to the all phases of the development site.

2. ECOLOGICAL BASELINE AND EVALUATION

2.1 Habitat Surveys were carried out by ECOSA Ltd in May 2019 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species. Updated habitat surveys were carried out by Ecology Solutions on 31st March 2022 as well as additional visits throughout 2022.

2.2 Ecology Solutions habitat surveys were based on extended Phase 1 survey technique. The habitats and dominant plant species were recorded together with conspicuous faunal activity and evidence of the presence, or potential presence, of protected species.

2.3 Specific surveys were also carried out for bats, Badgers, reptiles and Dormice.

2.4 The results of these surveys are provided within this EMS, where necessary.

Existing Ecological Features and Wildlife Use of the Site

2.5 The existing conditions onsite are described below based on recent update surveys undertaken in respect of habitats and protected species.

Habitats

2.6 The Site itself primarily comprises a bare earth, with rough grassy vegetation and scrub habitat at the boundaries.

2.7 The grassland habitat present within the Site is species poor and supports common and widespread species, with some areas of grassland supporting a longer sward with occasional patches of ruderal vegetation. Species recorded within the Wider Application site include, False Oat-grass *Arrenatherum elatius,* Barren brome *Anisantha sterilis,* Yorkshire Fog *Holcus lanatus*, Cleavers *Galium aparine*, Common Ragwort *Senecio jacobaea*, Scentless Mayweed *Tripleurospermum inodorum,* Yarrow *Achillea millefolium, Melilotus* sps*,* and Shepherd's Purse *Capsella bursa-pastoris*.

2.8 The Site supports scrub and immature trees on the boundaries of the Site. This habitat is contiguous with trees and scrub along the boundaries of the Wider Development Site. Species recorded within the Site along the boundaries include, Hawthorn *Crataegus monogyna,* Wild Cherry *Prunus avium*, Sycamore *Acer pseudoplatanus*, Field Maple *Acer camperstre*, Blackthorn *Prunus spinosa* and Bramble *Rubus fruticosus* agg. However, the scrub tends to be in poor condition due to a lack of management.

Dormice

2.9 Previous survey work for Dormice in 2008 and 2019 found no evidence of this species within the Site. Indeed, the Site has a very limited capability to support a viable population of this species.

2.10 An updated appraisal of the Site in March 2022 found no new evidence to suggest Dormice would have colonised the site since 2019.

2.11 However, subsequent Dormouse surveys carried out by Ecology Solutions from March to September 2022 on a precautionary basis. As part of this survey 100 Dormouse tubes were distributed across the Site. No evidence of presence of Dormice was recorded during monthly visits over this period.

2.12 The Site is not considered to support Dormouse.

Reptiles

2.13 Reptile Surveys were originally undertaken in 2008 by Hyder Ltd and recorded populations of Slow Worm *Anguis fragilis* and Common Lizard *Zootoca vivipara*.

2.14 ECOSA Ltd also undertook updated reptile surveys in 2019 across all suitable habitat within the Site. These surveys only identified a Slow Worm within the Site, with no instances of Common Lizard recorded.

2.15 In order to fully inform the mitigation strategy for reptiles within the Site, a suite of updated reptile surveys was undertaken by Ecology Solutions Ltd between May 2022 and July 2022.

2.16 Following an initial assessment to identify areas of suitable reptile habitat within the Site, a total of 60 ‘tins’ (0.5 x 0.5 metre squares of heavy roofing felt which are often used as refuges by reptiles) were distributed throughout all suitable reptile habitat within Site.

2.17 These tins were left in place for at least 2 weeks to ‘bed in’ and subsequently surveyed for reptiles beneath or upon the tins during suitable weather conditions. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask and raise their body temperature which allows them to forage earlier and later in the day.

2.18 As outlined in Table 1 below, a total of seven surveys were undertaken during suitable weather conditions. All surveyors were mindful to record all reptiles present on top of and under the tins, in addition to any observed when walking through the suitable habitats between the tins.

2.19 Suitable weather conditions to carry out surveys are when the air temperature is between 9 and 18°C. Heavy rain and windy conditions were avoided. All surveyors were mindful to record all reptiles present on top of and under the tins, in addition to any observed when walking through the suitable habitats between the tins. The results of each visit are also included in Table 1 below.

Survey #	Date	Weather	Common Lizard		Slow Worm		Grass Snake	
			Adult	Juvenile	Adult	Juvenile	Adult	Juvenile
1	06/05/22	Sunny 15 °C	0	0	6	0	0	0
2	12/05/22	Sunny 16 °C	0	0	0	0	0	0
3	16/05/22	Cloudy 14 °C	0	0	7	0	0	0
4	27/05/22	Sunny 17 °C	0	0	12	0	0	0
5	24/06/22	Sunny 17 °C	0	0	0	0	0	0
6	09/07/22	Sunny 18 °C	0	0	3	0	0	0
7	14/07/22	Cloudy 17 °C	0	0	0	0	0	0

Table 1. Reptile Survey Results

Badgers

2.20 The Phase 1 survey carried out by Ecology Solutions in March 2022 found no evidence of badger setts or activity within the Site or Wider Development Site. No previous appraisals/surveys have returned any records of badgers, therefore the Site is not considered to support Badger.

Bats

2.21 No buildings are present within the Site. Trees within the Site were assessed for their potential to support roosting bats.

2.22 During the specific surveys undertaken no trees were observed to have the potential to support roosting bats.

2.23 Through this investigation, it is considered that the Site does not support roosting bats.

2.24 Bat activity surveys (transect and automated surveys) were first undertaken by Ecology Solutions in June 2022 and are still ongoing. The results June, July and August are presented below, with results from the September surveys to follow when completed.

2.25 The July activity survey recorded a total of 56 registrations within the Wider Development Site (from one detector). The majority of these were from Common Pipistrelle *Pipistrellus pipistrellus* (53). The remaining registrations were a Soprano Pipistrelle *Pipistrellus pygmaeus* (1); Nathusius' Pipistrelle *Pipistrellus nathusius* (1)*;* and an unidentified *Nyctalus spp* (1). While a few registrations were recorded on the north-west and north-east site boundary, the vast majority of registrations were recorded in the south-east corner of the Site.

2.26 The July automated survey recorded a total of 183 registrations from one detector over five nights within the Site. The majority of these were of Common Pipistrelle (145). The remaining registrations were of; unidentified *Nyctalus* spp (27); Soprano Pipistrelle (8), Nathusius' Pipistrelle (2), unidentified *Myotis spp*. (1).

2.27 The August automated survey recorded a total of 295 registrations from two detectors over five nights within the Site. The majority of these were

of Common Pipistrelle (242). The remaining registrations were of; unidentified *Nyctalus spp* (31); and Soprano Pipistrelle (22).

2.28 It is considered that the update surveys undertaken to date, in addition to the suite of historic surveys undertaken at the site, provide a robust baseline in order to inform the impact assessment of the proposals and are suitable to discharge this element of the planning condition for this phase. Whilst a further survey is to be undertaken in September 2022, this is for completeness only and it is not considered that any significant changes in the baseline will arise in view of the recent and historic bat surveys undertaken at the Site.

3. AIMS AND OBJECTIVES

3.1 The aims and objectives of the EMS are to avoid or mitigate any harm / damage to features of ecological interest as well as to safeguard populations of protected species on site.

3.2 Furthermore, the aims of the EMS are also to enhance features of ecological interest retained within the development, in addition to maintaining populations of protected species on site, whilst providing for ecological / biodiversity enhancements within the proposed development.

3.3 The following aims and objectives have been identified:

- **Aim 1**: Safeguard, maintain and enhance retained and newly created habitats within the development site.

  The objectives set out to achieve this aim include:

  - To enhance (and create new) areas of grassland, scrub, hedgerow and treeline;
  - To enhance the diversity and interest of the flora of the site; and
  - To ensure the successful establishment of areas of proposed new planting and to maximise their ecological condition.

- **Aim 2**: Safeguard and maintain populations of protected species identified within the development site area at a favourable conservation status; and

  - To protect existing retained features of value to protected species;
  - Safeguard species populations onsite; and
  - To provide enhanced opportunities for protected species within the site, most notably reptiles.

- **Aim 3**: Increase biodiversity by maximising opportunities for flora and fauna.

  - To enhance the variety and value of other characteristic habitats present in the site including grassland and hedgerow.

3.4 Measures designed to deliver on these aims and objectives are set out within sections 4 of this report.

4. MITIGATION AND MANAGEMENT MEASURES

4.1 The impacts identified as well as mitigation and enhance measures to offset these impacts are set out below.

Aim 1: Maintain and Enhance Retained and Created Habitats

4.2 Specific habitat, protection and enhancement measures will be provided in respect the areas to be retained. This relates to the areas of retained boundary trees and scrub. Details are also set out below in relation to created habitats.

Native Hedgerows

4.3 New native hedgerows will be provided to strengthen the boundaries of the Wider Site. The planting mixture utilises a range of native, berry bearing species found in the local area (see Table 2).

Latin Name	Common Name
Acer campestre	Field Maple
Cornus sanguinea	Common Dogwood
Corylus avellana	Common Hazel
Crataegus laevigata	Midland Hawthorn
Crataegus monogyna	Hawthorn
Ilex aquifolium	Holly
Ligustrum vulgare	Wild Privet
Rosa canina	Dog Rose

Table 2: Native Hedgerow mix

4.4 The primary aim of hedgerow management will be to ensure successful establishment, and thereafter ensure development to an optimal structure for screening and biodiversity purposes.

4.5 New hedgerows will be planted in double staggered rows 300mm apart and at 500mm centres in each row. Where required, protection will be implemented to ensure young vegetation is not damaged by grazing species such as Rabbits. Planting will be undertaken during the autumn, winter or spring, during suitable weather conditions, with subsequent monitoring required in order to identify any potential gaps where plants have not survived. Should gaps or areas of dead hedgerow be identified, then replacement planting will be undertaken

4.6 Once established (anticipated Year 4), native hedgerows will be cut once every two years on a rotational basis where possible, in order to enhance their structure and value to nesting birds. Cuts shall typically be undertaken as late into the autumn / winter period as possible, in order to ensure that these features provide as much of a food resource as possible for birds over the winter period. Cutting should aim to deliver an ‘A’ shaped hedge structure, maintaining a height of 3m ideally. Where required in order to restore an optimal biodiversity structure, rotational hedge laying may be undertaken as an alternative management option. At this stage it is considered unlikely that hedge laying would be required any more frequently than once every 7th year.

4.7 Hedge works should avoid impacts to standard trees. Where existing scrub or trees are being retained, these will be subject to bolster planting as required using native, berry bearing species. The existing trees and scrub that are in poor condition will be subject to maintenance to encourage new growth and the development of a more consistent structure.

4.8 Hedgerows should be regularly inspected for gaps, weeds and excess outgrowth. Any management should be undertaken outside of the nesting bird season.

Wildflower Mix

4.9 Areas of new meadow grassland are to be provided within the Site. This will comprise a wildflower seed mix. The seed mixture will be utilised and sown at a rate specified by the supplier. Such a seed mix will provide floristic diversity in areas of openspace.

4.10 The species composition of seed mix is provided in Table 3 below.

Latin Name	**Common Name**
Vicia cracca	Tufted Vetch
Trisetum flavescens	Yellow Oatgrass
Silaum silaus	Pepper Saxifrage
Rumex acetosa	Common Sorrel
Rhinanthus minor	Yellow rattle
Prunella vulgaris	Common Self-Heal
Primula veris	Common Cowslip
Poterium sanguisorba sanguisorba	Salad Burnet
Plantago lanceolata	Buckthorn
Phleum bertolonii	Diploid Timothy
Lotus corniculatus	Common Bird's-Foot Trefoil
Leucanthemum vulgare	Ox-eye Daisy
Leontodon hispidus	Bristly Hawkbit
Knautia arvensis	Field Scabious
Geranium pratense	Meadow Cranesbill
Galium verum	Lady's Bedstraw
Galium album	White Bedstraw
Festuca rubra	Red Fescue
Festuca ovina	Sheep Fescue
Cynosurus cristatus	Crested Dogtail Grass
Centaurea nigra	Common Knapweed
Briza media	Quaking Grass
Betonica officinalis	Bishop's Wort
Anthoxanthum odoratum	Sweet Vernal Grass
Agrostis capillaris	Common Bent Grass
Achillea millefolium	Common Yarrow

Table 3: Wildflower Seed Mix

4.11 In addition to the above, areas of a grassland seed mix RE9 will be utilised to develop a lush grassy sward with a mix of flowering plants. This will add contrast to the grassland habitats and increase diversity further.

4.12 As a species-rich mixture tolerant of a range of conditions, these grassland areas will provide large open spaces for informal recreation (including dogs) and will provide biodiversity benefits for a range of species including foraging birds and bats, invertebrates and reptiles.

Wetland Mix

4.13 New attenuation features will be created within the development. The wetland habitat will be seeded with a mix of suitable native species that will provide a new habitat onsite for a range of different species. This feature will provide benefits for invertebrates, reptiles, birds, bats and a range of other species. The wetland planting mix proposed is listed below in Table 4. Such mixtures will be sown at the suppliers specifications.

Latin Name	**Common Name**
Succisa pratensis	Devil's Bit Scabious
Silene flos-cuculi	Ragged Robin
Schedonorus arundinaceus	Tall Fescue
Sanguisorba officinalis	Great Burnet
Rhinanthus minor	Yellow Rattle
Ranunculus repens	The Creeping Buttercup
Ranunculus acris	Meadow Buttercup
Pulicaria dysenterica	Common Fleabane
Poterium sanguisorba sanguisorba	Salad Burnet
Poa trivialis	Rough Bluegrass
Phleum bertolonii	Diploid Timothy
Lythrum salicaria	Purple Loosestrife
Lycopus europaeus	Gypsywort
Lotus pedunculatus	Greater Birdsfoot Trefoil
Leucanthemum vulgare	Oxeye Daisy
Leontodon autumnalis	Autumn Hawkbit
Juncus inflexus	Hard Rush
Iris pseudacorus	Yellow Flag Iris
Filipendula ulmaria	Meadowsweet
Festuca rubra juncea	Red Fescue
Eupatorium cannabinum	Hemp Agrimony
Deschampsia cespitosa	Tussock Grass
Cynosurus cristatus	Crested Dogstail
Caltha palustris	Marsh-marigold
Alisma plantago-aquatica	European Water Plantain

Table 4: Wetland Seed Mix

4.14 This new habitat will link with other grassland types and scattered shrubs and trees to create a mosaic of habitats across the Site. This will provide greater habitat diversity as well as connectivity through the Site.

Amenity Planting

4.15 The proposals include new areas of amenity planting (i.e. hedging, shrubs, climbers and herbaceous plants) surrounding new buildings and the inclusion of trees throughout the site.

4.16 New planting consists of native species of local provenance or species of known value to wildlife wherever possible. The new landscape planting will provide additional habitats for invertebrates, birds and bats within the development footprint.

4.17 Any management e.g. pruning / lopping will be carried outside the bird nesting season (**March – August inclusive**) to avoid any potential offence, or after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present. Where possible any dead wood produced will be retained as an ecological feature, either as standing deadwood or as log piles, offering new habitat for saproxylic invertebrates.

Amenity Grassland

4.1 Any new areas of amenity grassland turf will be managed regularly in line with good horticultural practices.

4.2 The areas of amenity grassland will be cut on a regular basis. Checks will be made monthly and the grass will be cut when it reaches **c.100mm** long, back to a length of **c.35mm**. Mowing will be required more frequently during the spring / summer seasons.

Native Shrub and Tree Planting (including retained trees)

4.3 New native shrub and trees are to be planted within the Site. These will provide additional opportunities for invertebrates, small mammals and birds.

4.4 The mix of native shrub and trees are included below within Tables 5.

Latin Name	**Common Name**
Acer campestre	Field Maple
Cornus sanguinea	Dogwood
Corylus avellana	Hazel
Crataegus monogyna	Hawthorn
Euonymus europaeus	Spindle
Ilex aquifolium	Holly
Ligustrum vulgare	Wild Privet
Sambucus nigra	Elder
Viburnum opulus	Guelder Rose

Table 5: Native Shrub Mix

4.5 A selection of standard trees will be planted within the green spaces and along streets as part of the landscape strategy.

4.6 Planting of new trees will be undertaken during the **autumn, winter or spring**. For the first five years after planting, regular health checks of the trees will be undertaken to ensure successful establishment especially during periods of dry weather, to ensure that they are not affected by drought and to identify any potential gaps where plants have not survived. Any failed new tree planting will be replaced with native species of local provenance and of similar species content to that within the site.

4.7 Appropriate management of any new native shrub and trees will be undertaken in order to enhance their ecological value, and this will include trimming being only undertaken during **winter months**, when berries are no longer present to maximise foraging opportunities for birds in autumn.

4.8 New native hedgerows will be trimmed annually, and the hedgerow maintained at a suitable height. The shrubs will be managed with a thick structure, and should the shrubs become gappy or with sparse growth at their bases, the shrubs will be subject to bolster planting.

4.9 Shrubs will be cut back every **January / February** in order to maintain healthy growth and a good structure and to also avoid the main bird-nesting season, March-August (inclusive).

4.10 For the first five years after planting, regular health checks of the hedgerows will be undertaken especially during periods of dry weather, to ensure that the hedgerows are not affected by drought. Any failed specimens will be replaced with similar species content and size to that within the site.

4.11 All retained and new trees within the site will be subject to appropriate arboriculture maintenance where necessary, to help prolong their life and ensure they are safe. The condition of the maturing trees within the site will be monitored during the first five years following completion of the development, to ensure a favourable condition is maintained.

Aim 2: Maintain Populations of Protected Species at a Favourable Conservation Status

Bats

4.12 A Ground Level Tree Assessment was undertaken on the trees along Spine Road, including those requiring removal for the A226 London Road Access works and areas where site levelling requires existing vegetation to be removed. No suitable bat roosting features were observed as present within the Site.

4.13 A proposed lighting plan has been produced for the development, produced by DFL Ltd. The type and position of luminaires have been selected in order to avoid / minimise light spill on adjacent areas where light is not necessary, namely the boundary features and areas of openspace. However, given the nature of the scheme, consideration had

also been given to the standards and guidance related to delivering a lighting strategy that is safe in relation to pedestrian and road traffic. Notwithstanding this, the proposed lighting strategy is effective in ensuring that the majority of boundaries and open space areas within the north and south of the development area illuminated by 1lux of less. In light of the survey results for bats is it considered that the no significant impacts to bats are considered to arise and that connectivity through the boundaries of the Site will be retained.

4.14 New luminaries are of an LED design which is preferred over other types due to them be recognised to have a lower impact on bats. Again, it should also be noted that the majority of the bat activity onsite is related to common and widespread species that are less sensitive to lighting. On this basis it is considered that the proposed lighting strategy will not significantly affect bats using the Site.

4.15 In line with the previously agreed strategy new native shrub, wildflower and wetland grasslands and tree planting will provide foraging and commuting features as part of the development.

4.16 Retained and enhanced boundary vegetation will maintain existing foraging and navigational opportunities.

4.17 The creation of new areas of wildflower grassland, wetland and shrub planting, will also provide new and enhanced foraging and navigational opportunities for bats that will more than offset any minor losses resulting from the proposals.

4.18 As previously approved as part of the Ecological Mitigation Strategy produced by ECOSA (dated 14th October 2020) new roosting opportunities will be created with the erection of a mix of roost boxes both on buildings and on retained trees. 30 bat boxes are to be installed on new buildings and 10 bat boxes are to be installed on retained trees. It is proposed that boxes on retained trees are Schwegler type 1FF, 2F and 2FN boxes (or similar), which will be erected on suitable retained semi-mature trees within the site (see Plan ECO1).

4.19 On buildings roost features will be integrated into buildings with the use of Ibstock type boxes (or similar). The locations have been selected based on the proximity to retained semi-natural habitat and away from direct illumination and are therefore, primarily proposed for buildings on the boundaries of the development site (see Plan ECO1).

4.20 Bat boxes will be checked **annually** to ensure they are in place and replacements supplied if necessary.

Badger

4.21 While no Badgers are known to be present onsite consideration of the species is necessary due to their highly mobile nature. Where deep, steep sided excavations are required timber ramps should be inserted into excavations that are left over night, to allow a badger to escape of its own accord, in the unlikely event that they become trapped.

Birds

4.22 Vegetation clearance will be undertaken outside the breeding bird season of March to August, inclusive, or if this is not possible, an ecologist will be present immediately prior to clearance to check vegetation. Active nests will be left undisturbed with a 5-10 metres buffer until nesting ends.

4.23 The development proposals will retain existing foraging and nesting opportunities for birds within the site, i.e. the boundary trees and scrub. Moreover, the provision of a new native hedgerow, shrub and tree planting, as part of the landscape proposals will provide new suitable nesting and foraging opportunities for birds to offset any losses. The provision of new berry/fruit-bearing species will also provide seasonal resources for birds.

4.24 The proposed development will incorporate new opportunities for breeding birds also. 10 Schwegler (or similar) bird boxes will be erected on suitable retained trees (see Plan ECO1). Old nesting material to be removed from bird boxes in **January** and treated to remove any remaining parasites. These boxes will maximise the species complement attracted to the site. Any damaged or lost bird boxes will be replaced.

4.25 On buildings nesting boxes will be provided in the form or 10 Sparrow Terraces and Swift boxes (or similar). The locations have been selected based on the proximity to retained semi-natural habitat and away from direct illumination and are therefore, primarily proposed for buildings on the boundaries of the development site (see Plan ECO1).

4.26 Management of habitats will be undertaken with due consideration for potential use by birds. Cutting of vegetation, particularly those features that provide important nesting habitats (including hedgerows and trees) will be undertaken during the winter months. Should the above timing constraints conflict with any timetabled works, it is recommended that works commence only after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present. If nesting birds are found to be present during checks then clearance would need to be delayed until young have fledged.

Reptiles

4.27 A population of slow worm has been recorded within the Site, which are mainly restricted to the suitable reptile habitat along south eastern boundary as well as the north western boundary of the Development Site. To ensure that no reptiles are killed or injured as a result of the preliminary works, a precautionary method of works will be employed.

4.28 In light of the sub-optimal ground conditions present within the majority of the works area, clearing reptiles from the Site will utilise habitat manipulation to persuade active reptiles to move of their own accord.

4.29 As part of site preparation, the limited areas of grassland and scrub such as within the Spine Road works area will be cut and stripped by an excavator under the supervision of an ecologist. This work will be

undertaken in the reptile active season which runs from April to October (subject to weather conditions), inclusive.

4.30 Any reptiles found during the site clearance works will be relocated by the supervising ecologist to retained habitat on the eastern boundary of the Site, within the proposed retained grassland and scrub (see Plan ECO1).

4.31 However, it is noted that more suitable habitat is present and due to the linear nature of the habitat it would not be possible to utilise manipulations to robustly move reptiles into secure locations. A detailed reptile strategy has been provided below that will be followed in relation to the wider development, where significant suitable habitat has to be removed.

Detailed Reptile Strategy

4.31.1 In order to safeguard reptiles from harm which could arise as a result of the development works in its entirety, a translocation exercise will be undertaken. This exercise will need to be completed prior to the commencement of works affecting significant areas of suitable reptile habitats within the Site (i.e. areas of longer grassland and scrub / immature trees).

4.31.2 Reptiles will be captured from the development footprint and translocated to the receptor area on the eastern boundary (see Plan ECO1). The receptor site is to be subject to long-term management for the benefit of reptile species (as outlined further below).

4.31.3 In 1998 the Herpetofauna Groups of Britain and Ireland (HGBI) produced the advisory note entitled 'Evaluating Local Mitigation/Translocation Programmes: Maintaining Best Practice and Lawful Standards'. This advisory note presents a series of best practice guidelines and makes recommendations in regard to all aspects of herpetofauna translocations including those for partially protected reptile species. The reptile mitigation strategy outlined below has due regard to this guidance.

4.31.4 The following information is set out further below:

I. Duration of Exercise;
II. Capture Method;
III. Location of Refuges;
IV. Size of Refuges
V. Density of Refuges;
VI. Trapping Procedure;
VII. Data Collection;
VIII. Welfare of Trapped Animals;
IX. Reptile Exclusion Fencing;
X. Habitat Manipulation; and
XI. Destructive Search.

Duration of Exercise

4.31.5 The guidance produced by HGBI suggests that a density of 50 tins per hectare, checked once daily for 60 days, would be likely to be

needed to carry out a translocation of a low population. For this site, an increased density of tins (100 tins/ha) and more than one check per day is proposed, as well as habitat manipulation (see below), in order to achieve the required trapping effort.

4.31.6 The main test of the success of an exercise is whether a significant proportion of reptiles have been removed from the site, and the aim of this translocation exercise is to achieve this objective.

4.31.7 Translocation of reptiles will only be undertaken when reptiles are active and out of hibernation. Typically, this will be in the period mid March – October, with April, May and late August – September generally being optimal months for capture. Translocation would not commence before mid March 2023 (weather permitting) and would continue through to completion (ahead of the hibernation period). Depending on the prevailing weather, trapping visits will be undertaken two times per day by an experienced ecologist.

4.31.8 Trapping and translocation would only be undertaken once the receptor area has been deemed suitable for release. In the case of the eastern boundary of the Site, optimal habitat is already present in the form of grassland and scrub, however further enhancements will be delivered with some scrub removal and new wildflower and wetland grassland seeding and scrub planting. Five bespoke hibernacula would still be delivered ahead of any release at the site.

4.31.9 The translocation exercise will proceed until a period of at least five days' of no capture during suitable weather conditions is achieved. Whilst there is no accepted standard in relation to the number of no capture days required to give confidence as to the effectiveness of the exercise, Ecology Solutions has regard to guidance issued by Natural England in relation to Great Crested Newt capture effort and uses professional judgement and experience regarding such matters. Given the higher number of survey visits and greater tin density to be undertaken, and that surveys of the translocation site identified low populations of reptiles, it is anticipated that this will be achieved in fewer than the specified 60 days. On the basis that twice the minimum required effort would be employed (increased tin density and two daily checks of refugia), it is considered that a minimum of 30 days of trapping would be applicable in this instance, however the results of the ongoing exercise will inform the final duration.

Capture Method

4.31.10 A number of methods of catching reptiles are well documented and in common use at the present time in Britain. These include techniques such as noosing, pitfall trapping, tinning (use of artificial refugia such as roofing felt) and grass or grass/brush refugia trapping.

4.31.11 The recommended survey and trapping methodology for common reptiles is the use of corrugated metal sheets and/or felt mats (collectively known as tins), which act as artificial refuges. Tins are

favoured, as reptiles are ectothermic (cold blooded), and will preferentially use such refuges to raise their body temperature at certain times of day. Reptiles typically take advantage of the fact these refuges warm up more quickly than the surrounding areas and during certain times of the day, depending on weather conditions, will sit directly beneath the tins. By checking these refuges at appropriate times reptiles can be seen and captured by hand.

Location and size of artificial refuges

4.31.12 A larger quantity of tins will be located in areas identified as the most suitable reptile habitat and good coverage will be achieved throughout the site.

4.31.13 Refuges will be approximately 0.5m^2 in size.

Density of Refuges

4.31.14 The density of tins will significantly exceed that recommended by HGBI for a low population. At least 100 tins per ha will be used in this instance.

Trapping Procedure

4.31.15 Tins will be checked in the morning as they are heating up, but before they become too hot, and as they cool down in the afternoon/evening, but before they become cold. As previously stated, these are the optimal times of the day to catch reptiles. The best trapping times will vary according to the prevailing weather conditions on any particular day and precise surveying times will be adjusted accordingly.

4.31.16 The HGBI guidelines recommend that refugia should be checked once a day. The tins will be checked twice daily wherever possible, giving an effective doubling of trapping effort over the period of the exercise.

Data Collection

4.31.17 A recording form will be used to keep records of the data collected throughout the exercise. Information to be recorded during each visit will include:

I. Date of trapping visit;
II. Visit number of the day;
III. Time of visit;
IV. Weather (percentage cloud cover/rain/sun);
V. Temperature;
VI. Species of individual captured;
VII. Sex of individual captured;
VIII. Age of individual captured (adult/juvenile);
IX. Area on site from which individual captured;
X. Individuals of species seen but escaped capture; and

XI. Other - general observations.

Welfare of Trapped Animals

4.31.18 The welfare of captured reptiles will be paramount at all times throughout the exercise.

4.31.19 Upon capture, reptiles will be placed in cloth bags or suitable vivaria with soft vegetation providing them with an appropriate environment in which they will be temporarily held until the trapping round is completed. No more than three animals will be held in the same bag / vivaria at any time and these will always be of the same species and roughly equal size.

4.31.20 After completion of the round, trapped reptiles will be immediately transported to the receptor site, whereupon the captured reptiles will be released at one of the five proposed bespoke hibernacula.

Reptile Exclusion Fencing

4.31.21 In line with best practice, to prevent any possible inward migration, a temporary herpetofauna fence will be installed within the proposed development footprint. The receptor site will be fenced as shown on Plan ECO1. The fence will accord with accepted specifications and will be erected prior to the commencement of the translocation exercise. It facilitates the trapping out of the development footprint within which reptile habitat will be subject to damage by machinery during construction operations.

4.31.22 It is proposed that a supervised habitat manipulation exercise can be undertaken in some areas where suitable, rendering that area devoid of reptile habitat, forcing any reptiles into suitable retained habitat along the boundary. Short lengths of additional fencing could be used to further secure this area from reptile ingress if deemed necessary by the supervising ecologist.

4.31.23 Site personnel will be made aware of their responsibilities in relation to the herpetofauna fencing. Any breaks in the herpetofauna fencing will be promptly repaired.

4.31.24 The herpetofauna fencing will remain in place throughout the translocation exercise and will only be removed following completion of development works which have potential to give rise to an offence (e.g. killing or injuring of reptiles.

Habitat Manipulation

4.31.25 Habitat manipulation will be employed where appropriate during the translocation exercise, at the discretion of the supervising ecologist. This will consist of removal of refugia and debris by hand as well as targeted, stepwise strimming or cutting of vegetation (firstly to a height of 15cm and subsequently to a maximum height of 5cm) in order to concentrate reptiles in particular areas and thereby help to

focus the trapping effort. Habitat manipulation works will be overseen by a suitably qualified ecologist.

Destructive Search

4.31.26 A destructive search is a further capture method that can be used to locate and capture any reptiles that remain on the site after the trapping exercise has been completed. This shall only be undertaken after the completion of the minimum trapping effort as detailed above. It is important to note that reasonable effort will already have been demonstrated by the translocation exercise, and the use of a destructive search (which is a capture method in its own right) constitutes further trapping effort still.

4.31.27 Any features which may provide refuge for reptiles will be teased apart by hand or by appropriate machinery and thoroughly searched to ensure no reptiles are present. All areas of suitable habitat will be stripped in a systematic manner with the use of machinery with all site arisings to be thoroughly searched for the presence of reptiles prior to their removal from site.

4.31.28 A supervising ecologist will be in place during these works in order to capture any reptiles.

4.31.29 Following the destructive search there will be no suitable habitat present for the reptiles to return to within the development footprint. Construction works may therefore begin without any further reptile constraint in the cleared area.

Invertebrates

4.32 The proposed new wetland grassland, tree and shrub planting will offer new opportunities for invertebrates. A variety of plant species will be used as part of the landscape scheme which will increase the attractiveness of the site for a range of different invertebrate species.

4.33 In addition, log piles will be created from vegetation removal required as part of the proposed development to create habitats for invertebrates.

Aim 3: Increase Biodiversity by Maximising Opportunities for Flora and Fauna

4.34 The new planting within the proposed development will comprise native species of local provenance or those of benefit to wildlife and will increase the floristic diversity of the site. The attenuation areas, new tree/hedgerow planting and enhanced retained areas of woodland will provide enhanced foraging and nesting resources for birds, foraging and navigational resources for bats and terrestrial habitats for Badgers and reptiles.

PLANS

PLAN ECO1

Ecology Mitigation Plan

KEY:

- DEVELOPMENT SITE BOUNDARY
- REPTILE RECEPTOR AREA
- INDICATIVE LOCATION OF BIRD BOXES
- INDICATIVE LOCATION OF BAT BOXES
- INDICATIVE LOCATIONS OF REPTILE HIBERNACULA

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ECOLOGY MITIGATION PLAN

Rev: A

Oct 2022

APPENDICES

APPENDIX 1

Development Phasing Plan

PH 0
LONDON ROAD ACCESS

LONDON ROAD

PHASE 0

PH 1

PH 0
SPINE ROAD

PH 2

PH 3

Recreation Ground

Horns Cross

Playground

Allotment Gardens

Cemetery

Health Centre

Small Small Supermarket

Loading Bay

El Sub Sta

Mast

LB

28.4m

28.1m

26.4m

37.6m

39.8m

42.9m

44.6m

46.7m

49.0m

51.7m

52.6m

54.8m

N

Notes	Revision	Date	By	Chkd
– Copyright in this drawing remains the property of BM3 Architecture Limited. – Do not scale this drawing. Work to figured dimensions only. – Contractors and consultants are to advise BM3 Architecture Limited of any discrepancies.	Rev A - Phase 0 Spine Road updated	04.10.2022	JB	JGSJ

CDM Notes

0m 25m 50m 75m 100m 125m

1:1250 Scale Bar

Project	Drawing	Client
STONEPIT 2, DARTFORD	PHASING PLAN	Taylor Wimpey

Scale	Dated	Job No.	Drawing No.	Drawn by	Checked	CiSfb Element	Revision
1:1250@A1	29.09.2022	71615	D002	MT	JB	PLANNING	A

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APPENDIX C
NATURE AND HERITAGE CONSERVATION SCREENING REPORT

Nature and Heritage Conservation

Screening Report: Bespoke Waste

Reference	**EPR/MB3003CY/A001**
NGR	**TQ 56888 73850**
Buffer (m)	**650**
Date report produced	**10/05/2023**
Number of maps enclosed	**2**

The nature and heritage conservation sites and/or protected species and habitats identified in the table below must be considered in your application.

Nature and heritage conservation sites	Screening distance (m)	Further Information
Sites of Special Scientific Interest (SSSI)	1000	Natural England
Darenth Wood		

Protected Habitats	Screening distance (m)	Further Information
Deciduous woodland	up to 50m	Natural England

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.

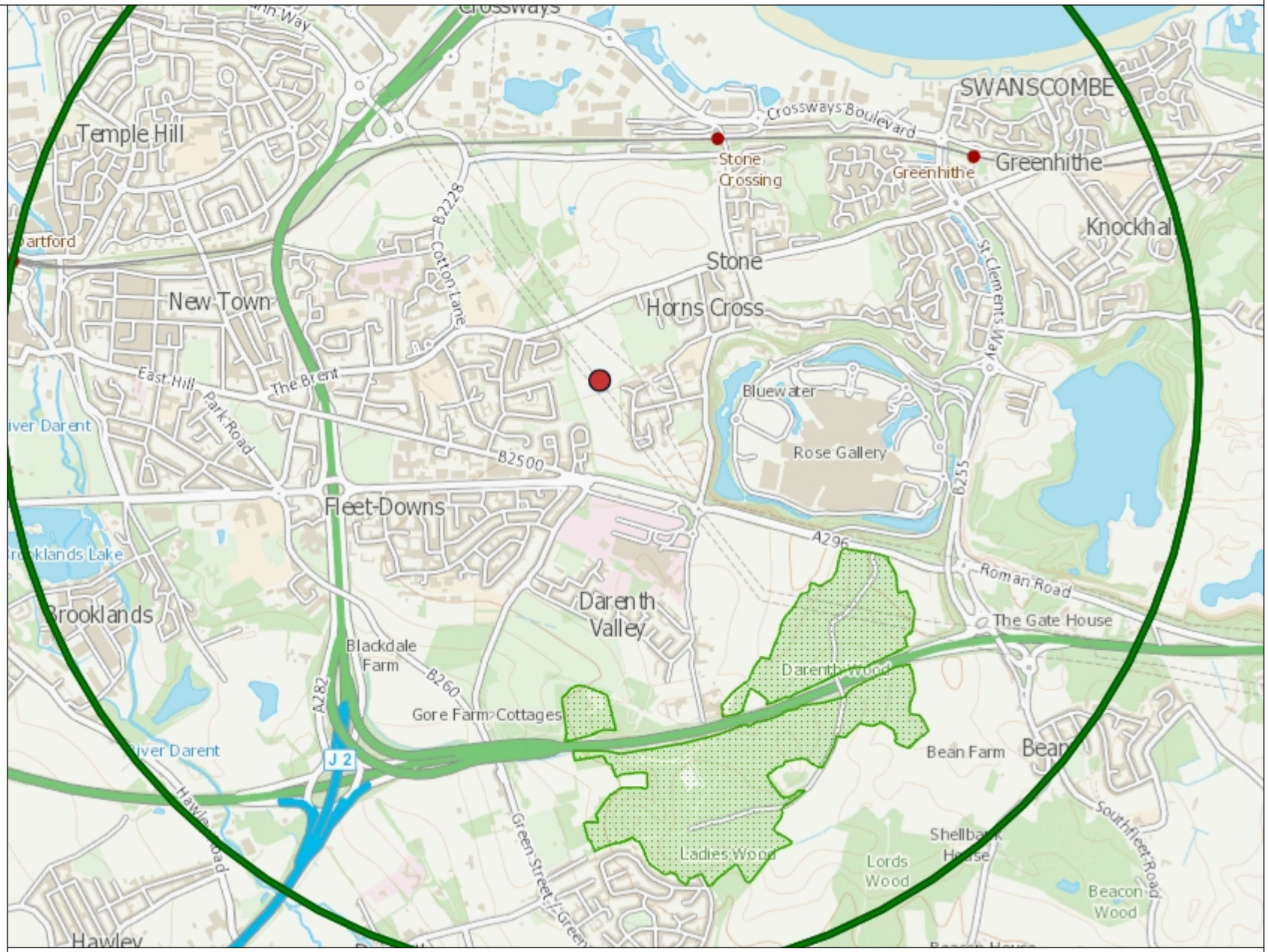
Please note the nature and heritage screening we have conducted as part of this report is subject to change as it is based on data we hold at the time it is generated. We cannot guarantee there will be no changes to our screening data between the date of this report and the submission of the permit application,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

Sites of Special Scientific Interest

Environment Agency

Legend

SSSI (England)



1: 25,000

0 625

Metres

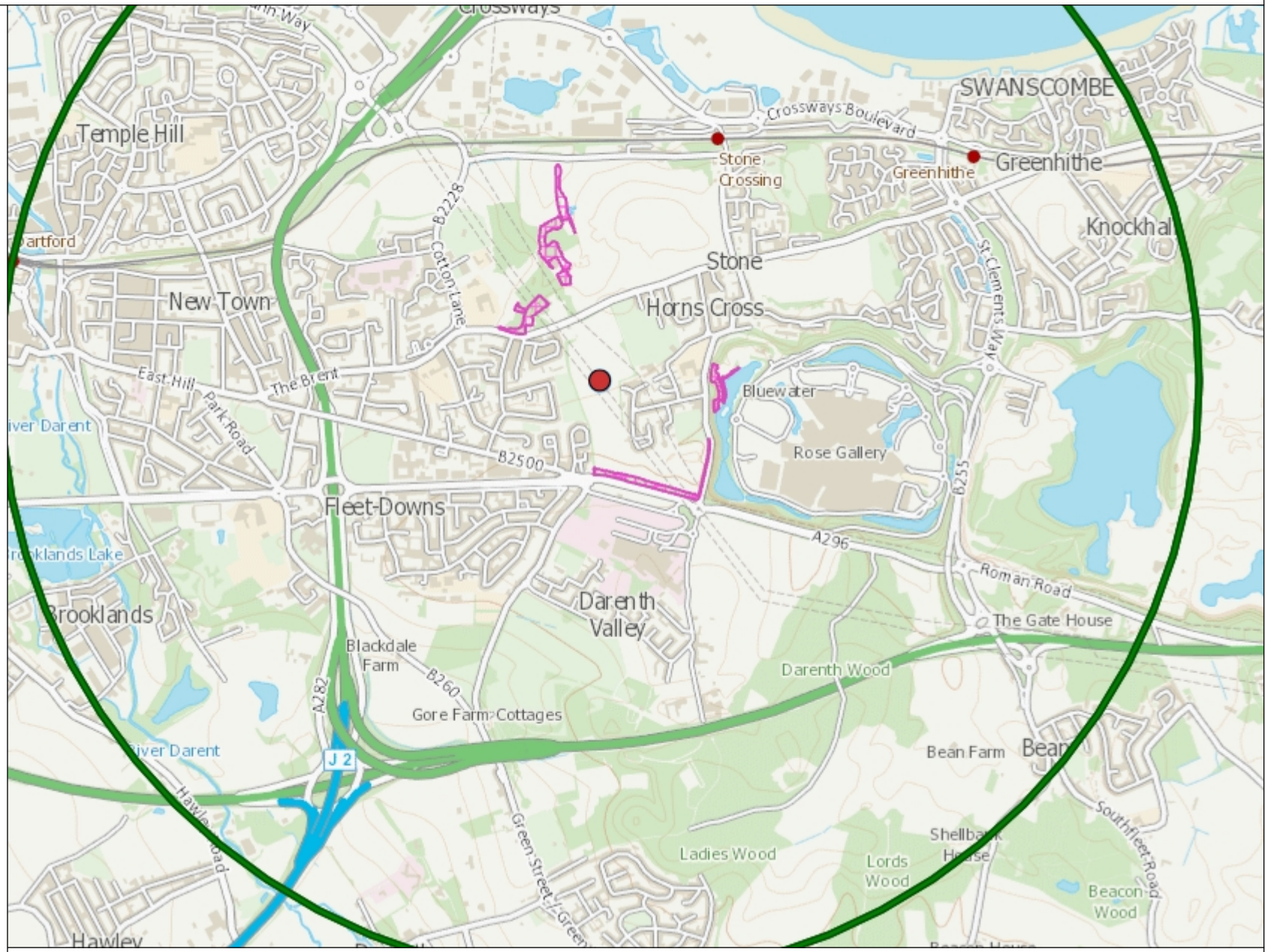
N W E S

Protected Habitats

Environment Agency

Legend

Protected Habitats screened for Env Permits



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0 625

Metres

N W E S