ESS – LAND AT NORTH CRAY ROAD, SIDCUP

Ecological Impact Assessment

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SUMMARY

Engain were commissioned by Net Zero Thirty Two Ltd to undertake an Ecological Impact Assessment of a proposed 200mw energy storage system (ESS) and associated infrastructure on land at North Cray Road, Sidcup. The site of the proposed ESS is an agricultural field sown with grass cover, which is of negligible botanical value. The boundary hedgerows are well established and contain a variety of species. The hedges are used by a range of birds including some species that are of conservation concern, and they also provide good foraging and commuting habitat for bats. There is a single-hole, outlier badger sett on the edge of the site.

In the absence of avoidance or mitigation measures there is a risk that wildlife could be disturbed or harmed during construction and decommissioning of the ESS, but it would not lead to any ecologically significant effects beyond the Site level. Without measures to enhance the retained habitats, the construction and operation of the ESS would result in a temporary (for the 40-year lifespan of the facility) net loss of habitats.

The proposed layout and landscaping of the ESS site has been carefully designed to avoid ecological impacts and to deliver net gains for biodiversity. A new hedge and tree line will improve green infrastructure and habitat connectivity (in accordance with Policy G1 of the London Plan) and a wildflower meadow will be created in the retained areas of the field. The landscaping proposals are compliant with Bexley Local Plan Policies SP9(h) and DP20 and would deliver a net gain of over 80% in habitats and 20% in hedgerows, and an Urban Greening Factor of >4.

Approval of the planning application would be compliant with the NPPF requirement for delivering measurable net gains, Bexley Local Plan Policy DP20 for the enhancement of biodiversity and the mandatory net gain regulations.

1. INTRODUCTION

1.1. Engain were commissioned by Net Zero Thirty-Two Ltd to undertake an Ecological Impact Assessment of a proposed for the development of a 200mw energy storage system (ESS) and associated infrastructure at land at North Cray Road, Sidcup.

1.2. The location of the site can be seen in **Figure 1**. The site comprises an arable field surrounded by hedgerows. The ordnance survey grid reference for the site is SS49032506. An illustration of the proposed layout is shown in **Figure 2**. This will be a temporary installation for a period of 40 years.

1.3. The purpose of the EcIA is to:

- Identify and assess the relative importance of any habitats or wild animals that could be affected by the project.
- Determine the nature and scale of any potential impacts and their ecological effects.
- Describe measures that will be adopted to avoid, mitigate, or compensate for any potential impacts that could result in significant ecological effects.
- Provide recommendations for the delivery of a net enhancement for habitats and wild animals that are proportionate and appropriate to the project and its setting.

1.4. The EIcA is based upon an ecological data search and desk study as well as field surveys of the site.

Figure 1, "Site Location Plan"

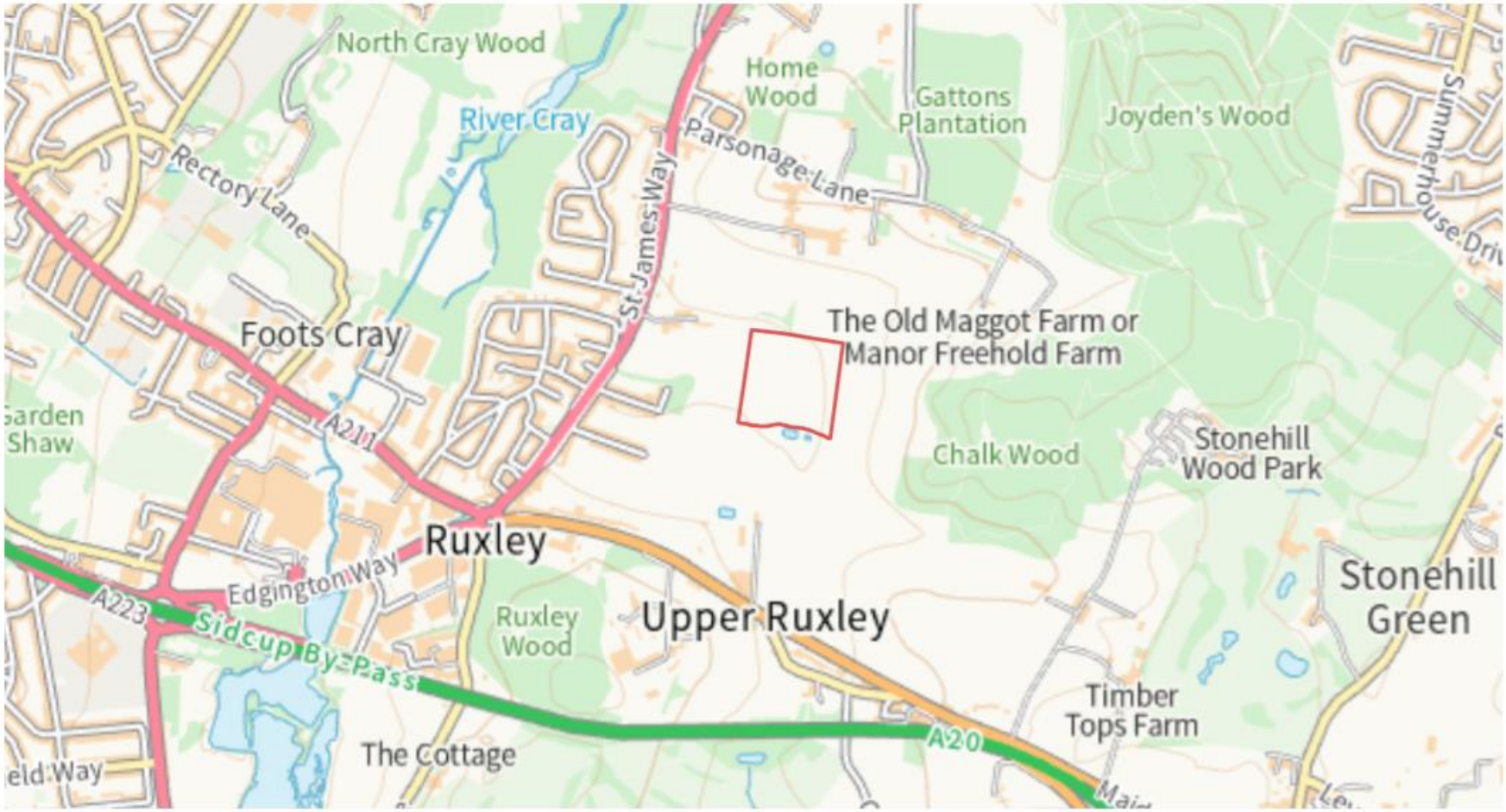
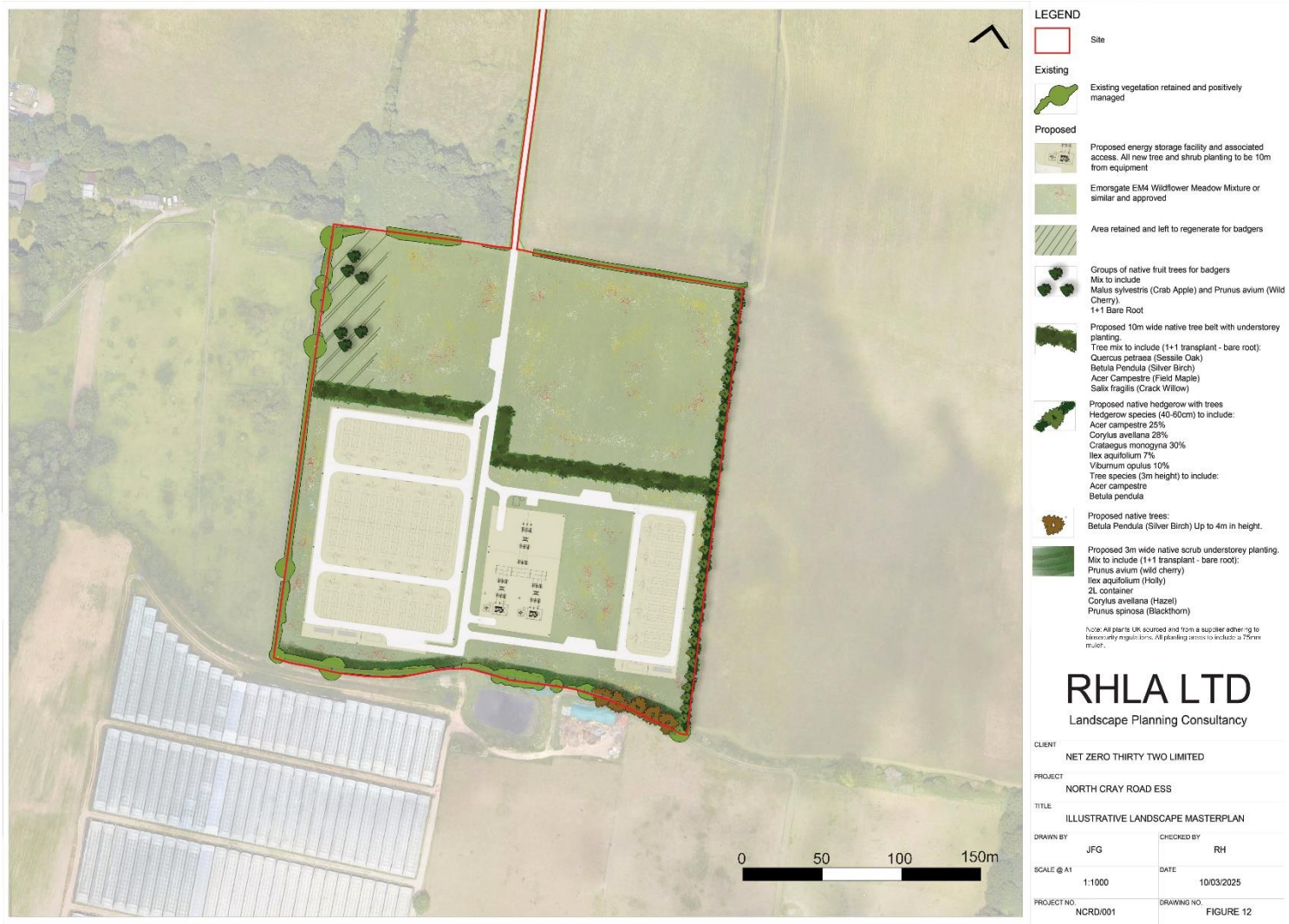


Figure 2, "Proposed Layout"



2. LEGISLATION AND PLANNING POLICY

2.1. Wildlife in the UK is protected through European Directives, which are transposed into national legislation, supported by a range of national and local policy and guidance. Recent changes in planning policy and legislation have gone beyond site and species-specific protection to set broader goals for the conservation and enhancement of the natural environment and halting the continued loss of biodiversity in the UK.

2.2. Development can contribute to these goals through, for example, protecting the best features of a site and making them a valued part of the site's new use, and by incorporating enhancements to improve the site's value for wildlife.

2.3. The sections below provide a brief guide to the principal legislation and policy that sets the terms of reference for ecological appraisals in the UK. This is not intended to be a full description of all the obligations enacted by the various referenced documents, which should be referred to in their original form for the full details.

2.4. It is the responsibility of those involved with the development works to ensure that wildlife protection and nature conservation legislation is complied with at every stage of the project. Such legislation applies even in the absence of related planning conditions.

Relevant Legislation

2.5. The principal pieces of legislation relating to wildlife that are of relevance to this report are:

- *The Environment Act 2021* and subsequent Biodiversity Net Gain Regulations
- *Conservation of Habitats and Species (Amendment) Regulations 2012.*
- *The Wildlife and Countryside Act 1981 (as amened).*
- *The Countryside and Rights of Way Act 2000.*
- *The Natural Environment and Rural Communities Act 2006.*
- *The Protection of Badgers Act 1992 (which is extended under The Hunting Act 2004).*

2.6. The main focus of much of this legislation is the protection of sites and species, the delineation of precisely how they are protected, and what actions would constitute an offence. This report provides guidance on whether any protected features are likely to be affected by the development proposal, and how offences under the legislation can be avoided.

National Planning Policy

2.7. National, regional, and local planning authorities are obliged to follow key principles to ensure that the potential impacts of planning decisions on biodiversity conservation are fully considered. The National Planning Policy Framework sets out the Government's policies for the protection and enhancement of biodiversity through the town and country planning system. This encourages the contribution to, and enhancement of, natural and local environments through minimising the impacts on biodiversity and providing net gains in biodiversity where possible.

2.8. Planning authorities are required to follow key principles in their consideration of potential impacts of planning decisions on biodiversity conservation. Circular 06/05: Biodiversity and Geological Conservation provides guidance on the application of the law relating to planning and nature conservation and complements the National Planning Policy Framework.

2.9. The presence of species protected under UK and European legislation are a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

2.10. Ecological appraisals and protected species surveys are therefore designed to provide local planning authorities with the baseline information they require in order fully consider the potential ecological effects of a planning application.

Adopted Plan

2.11. The adopted Development Plan for the London Borough of Bexley comprises the Bexley Local Plan (2023) and the London Plan (2021).

Bexley Local Plan (2023)

2.12. **Policy DP11(b)** sets out that a high standard of landscape design is expected, with due regard to the character of the surrounding area. This has cross-relevance between landscape and ecological design matters, which are addressed in this report and in the landscape strategy.

2.13. **Policy SP9(h)** requires that landscaping makes use of native plant species of native provenance.

2.14. **Policy DP20** requires that landscaping should contribute to the enhancement of biodiversity and appropriately mitigate impacts of proposed developments.

2.15. **Policy DP20** also sets out that ecological buffer zones must be provided to ensure designated sites of conservation are appropriately protected from proximate development – this policy is not relevant here as there are no such sites adjacent to the proposed development that are at risk of harm.

London Plan (2021)

2.16. **Policy G1** states that development proposals should incorporate elements of green infrastructure that integrate into London's wider green infrastructure network.

2.17. **Policy G5** requires that major development proposals should contribute to the greening of London and include elements of greening such as landscaping, trees and green roofs/walls.

2.18. **Policy G6** sets out that SINCs should be protected, and the mitigation hierarchy (avoid, mitigate, compensate) should be followed.

Biodiversity Net Gain

2.19. Planning permission, if granted, would be subject to the biodiversity gain condition as set out in Article 7 of the Town and Country Planning (Development Management Procedure) (England) Order 2015 (as amended).

Urban Greening

2.20. There is a requirement under both London Plan Policy G5 and Bexley Local Plan Policy DP21 for development to achieve a minimum level of greening.

3. METHODOLOGY

Desk Study

3.1. Desktop data were obtained from Greenspace Information for Greater London (GIGL) in March 2025, which provided biological records concerning both species and habitats within 2km of the red line boundary.

Field Survey

3.2. A habitat survey was undertaken on the 4th of July 2024. The field survey method was based on the UK Habitats Classification Survey (UK Habs) as per the UK Habs User Manual (2023).

3.3. Considering the size of the site and the nature of variation in habitats across the site, the appropriate scale of mapping was determined to be a fine scale Minimum Mapping Unit, meaning no areas of habitats less than 25m^2 or 5m in length if a linear feature need be recorded.

3.4. The Primary Habitats were mapped using the professional edition of the hierarchy, at a minimum of a Level 4 habitat using the UK Habs Habitat Definitions as a guide. Once a Primary Habitat was assigned, a Secondary Code was added to further define the habitat type. Habitats are described with reference to their dominant and constituent species, and their UK Habs codes are given in the relevant sections. In some cases, secondary codes are referred to where there is sufficient variation in the habitat to warrant their use. The survey also included a search for any invasive plant species such as *Impatiens glandulifera* or *Reynoutria japonica*.

3.5. The potential for the site to support legally protected and notable species has been assessed using the desk study results combined with observations during the field survey.

3.6. The assessment of habitat suitability for protected and notable species was based on knowledge and judgement of an experienced professional informed by sources of guidance on habitat suitability assessment for key animal groups including:

- Amphibians (Gent and Gibson, 2003)
- Badgers (Harris et al., 1991; and Roper, 2010);
- Bats (Collins, 2016; and Mitchell-Jones, 2004);
- Birds (wintering and breeding) (Gilbert et al., 1998; and Bibby et al., 2000);

- Terrestrial Invertebrates (Drake et al., 2007; and Kirby, 2001).

Wintering Bird Surveys

3.1. Five wintering bird surveys were conducted between November 2024 and March 2025 (**Table 1**).

3.2. The surveys were conducted following the methods set out in Gilbert et al, (1998) and following bird survey guidelines for non-breeding walkover surveys. Results were recorded using survey sheets detailing the times recorded, locations referenced on a map, behaviours and species following the BTO (British Trust for Ornithology) code.

Table 1, "Wintering Bird Survey Dates and Conditions"

Date	Time	Temp (°C)	Bft	Okta
09/11/2024	7:30am - 8:25am	7	1	8
14/12/2024	8:50am - 9:40am	6	1	8
01/01/2025	8:00am - 8:45am	4	1	1
01/02/2025	7:35am - 8:35am	1	1	0
22/03/2025	7:05am – 8:00am	12	0	8

Reptile Surveys

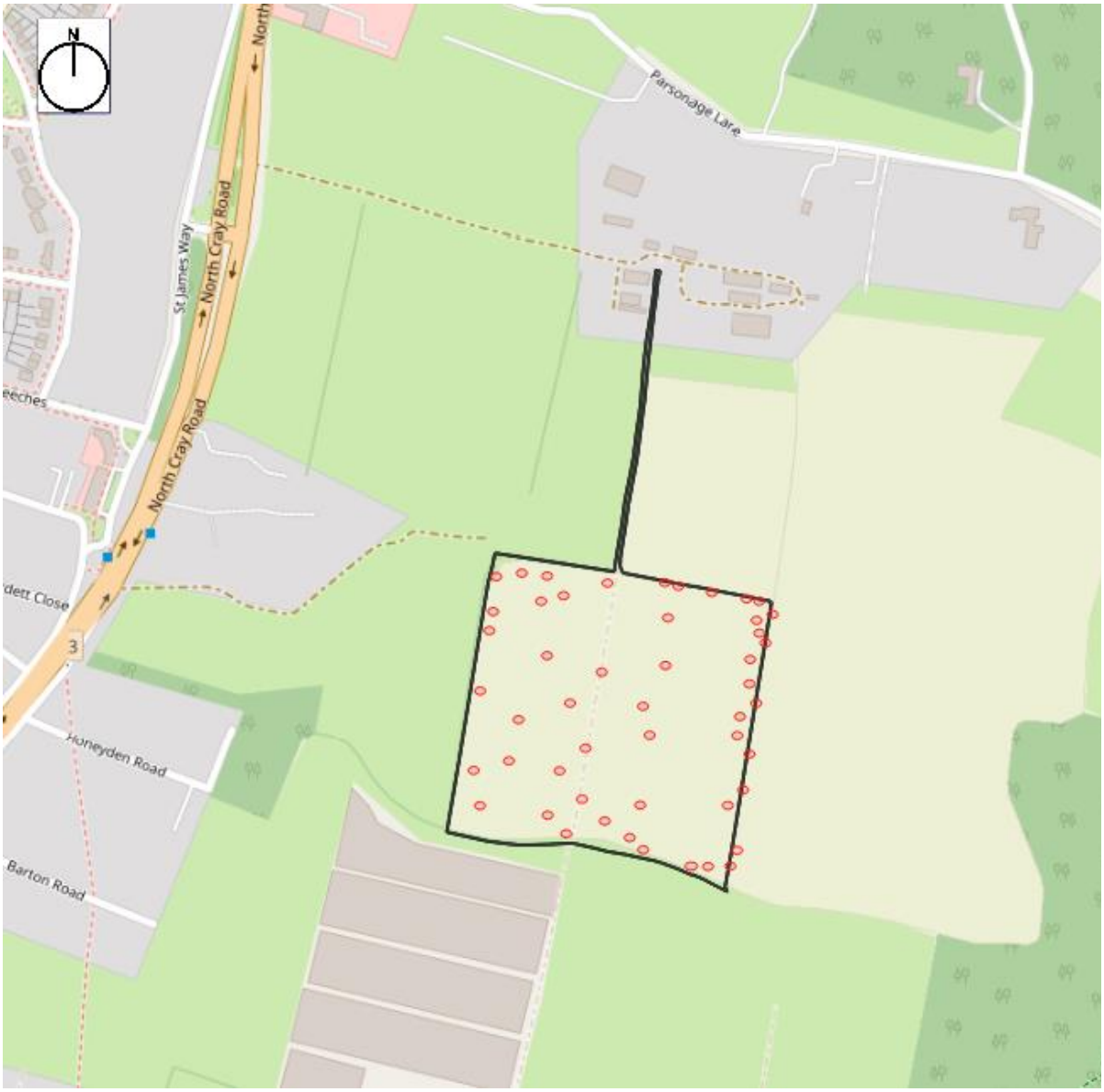
3.3. Reptile presence / absence surveys were undertaken between September and October 2024, based on the guidelines set out in Froglife Advice Note 10. Artificial refugia (squares of bituminous roofing felt) were set out along the edges of fields where there was sufficient field margin habitat to make the presence of reptiles possible (**Figure 3**)**.** The refugia were checked for reptiles on seven occasions in suitable weather conditions.

Table 2, "Reptile Survey Schedule"

Date	Start	End	Temp (°C)	Bft	Okta
20/09/2024	11:15	12:00	18	0	2
26/09/2024	13:15	14:00	17	3	8
30/09/2024	13:00	13:45	15	3	8
03/10/2024	12:00	12:45	16	1	8
07/10/2024	13:00	14:00	17	2	2

Date	Start	End	Temp (°C)	Bft	Okta
09/10/2024	12:00	12:45	16	1	8
15/10/2024	12:00	12:45	16	0	8

Figure 3, "Reptile Mat Locations"



Zone Of Influence

3.4. The Zone of Influence for a project is the area within which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. This is likely to extend beyond the project site where there are ecological or hydrological links beyond the site boundaries.

3.5. Based on the scale and nature of the development, the Zone of Influence arising from these works is unlikely to be greater than 2km from the centre of the site. Therefore, these distances have been used to collect the ecological data search information.

3.6. The habitat survey area comprised primarily the site. However, adjacent land was viewed where possible.

Important Ecological Features

3.7. This report provides an assessment of whether the site supports, or is likely to support, 'important ecological features' as defined in the CIEEM guidance.

3.8. The main criteria on which important ecological features are identified include diversity, naturalness, and extent.

3.9. The following geographical frame of reference is also used:

- International and European
- National (England)
- Regional (Greater London)
- Local (Bexley)
- Site

Limitations

3.10. Engain cannot verify the accuracy of third-party information.

3.11. The field survey is not definitive and represents a snapshot of the ecological status of a site. Furthermore, data records help to provide a historical context, however the absence of evidence of a species does not prove that it does not use the site.

4. BASELINE RESULTS

Designated Sites

4.1. There is one statutory designated site within 2km of the proposed ESS site: Ruxley Gravel Pits Site of Special Scientific Interest (SSSI) is 1.2km south-west of the site. Ruxley Gravel Pits is one of the few areas of relatively undisturbed open water in Greater London south of the Thames. It contains a high diversity of habitats and species; the variety of insects and breeding wetland birds are also notable features. The SSSI is separated from the site by roads and the settlement of Ruxley.

4.2. There is one Local Nature Reserve (LNR) within the 2km search area: Foots Cray Meadows LNR is 630m north-west of the site. The Meadows contain woodland, grassland and ponds and support a wide variety of plants and animals. The LNR is separated from the proposed development by North Cray Road and the settlement of North Cray.

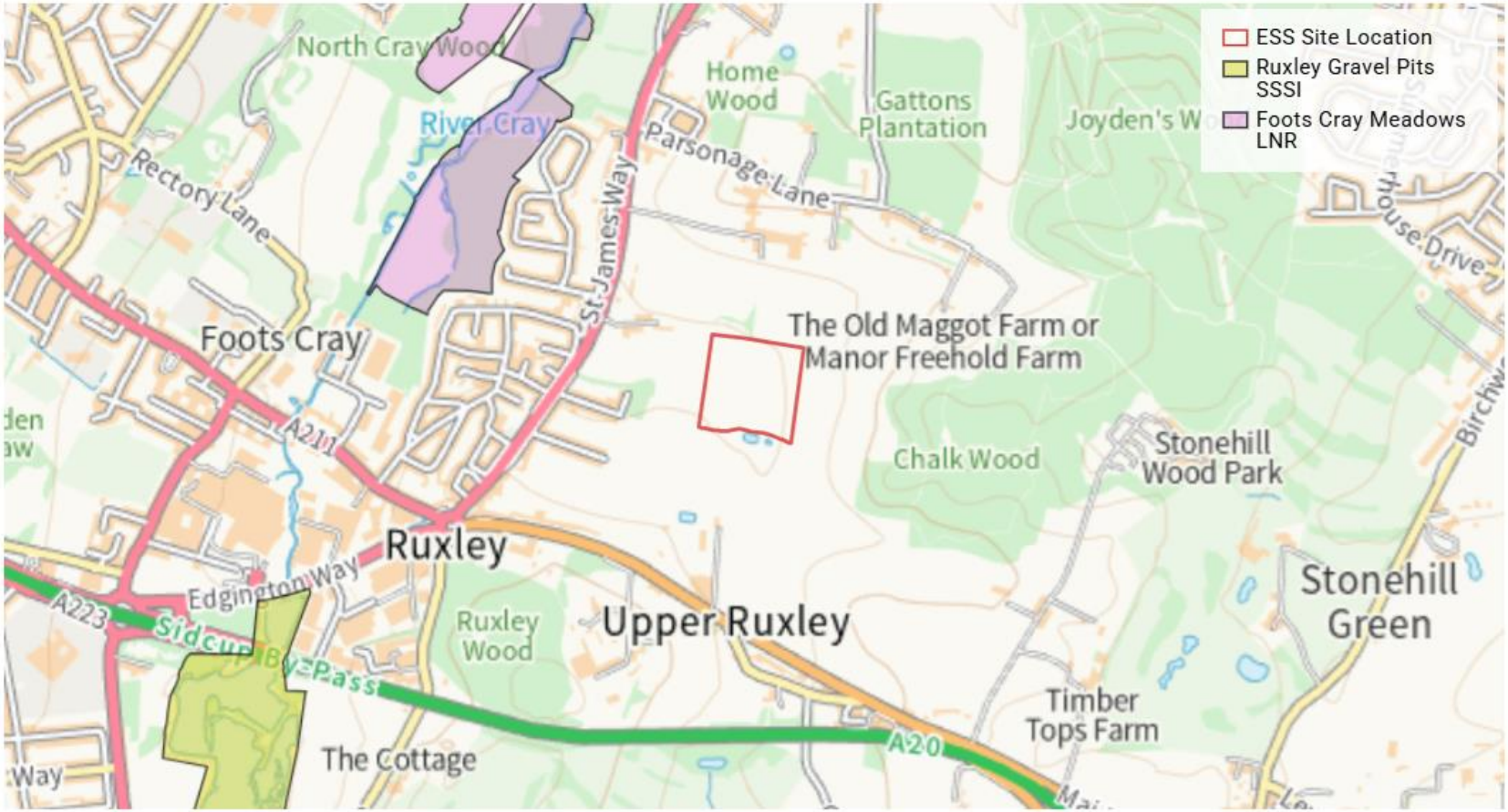
4.3. Greenspace information for greater London returned 14 SINCS (Sites of Importance for Nature Conservation) – **Table 3**.

Table 3, "SINCS within 2km"

Site name	Grade	Area(ha)
Ruxley Gravel Pits	Metropolitan	19.02
River Cray	Metropolitan	185.51
Chalk Wood and Joyden's Wood	Metropolitan	79.71
Home Wood and Bunkers Hill Ponds	Borough I	23
Sands Spinney	Borough I	9.91
Hockenden Sand Pit	Borough I	1.87
Ruxley Park Golf Course Orchard	Borough I	3.6
Mount Mascal Farm and the Grove	Borough II	6.79
Upper College Farm	Borough II	29.63
Rectory Lane Pond	Borough II	0.88
Sidcup Rail Sides	Borough II	14.07
Queen Mary's Hospital Grounds	Borough II	23.37
Ruxley Wood	Borough II	13.64

Site name	Grade	Area(ha)
Lower Hockenden Farm Chalk Mound	Borough II	4.39

Figure 4, "Statutory Designated Sites within 2km"



Habitats

4.4. The site is an agricultural field sown with grass cover of negligible botanical value.

4.5. The boundary hedgerows are well established and contain a variety of species, however, the hedgerows do not meet the requirements to be classified as 'important' within the wildlife criteria of *The Hedgerow Regulations 1997*. They are tall hedges around 3m high with wide spread of between 2m and 3m. The most frequent woody species are hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*).

4.6. There are mature trees including ash, sycamore and walnut (*Juglans regia*) at intervals amongst the hedges, and a row of hybrid black poplars (*Populus serotina*) along the southern edge of the site. There is little in the way of field-margin vegetation as the field is managed up to the hedge bases.

Figure 5, "Baseline Habitat Plan"

Bats

4.7. There are 19 records of bats within 2km of the site, and at least nine species are known to occur in Bexley.

4.8. The arable field provides little foraging habitat for bats however, the surrounding hedges and wider landscape that includes Chalk Wood and Foots Cray Meadows provide good habitats for bats.

4.9. None of the trees on the edges of the site have any features suitable for roosting bats.

Birds

4.10. During the site walkover survey in July 2024 song thrush (*Turdus philomelos*), dunnock (*Prunella modularis*), linnets (*Carduelis cannabina*) and bullfinch (*Pyrrhula pyrrhula*) were recorded in the boundary hedges and skylark (*Alauda arvensis*) were heard singing.

4.11. Around 20 different species were recorded on each of the surveys in winter, with a total of 21 species recorded overall (**Table 4**). Two red list species and six amber list species were recorded during the surveys. Most activity was of birds using the boundary hedges – the only birds seen over the site were flying over.

4.12. Skylarks were recorded at the site on the final two surveys in February and March. Some of the birds displayed possible pre-nesting behaviours. Anecdotal evidence provided to the surveyor suggests that skylarks have attempted to nest but are predated by badgers.

Table 4, "Wintering Bird Survey Results"

Species	Visit 1 (Nov)	Visit 2 (Dec)	Visit 3 (Jan)	Visit 4 (Feb)	Visit 5 (Mar)	Individuals per species
B. (Blackbird)	2	1	1	1	1	**6**
BH (Blackheaded gull)	-	-	1	-	-	**1**
BT (Blue tit)	4	-	3	2	1	**10**
C. (Carrion Crow)	-	-	2	2	2	**6**
CC (Chiffchaff)	2	-	-	-	-	**2**
CH (Chaffinch)	1	-	1	-	-	**2**
D (Dunnock)	-	1	-	1	1	**3**

Species	Visit 1 (Nov)	Visit 2 (Dec)	Visit 3 (Jan)	Visit 4 (Feb)	Visit 5 (Mar)	Individuals per species
G. (Green Woodpecker)	-	-	-	-	1	**1**
GS (Great spotted woodpecker)	-	2	1	-	1	**4**
GT (Great tit)	1	-	1	1	1	**4**
HG (herring gull)	-	-	-	-	1	**1**
HS (house sparrow)	-	4	-	-	-	**4**
K (Kestrel)	2	-	-	-	-	**2**
MG (Magpie)	-	-	2	1	1	**4**
MP (Meadow pipit)	-	2	-	5	-	**7**
PH (Pheasant)	1	-	-	-	1	**2**
PW (Pied wagtail)	1	-	-	-	-	**1**
R. (Robin)	1	1	2	2	1	**7**
RI (Ring-necked parakeet)	5	7	3	-	-	**15**
S (Skylark)	-	-	-	2	13	**15**
TC (Treecreeper)	-	1	-	-	-	**1**
W. (Wheatear)	-	-	1	-	-	**1**
WP (Woodpigeon)	-	2	3	-	4	**9**
Total birds per survey	**20**	**21**	**21**	**17**	**29**	130

4.13. There are 153 records of birds within 2km of the site, including wading birds, raptors, common and farmland species. This includes 60 records of birds listed on *Schedule 1* of *The Wildlife and Countryside Act 1981* (as amended). Including the following species:

- Kingfisher
- Long-tailed Duck
- Indet. Diver
- Red-throated Diver
- Red-backed Shrike
- Crossbill
- Red Kite
- Whimbrel
- Snow Bunting
- Black-necked Grebe
- Wood Sandpiper
- Redwing
- Fieldfare
- Hoopoe
- Goshawk
- Dartford Warbler
- Peregrine
- Hobby
- Woodlark
- Barn Owl

Badgers

4.14. There was only one badger record within 2km of the site. There is a single-entrance outlier sett within the hedgerow along the northwestern edge of the site. There were signs of activity around the sett through the winter bird surveys. A latrine was recorded during the final bird surveys along the western boundary hedgerow at the site.

Dormice

4.15. The desk study returned no dormouse record within 2km of the site, and there are no known records of this species from Bexley[1]. The site's hedgerows are reasonably good quality habitat for dormice, but they are somewhat gappy and connectivity with the surrounding landscape is limited.

4.16. Chalk Wood to the east is sufficiently large to support a dormouse population (its suitability for dormice was not assessed in the field) but it is isolated by urban development. The hedge along the southern edge of the site connects to the wood but there are gaps. Given the absence of records, the limitations to habitat connectivity, and the generally low densities at which dormice use hedges, the likelihood is that they are absent from this site.

Reptiles

4.17. Slow-worms (*Anguis fragilis*), common lizards (*Zootoca vivipara*) and grass snakes (*Natrix helvetica*) all occur in suitable habitats in Bexley, including along the River Cray to the west of the site. However, the site is intensively managed farmed that is not good habitat for reptiles, and none were recorded during the surveys in autumn 2024.

4.18. It is possible that very small numbers of slow-worms could be found in hedges around the edges of the site or along the access route, but none are likely to use the main area of the site.

Amphibians

4.19. Four records of amphibians were returned from the data search however, all the records (including one of great crested newts) were all over 500m from the site. Great crested newts (*Triturus cristatus*) and smooth newts (*Lissotriton vulgaris*) are both present at Foots Cray Meadows.

4.20. There are no ponds on the site. Three new ponds have been constructed immediately to the south of the site (**Figure 6**) as settlement or drainage ponds associated with the adjacent wholesale facility. As these ponds are recently created and there appear to be no other ponds within 500m it is unlikely they are used by breeding great crested newts.

4.21. The open field within the site boundary is not suitable as terrestrial habitat for amphibians, but the hedges could be used for sheltering and foraging.

[1] Rose, C. (2016). *Provisional Checklist and Account of the Mammals of the London Borough of Bexley*. Published Online.

Figure 6, "Pond Plan"

Other Mammals

4.22. Hedgehog and harvest mouse have been recorded within 2km of the site. The open field in which the ESS will be built is of little value for mammals, except perhaps for field voles (*Microtus agrestis*). The boundary hedges and narrow field margins could be used by species such as wood mouse (*Apodemus sylvaticus*), grey squirrel (*Sciurus carolinensis*) and hedgehogs (*Erinaceus europaeus*).

Invertebrates

4.23. The open field is unlikely to support a wide variety or abundance of invertebrates. The field may support species such as craneflies (in the group *Tipula*), earthworms, nematodes etc, but as the land is intensively managed it is not likely to support species of conservation significance.

4.24. The tall and bushy hedges provide good habitat for invertebrates such as moths and butterflies, flies and beetles.

Invasive Species

4.25. No invasive species were recorded during the habitat surveys. 692 records of invasive species were returned during the data search of which 520 were records of ring-necked parakeets. None of the records were from the site itself with the majority of closest records being found in foots Cray meadow.

5. IMPACT ASSESSMENT

5.1. The proposals will not require the removal of any habitats of ecological value, and the potential for indirect impacts is very limited, as the site will not require any permanent lighting during operation (aside from motion-activated security lighting) and will not give rise to potentially harmful emissions.

5.2. By its nature, in supporting the production of renewable energy, the project will contribute to the UK's net zero goals and its cumulative effect (in combination with renewable energy development more widely) is a net benefit for wildlife that is vulnerable to the effects of climate change.

5.3. **Table 5** sets out an assessment of the potential ecological impacts of the project on the ecological features that are present on, or which use the site. The assessment is undertaken in the absence of any measures to avoid, mitigate or compensate for such impacts and ignores the landscape and habitat creation proposals that have been designed in collaboration with the project team. This is followed by **Section 6**, which sets out the agreed avoidance, mitigation and compensation measures, in accordance with the mitigation hierarchy. **Section 7** assesses the residual impacts after these measures have been considered.

Table 5, "Ecological Impact Assessment"

Ecological Feature	Value of the Site for the Feature	Potential Impact(s)	Nature Of Effect(s)
Habitats	The habitats are common and widespread locally and nationally and are valued at a Site level.	The construction of the ESS would require the removal of habitats of negligible ecological value, and the proposed landscaping will result in a net gain of greater than 80% in habitats and hedgerow units.	Within the context of the landscape and considering the low value of the receptors and the small magnitude of the impacts, the ecological effect on habitats would be positive but would not be ecologically significant beyond the Site level.
Breeding and wintering birds	The intensively managed field is unlikely to be used by large numbers of ground nesting birds and it is not used by significant numbers of birds in winter. It is of value at a Site level. The hedges provide good breeding and foraging habitat for birds and are valued at a Local level in this regard.	During construction or decommissioning there is a risk that nests could be destroyed whilst they are in use, or nesting birds could be disturbed to the point where the nesting attempt fails. Less than half the site will be lost to buildings and hardstanding, Suitable mitigations in the form of grassland habitat is provided at the proposed site for breeding habitats.	Potential for a temporary adverse effect that would be significant at the Site level at most
Badgers	The outlier sett and the foraging habitat within and around the site is valued at a Local level for badgers.	During construction and decommissioning there is a risk that the sett could be damaged, or the badgers could be disturbed whilst in the sett. Badgers would be likely to dig alternative setts or return to the original one once activities have ceased, so the impact would be temporary. Badgers could be excluded from most of the site by the new security fencing.	The potential impacts during construction could lead to temporary abandonment of a non-breeding outlier sett, which would not have a significant ecological effect beyond the Site level. The exclusion of badgers from the area within the security fencing would reduce the amount of foraging habitat available but given the large areas left over on site and adjacent this would not have an ecologically significant effect.
Foraging and commuting bats	The hedges are valued at up to a Local level for	If lighting is required during construction phases, then some bat species could be temporarily deterred from commuting and	Given the very small area of affected habitat and the abundant alternative habitat surrounding the site that

Ecological Feature	Value of the Site for the Feature	Potential Impact(s)	Nature Of Effect(s)
	foraging and commuting bats	others may be attracted to the invertebrates that accumulate around the lights.	is well connected, the effect is unlikely to be significant at anything other than a Site level
Amphibians	The hedges are valued at up to a Local level for amphibians	During construction or decommissioning there is a very small risk that individuals or small numbers of amphibians could be killed or injured	The loss of such small numbers of individuals would be unlikely to have a detectable effect on local populations and the effect would not be ecologically significant beyond the Site level
Other Mammals	The hedges are valued at up to a Local level for mammals such as mice, voles and hedgehogs	During construction or decommissioning there is a very small risk that individuals or small numbers of mammals could be killed or injured	The loss of such small numbers of individuals would be unlikely to have a detectable effect on local populations and the effect would not be ecologically significant beyond the Site level
Invertebrates	The grassland and hedges are valued at a Site level	The construction of the ESS will remove an area of habitat used by common and widespread invertebrates	The effect would not be ecologically significant

6. AVOIDANCE, MITIGATION AND COMPENSATION

Avoidance

6.1. The project has been designed to sit within the open field, avoiding the boundary hedgerows, and the access has been designed to make use of an existing track and field entrance. This design approach avoids impacts on habitats of ecological value (the hedges).

6.2. The ESS has been sited so that it is more than 50m away from the outlier badger sett, which can therefore be retained *in situ* throughout construction, operation and decommissioning of the facility. As the construction footprint is sufficiently distant from the sett, the project avoids any risk that badgers will be disturbed, or their sett damaged during construction and decommissioning.

6.3. The potential for wildlife to be harmed during constriction and decommissioning will be avoided through the implementation of a Construction Ecological Management Plan (CEcMP), which can be secured via a suitably worded planning condition. The CEcMP will set out:

- a risk assessment of potentially damaging activities;
- the role and responsibilities on site of an ecological clerk of works (ECoW);
- the times and frequency of visits during construction when a professional ecologist needs to be present on site to oversee works;
- responsible persons and lines of communication; and
- practical measures (both physical measures and sensitive working practices) to avoid or reduce impacts during construction.

6.4. The CEcMP will set out pollution prevention measures including:

- Minimising vegetation removal to prevent soil erosion;
- Avoiding the stockpiling of materials where they could be washed into the adjacent ponds;
- Avoiding fuelling or storage of chemicals near the ponds; and keeping all such materials on impermeable ground in an area where any spills cannot be washed into the ponds;
- Keeping adequate spill kits on site to deal with accidental spillages;
- Siting concrete or cement mixing and washing areas at least 10m away from ponds, in an area where runoff would not reach the ponds; and

- Using contained or bunded areas for washing out kit.

6.5. An Ecological Clerk of Works (ECoW) will provide construction staff with a toolbox talk to explain the need for biodiversity protection measures and what they involve. The toolbox will cover:

- Describing the wildlife that the site supports and the protections it is afforded;
- Explaining the location of ecological features at risk of harm;
- Any restrictions on timing of works;
- The location and purpose of Biodiversity Protection Zones;
- When to ask for further guidance or assistance from the ECoW;
- The measures for the protection of biodiversity that will be implemented; and
- Roles, responsibilities and lines of communication.

6.6. The ECoW will need to be on site prior to any work on site that has the potential to disturb wildlife:

1. For a toolbox talk prior to the start of any trial trenching or ground investigation, and prior to the start of construction;
2. A badger survey approximately 24 hours before commencement of construction;
3. Inspection of erected biodiversity protection zone fencing to ensure all measures are in place before construction starts; and
4. Before any invasive works within or adjacent to biodiversity protection zones to agree a plan of action with the site team.

6.7. The ECoW will also make regular inspections of the site during the course of the construction works, on the following schedule:

- Once per week for the first 4 weeks of construction; and
- Once per month thereafter.

6.8. During each of the regular inspection checks the ECoW will take photographs of the site, including the protected areas, and complete an inspection log. This will include details of the date of the visit, the ECoW that made the visit, any issues raised and commitments to address them. The log will be kept up to date for each visit and actions pursued until they are closed out. The log will be shared with the Council each month by email.

6.9. Where issues arise, they will first be raised with the site manager. If necessary, they will be raised with the LPA case officer or enforcement team by the ECoW.

6.10. The following measures will be employed during construction and decommissioning to reduce the potential effects of noise and vibration on badgers and other wildlife:

- The selection of tools and machinery will take account of noise levels.
- Vehicles and mechanical plant will be maintained in a good and effective working order and operated in a manner to minimise noise emissions.
- The contractor will ensure that all plant complies with the relevant statutory requirements.
- Deliveries of plant and materials by HGV to site will only take place by designated routes and within times set out in the planning consent.
- Compressor, generator and engine compartment doors will be kept closed and plant turned off when not in use.
- Any pneumatic tools will be fitted with silencers/mufflers.
- Care will be taken when unloading vehicles to avoid un-necessary noise.
- Drop heights will be minimised when loading vehicles with materials.
- Noisy plant and machinery will be located away from retained setts.
- Generators or other such equipment may be installed with dampeners to reduce contact with the ground and transmission of vibration.

6.11. Any vegetation clearance that includes removal of any potential bird nesting habitat, such as trees, shrubs, or brambles, will occur outside of the bird nesting period (March to August inclusive). If this is not possible, the area will be checked by a suitably qualified ecologist first. This will comprise an early morning survey of the relevant area, during which the ecologist will observe the area and watch for any signs of nesting activity. They will also carefully search the area for any nests. Only if the ecologist is confident that there are no active nests will vegetation carefully be removed. The ecologist will remain on site whilst this is completed and call a stop to works if any active nests are discovered.

6.12. If there are any active nests, they will be left in place undisturbed until the young have fledged. This will be judged by repeat visits by an ecologist.

6.13. Temporary fencing (Heras fencing or similar) will be erected before any materials or machinery are brought onto the site before any works commence. Once erected, barriers will not be removed or altered without prior agreement with the ECoW, and construction within these areas will be undertaken only with the guidance of the ECoW. Fencing around the construction zone will deter badgers from entering, and any excavations or trenches left open overnight will be covered or have an escape route such as a shallow gradient at one or both ends. Open pipework with a diameter of more than 120mm should be properly covered or capped at the end of the working day to prevent badgers entering and becoming trapped.

6.14. Warning signs will be fixed in appropriate locations along the temporary fencing to explain to construction site personnel the purpose of the of the protecting the Biodiversity Protection Zones for the entire duration of the development. Lost or damaged signs will be replaced at the earliest opportunity.

Mitigation and Compensation

6.15. The retained hedges will be enhanced and managed for the benefit of wildlife in the long-term. The hedge along the southern boundary, which is currently quite gappy, will be enhanced with additional tree planting to close the gap and the planting of a 3m wide strip of native shrub planting. In accordance with Policy SP9(h) and DP20, this will use native species, which will be sourced from stock of local provenance where these are commercially available.

6.16. A new hedge will be created along the site's eastern boundary (which is currently demarcated by a fence). The hedge will comprise field maple (*Acer campestre*), hazel (*Corylus avellana*), hawthorn, holly (*Ilex aquifolium*), guelder rose (*Viburnum opulus*) and silver birch (*Betula pendula*).

6.17. The hedges will be allowed to grow tall and bushy and will not be flailed every year, so that flowers and fruit can grow on second or third-year growth.

6.18. The area around the badger sett will be planted with fruit trees (including crab apple and wild cherry) to provide an enhanced foraging resource. The ground under and around the trees will be left to naturally regenerate so that there is a mixture of scrub and more open areas, increasing the cover for foraging badgers around their sett. This will enable hedgerow species to extend into the field, ensuring that the vegetation comprises locally adapted native species.

6.19. Open grassland within and outside of the ESS compound will be seeded with a species-rich meadow mix such as Emorsgate EM4 or similar approved mix. The grassland will be managed to create a variety of sward heights and a species mix indicative of the species-rich variants of the NVC communities MG1 *Arrhenatherum* grassland or MG6 *Lolium perenne – Cynosurus cristatus* grassland. There will be some areas of bare ground (which if not created by foraging mammals, will be created by periodic harrowing / scarifying) to create areas for seed-set. This bare ground will provide skylarks with nesting territories to continue to support the breeding attempts at the site. The amount of bramble and other species such as docks and nettles will be managed to ensure that they add to habitat diversity but do not over-dominate the site. The improved habitat quality and alternative food sources for badgers may enable skylarks to breed more successfully at the site.

6.20. A new linear feature comprising a mix of native trees and shrubs will be created along the northern edge of the ESS facility. This feature will be 10m wide and have trees including oak (*Quercus robur*), silver birch, field maple and crack willow (*Salix fragilis*), underplanted with native shrubs. The feature will be managed to have an edge that grades gradually into the adjacent tussocky grassland. The edge will not be cut every year but will be left to grow scrubby for 2-3 years before being cut back to create a dynamic ‘edge habitat’.

7. CONCLUSIONS

Project Effects

7.1. The construction and decommissioning of the ESS facility would not have any significant adverse ecological impacts or effects.

7.2. The proposed habitat creation and management will enhance the site for wildlife, including:

- A net increase in the quality and diversity of habitats within the site, delivering a net gain of over 80% in habitats and 20% in hedgerows, as measured using the statutory biodiversity net gain metric (see **Appendix 1** and the separate BNG metric and report);
- An Urban Greening Factor of >4 (see **Appendix 2**);
- An increase in the amount of good quality foraging and nesting habitat for birds in the new hedgerow and tree belt;
- Grassland with bare ground to continue to support skylarks nesting at the site
- Improved linear habitat connectivity for bats and an increase in the amount and quality of foraging habitat;
- An improved area of habitat around the badger sett;
- Enhanced terrestrial habitat for foraging and sheltering amphibians;
- Additional habitat for hedgehogs and other small mammals; and
- An increase in the diversity and abundance of invertebrates, which is an ecological benefit in and of itself as well as benefitting birds and bats.

7.3. Approval of the planning application would therefore be in compliance with the NPPF requirement for delivering measurable net gains, and with Bexley Local Plan Policy DP20 for the enhancement of biodiversity. The new tree belt and hedgerow would also materially contribute to the creation and improved functionality of green infrastructure in accordance with Policy G1 of the London Plan.

In-combination Impacts

7.4. There are no known plans or projects that would act in combination with the predicted ecological impacts and effects of this project to create a significant ecological effect.

APPENDIX 1 HEADLINE BNG RESULTS

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	11.86
	Hedgerow units	1.87
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	84.43%
	Hedgerow units	21.52%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

APPENDIX 2 – URBAN GREENING FACTOR

Total site area (m²) (include all land within the red line boundary)			87960	
Urban Greening Factor Calculator				
Surface Cover Type	**Factor**	**Area (m²)**	**Contribution**	**Notes**
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1	31110	31110	
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1	0	0	
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8	0	0	
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree.	0.8	0	0	
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	0	0	
Flower-rich perennial planting.	0.7	0	0	
Rain gardens and other vegetated sustainable drainage elements.	0.7	0	0	
Hedges (line of mature shrubs one or two shrubs wide).	0.6	0	0	
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6	0	0	
Green wall –modular system or climbers rooted in soil.	0.6	0	0	
Groundcover planting.	0.5	0	0	
Amenity grassland (species-poor, regularly mown lawn).	0.4	15430	6172	Areas within the ESS fence have been assigned as this lower value habitat, although in practice it is intended that they will be managed for wildlife
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014.	0.3	0	0	
Water features (chlorinated) or unplanted detention basins.	0.2	0	0	
Permeable paving.	0.1	0	0	
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0	41420	0	
Total contribution			**37282**	
Urban Greening Factor			**0.423851751**	

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