

EML Facility Expansion, Hatfield

Preliminary Ecological Appraisal

Eisai Manufacturing Ltd (EML)

Project number: 60681916

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Quality information

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1. Executive Summary

Site Details	The proposed facility expansion project, the Site, is located at the Eisai site, Hatfield, Hertfordshire. The Eisai site undertakes pharmaceutical production and consists mainly of buildings and hard standing with associated landscaping and amenity grassland. Given the nature of the manufacturing, the Eisai site has secure fencing and significant efforts are made to ensure that contaminants including insects are kept out of the building.
Proposed Works Details	The proposed facility expansion consists of the construction of a warehouse facility built onto the main manufacturing block.
Ecological Features that may be affected by the Proposed Works	<p>There are no sites designated for their biodiversity value within 2 km of the Site.</p> <p>The security fencing around the Eisai site extends into the ground and its mesh size is such that it excludes most mammals from it. Coupled with the regular mowing of the amenity grassland and the absence of any waterbodies on or within the vicinity of the Eisai site, there is no scope for amphibians or reptiles being present on the Site.</p> <p>The landscaped areas with shrubs and trees are suitable for birds to feed and roost in, but with limited nesting potential. It is recommended that any trees or shrubs that need to be removed, should be removed outside of the bird nesting season (i.e. during period September to February inclusive) to prevent breeding birds from being disturbed. If any site clearance of trees or scrub is due to take place between March and beginning of September, an ecologist would be required to confirm the absence of active bird nests.</p> <p>The trees are all relatively young (see Arboricultural report) with no scope for bats to roost in them. Likewise, the construction of the buildings and high standard of maintenance mitigates against bats using them to roost in. The scope is equally limited in the neighbouring business park units.</p> <p>There is a narrow pathway around the immediate inside of the security fencing which is walked by the security staff and kept free of weeds. This regime of trampling and weed control has enabled a community of mosses and lichens to establish all the way along the path.</p> <p>Overall, the Eisai site including the Site has a low biodiversity value.</p> <p>Although no invasive non-native species were found on the Site, such plants and animals might be brought onto or move into the Eisai site. For plants, standard biosecurity measures should be adopted to ensure that no seeds, rhizomes or other plant propagules are brought onto the site. In the case of animals, a watching brief should be kept of the site. Were any such species to colonise the site, they should be dealt with immediately.</p>
Recommendations for further survey and assessment	No further surveys or assessment are needed.
Recommendations for enhancement	<p>Enhancements of the biodiversity could include:</p> <ul style="list-style-type: none"> - creation of moss patches/gardens - planting a herb garden - providing habitat for Pied Wagtail to feed and nest and - green or brown roofs.

2. Introduction

2.1 Introduction

AECOM was commissioned by Eisai Manufacturing Ltd to carry out a Preliminary Ecological Appraisal (PEA) of the site of a proposed facility expansion at the Eisai Hatfield site. The former will subsequently be referred to as the Site, the red line boundary of which is shown in Figure 1 in Appendix A. It is proposed to construct an expansion of the facility on the Eisai site in the form of a warehouse building, the red line boundary for which is shown in Figure 1.

2.2 Site Location and Setting

The Site is located in Eisai Manufacturing Ltd's Hatfield site in the Hatfield Business Park Campus on Mosquito Way, Hatfield, Hertfordshire, AL10 9SN. The national grid reference for the centre of the Site is TL 2155 0889. The Eisai site consists mainly of buildings and hard standing with associated soft landscaping. The Site includes amenity grassland, soft landscaping and areas of hard standing and gravel.

2.3 Purpose of Preliminary Ecological Appraisal

The PEA was commissioned to assess and identify the potential for the proposed facility expansion to result in likely significant effects on features of value for biodiversity. The assessment includes consideration of designated sites, habitat, identifies whether there are known or potential ecological receptors (defined as nature conservation designations and protected or notable species or habitats and, or any invasive non-native species) that may contain or influence the design and implications of the proposed facility expansion. The approach applied when undertaking the PEA accords with the Guidelines for Preliminary Ecological Appraisal¹ published by the Chartered Institute of Ecology and Environmental Management.

In order to deliver the PEA, a desk study and an extended Phase 1 Habitat Survey were undertaken by a suitably qualified ecologist.

The purpose of the PEA was to:

- identify and categorise all habitats present within the Site and any areas immediately outside the Site where there may be potential for direct or indirect effects (the zone of influence) as part of the proposed facility expansion;
- carry out an appraisal of the protected species and the habitats and designated sites on the Site and in the surrounding area;
- provide advice or any potential ecological constraints and opportunities within the Site and its zone of influence, including the identification (where relevant) of any requirements for follow-up habitat and species survey and/or requirements for ecological mitigation, and provide a map showing the location of ecological receptors or relevance; and
- make recommendations such as that the proposed facility expansion will enhance the Site for biodiversity.

The purpose of this report is to provide a baseline with respect to ecology and biodiversity and a high-level appraisal of the ecological risks and opportunities associated with the proposed facility expansion. The report identifies the scope of further work (when necessary) that would be required to inform a planning application. High level recommendations are made to inform options for the avoidance, mitigation or compensation of the potential impacts of the proposed facility expansion (where known) on the identified ecological receptors, and of potential enhancements to biodiversity.

2.4 Quality Assurance

All AECOM ecologists follow the Chartered Institute of Ecology and Environmental Management (CIEEM) code of professional conduct when undertaking ecological work and many of them are Full Members. They are appropriately qualified and conduct their work with all reasonable skill and care.

¹ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

3. Ecological Baseline, Constraints and Recommendations

3.1 Sites designated for their biodiversity value

There are two statutory sites designated for their biodiversity value within 2 km of the Site, both Local Nature Reserves (LNRs). Table 1 lists the designated sites in ascending distance from the Site.

Table 1. Designated Sites in ascending order away from the Site

Designated Site (area)	Description	Distance from the Site
Howe Dell LNR (3.98 ha)	Valley clothed in woodland comprising mature hornbeam, oak and beech with a meandering stream at its bottom.	1.4 km to the southeast of the Site.
Oxleys Wood LNR (1.23 ha)	Tree species such as oak, ash, elm, willow and poplar provide good habitat for insects, which in turn support a number of common bird species. There is a pond in the northern, wetter part of the wood.	1.8 km to the southeast of the Site.

There is one Local Wildlife Site (LWS) within 1 km of the Site, Chantry Lane Wood and Dene Hole, 730 m south of the Site.

3.1.1 Constraints and Recommendations

Sites designated for their biodiversity value do not pose any constraints on the proposed facility expansion. All three designated sites are over 700 m away from the Site and have a significant buffer between them and the facility expansion. As such there are likely to be no impacts.

3.2 Notable Habitats

3.2.1 Desk Study

3.2.1.1 Notable Habitat

There are no habitats within 1 km of the Site which are listed as habitats of priority importance (HoPI) on the Natural Environment and Rural Communities Act (2004) as amended. There are no Ancient Woodlands within 1 km of the Site.

3.2.2 Field Survey

The habitats recorded in the Phase 1 Habitat survey, their extent and distribution are shown in Figure 1 in Appendix A. The habitats are arranged in ascending order of area (in hectares). The total area of each habitat type is shown in Table 2.

Table 2. List of Habitats in ascending area.

Habitat	Brief Description	Area (hectares)	% area of the Site
Amenity grassland	Regularly mown grassed areas with a moderate diversity of plant species	0.67	45
Hard standing	Roads, pavement and car parking areas	0.57	38
Shrubs and trees	Landscaping around the edge of the Eisai site.	0.16	12
Strip of mosses and lichen	1-1.5 m in width extending immediately within the security fencing	0.05	3
Mound of soil/sub-soil with ruderal plants	A moderate diversity of plants	0.03	2

3.2.2.1 Amenity grassland

Areas of mown grass all of which had a very similar flora of a moderate number of species.

3.2.2.2 Hard Standing

The hard standing was made up of roads, pavement and car parking spaces.

3.2.2.3 Shrubs and trees

Landscaped areas around the edge of the Eisai site comprise low growing shrubs, mainly hazel (*Corylus avellana*), dogwood (a species of *Cornus*) and guelder rose (*Viburnum opulus*) and young trees, mainly field maple (*Acer campestre*) with some holly (*Ilex aquifolium*) and goat willow (a species of *Salix*). This habitat will mature with time developing a more significant biodiversity value. See also Arboricultural report.

3.2.2.4 Strip of mosses and lichen

There is a narrow pathway around the immediate inside of the security fencing which is walked by the security staff and kept free of weeds. This regime of trampling and weed control has enabled a community of mosses and lichens to establish all the way along the path.

3.2.3 Constraints and Recommendations

There are no habitats on the Site or in its vicinity that pose any constraints to the proposed facility expansion. All habitats are regularly maintained and are of low ecological value.

The proposed facility expansion will necessitate the removal of forty trees. These are all young trees with low biodiversity value. They will be replaced on a like-for-like basis within the Site boundary (see Landscape proposal).

No further surveys for habitats are needed.

3.3 Protected and Notable Species

3.3.1 Notable Invertebrates

3.3.1.1 Desk Study

Records of a few moths and butterflies listed as species of priority importance (SoPI) on the Natural Environment and Rural Communities Act (2004) as amended were returned from the desk study and or species identified as Herts Species of Conservation Concern. No records of any other notable terrestrial invertebrates were found from within 1 km of the Site over the last ten years.

3.3.1.2 Field Survey

The habitats on the Site do not provide habitat for any notable insects or other invertebrate species.

3.3.1.3 Constraints and Recommendations


There are no invertebrates on the Site or in its vicinity that pose any constraints to the proposed facility expansion.

No further surveys are needed.

3.3.2 Amphibians

3.3.2.1 Desk Study

Three records of great crested newt class survey license returns were found from within 1 km of the Site over the last ten years, the three records (2016) are from Ellenbrook Fields, 900 m to the west of the Site.

There is one pond 220 m to the west of the Site. However, there is no suitable habitat for great crested newt connecting the pond with the Site, with  Mosquito Way and a built environment between the pond and the Site.

One record of a common toad (*Bufo bufo*), a SoPI was returned further than 500 m from the Site.

3.3.2.2 Field Survey

The habitats on the Site, while suitable to support terrestrial great crested newts, are either isolated from additional suitable habitat or are not connected to any water sources. Furthermore, the management of habitats reduces the suitability for amphibians. The closest pond is 220m from the Site. Due to the isolated nature from breeding ponds and small areas of suitable habitat on site, great crested newt and common toad are scoped out of the assessment.

3.3.2.3 Constraints and Recommendations

Amphibians are scoped out of the assessment and as such do not represent a constraint to the development.

3.3.3 Reptiles

3.3.3.1 Desk Study

No records of reptiles were found from within 1 km of the Site over the last ten years.

3.3.3.2 Field Survey

The habitats on the Site in combination with their management do not provide suitable habitat for reptiles.

3.3.3.3 Constraints and Recommendations

There are no reptiles on the Site or in its vicinity that pose any constraints to the proposed facility expansion.

3.3.4 Breeding Birds

3.3.4.1 Desk Study

Several records of birds were returned from the desk study within 1 km from the Site, some of them of local importance species such as house sparrow (*Passer domesticus*) and song thrush (*Turdus philomelos*) and some of them Schedule 1 species such as black redstart (*Phoenicurus ochruros*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*), peregrine falcon (*Falco peregrinus*), red kite (*Milvus milvus*), barn owl (*Tyto alba*) and hobby (*Falco subbuteo*).

3.3.4.2 Field Survey

The landscaped areas with shrubs and trees are suitable for birds to feed and roost in with limited nesting potential. There is no suitable habitat for any Schedule 1 species. The neighbouring building has no nesting potential, including for species such as black redstart, although the roof is used for roosting by black-headed gull (*Chroicocephalus ridibundus*).

3.3.4.3 Constraints and Recommendations

Breeding birds and their nests are protected under the Wildlife and Countryside Act (1981, as amended). It is recommended that any trees or shrubs that need to be removed, should be removed outside of the bird nesting season (i.e. during period September to February inclusive) to prevent breeding birds from being disturbed.

If any site clearance of trees or scrub is due to take place between March and beginning of September, an ecologist will be required to confirm the absence of active bird nests immediately prior to works commencing to avoid a breach of legislation.

If a nest is discovered, clearance or other construction works should be stopped immediately within an exclusion zone to be determined by an ecologist (generally 5 m radius). The exclusion zone will be demarcated appropriately. The nest will subsequently be monitored, typically on a weekly basis, by a suitably qualified ecologist. Once it is confirmed that all fledglings have flown and ceased to return to the nest, and that no other nests are in use within the exclusion zone, the vegetation can be removed.

3.3.5 Bats

3.3.5.1 Field Survey

Several records of bats (seven species returned) or bat roosts were found from within 1 km of the Site over the last ten years.

3.3.5.2 Roosting Habitat

The trees and buildings on and immediately adjacent to the Site were assessed for their suitability to support roosting bats.

None of the trees or buildings have any suitability to support roosting bats.

3.3.5.3 Commuting and Foraging Habitat

The area of trees and shrubs has some value for foraging bats and is linked with other adjacent similar habitat.

3.3.5.4 Constraints and Recommendations

Buildings and trees on the Site or in its immediate vicinity have negligible suitability for roosting bats, therefore bats do not pose any constraints to the proposed facility expansion.

It is recommended that where possible, trees and shrubs lost to the facility expansion are replaced by, minimally, like-for-like trees and shrubs to provide foraging habitat for bats.

3.3.6 Badger

3.3.6.1 Desk Study

No records of any badger setts were found from within 1 km of the Site over the last ten years.

3.3.6.2 Field Survey

No badger activity was found on the Site or on the wider Eisai site. The security fencing around the Eisai site prevents badger having access.

3.3.6.3 Constraints and Recommendations

There are no badger setts on the Site or in its immediate vicinity that pose any constraints to the proposed facility expansion.

3.3.7 Other Mammals

3.3.7.1 Desk Study

No records of dormouse were found from within 1 km of the Site over the last ten years. Several records of hedgehog (*Erinaceus europaeus*), a SoPI, were returned from the desk study.

3.3.7.2 Field Survey

There is limited suitable habitat for mammals such as hedgehog on site. No signs of activity of other mammals were found on the Site or on the wider Eisai site. The security fencing around the Eisai site prevents access to species such as hedgehog, rabbit (*Oryctolagus cuniculus*) and fox (*Vulpes vulpes*). Muntjac deer (*Muntiacus reevesi*) has been seen on the Eisai site, presumably gaining access under the barrier at the site entrance.

3.3.7.3 Constraints and Recommendations

There are no other mammals on the Site or in its immediate vicinity that pose any constraints to the proposed facility expansion.

Given that muntjac deer has been seen on the Eisai site, a watching brief should be maintained, should any mammal such as fox, rabbit or grey squirrel (*Sciurus carolinensis*) gain access and establish themselves. The latter two species could become a pest if they colonise the Site.

3.3.8 Invasive Species

3.3.8.1 Desk Study

Records of species listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) were found for:

- Virginia creeper (*Parthenocissus quinquefolia*) and variegated yellow archangel (*Lamiastrum galeobdolon* subspecies *argentatum*).
- Muntjac deer grey squirrel and ring-necked parakeet (*Psittacula krameri*).

3.3.8.2 Field Survey

No invasive non-native species were seen on site during the site visit.

As noted above (Section 3.3.7.2) muntjac deer has been seen on the Eisai site.

3.3.8.3 Constraints and Recommendations

There are no invasive non-native species on the Site or in its immediate vicinity that pose any constraints to the proposed facility expansion.

It is recommended that standard biosecurity measures are implemented leading up to, e.g. ground investigation, and during construction to ensure that no invasive non-native plants are brought onto the Site, e.g. as seeds or rhizome fragments on the dirty wheels of trucks or other vehicles.

As stated in Section 3.3.7.3, the workforce should be briefed for the potential access of invasive non-native animals into the Site or wider site as some of them can establish themselves in the wider site or become a pest.

Should any invasive non-native plants or animals be found on the Eisai site, action should be taken immediately to deal with them.

4. Opportunities for Enhancement

This section highlights opportunities for providing ecological enhancements, based on the current proposed facility expansion details. These are high level opportunities and would need to be developed in greater detail and integrated into the proposed facility expansion proposals and their implementation articulated in the Landscape and Ecology Management Plan.

The ecological enhancements have been developed in accordance with the National Planning Policy Framework (NPPF) as well as the appropriate regional and local planning policy outlined in Appendix B.

4.1 Moss and lichen patches

Creation of areas about 10 m in diameter within mown grassland and “sown” with a variety of mosses and lichens will significantly enhance species diversity. The strip between the security fencing and the shrub and tree planting has colonised with mosses and lichens (Figure 2a and b) and the moss and lichen patches would expand on this both in species numbers and extent of habitat. This very short growing vegetation would, if designed imaginatively, be attractive and would have low value for flying insects (no flowers or seeds). It would also be low maintenance.



Figure 2. a. Strip of moss dominated habitat immediately inside security fencing, and b. close of mosses and lichens

This initiative would be designed to contribute to the biodiversity score of the BREEAM assessment.

4.2 Herb garden

A selection of herbs with a focus on species with low value to insects, given the concerns of insects causing problems to the production process, but with value to on-site food preparation would be used to create a biodiverse garden, visually attractive (see example in Figure 3) with an intrinsic value to the chef on-site. The garden would have a free habitat form, i.e. as opposed to a formal layout, one species of plant giving way to another. The garden would include features such as log piles and rockeries to provide habitat for non-flying invertebrates such as crustaceans, molluscs and beetles.



Figure 3. Example of herb garden with free form.

This initiative would be designed to contribute to the biodiversity score of the BREEAM assessment.

4.3 Pied Wagtail haven

Pied wagtail is an insectivorous bird, readily seen and attractive to look at (Figure 4). Simple additions to the site would create a haven for this bird to the benefit of the Eisai site and the surrounding units in the business park. Pied wagtail thrives on open habitat with short or very limited vegetation. This would be supported with strategically located nest boxes.



Figure 4. Pied wagtail (*Motacilla alba*) at nest

4.4 Biodiverse Roof Spaces

Biodiverse roofs (green and, or brown roofs) provide benefits such as a reduction in water runoff; reduction of heating and cooling costs; an increased roof lifespan; and aesthetic qualities. Biodiverse roofs also create stepping-stones across potentially hostile environments such as on a business park, and aid in maintaining and increasing the connectivity of a local area's green spaces.

Incorporating such roofing into the proposed facility will mitigate for habitat loss, e.g. grassland, and enhance the Site's biodiversity value.

Green roofs are created with the incorporation of a seed mix (wildflower meadow seed mix or rug that can incorporate grasses as well) planted on construction and should include native species of native provenance or wildlife friendly species, whilst brown roof spaces are areas of low nutrient substrate left to seed with native communities of plants (sometimes seeded with a low density seed mix), although care should be taken to avoid invasive species gaining a foothold in these areas. Brown roofs are attractive due to a number of wildlife species and often develop more naturally since they rely on colonisation by plant species rather than planting. Both roof types can be enhanced by creating a variation in the depth of the substrate to generate microhabitats and by adding features such as rubble piles, log piles, insect boxes or banks of exposed earth to increase their biodiversity value.

5. Conclusion

The Site comprises mainly amenity grassland, hard standing and landscape planting in the form of shrubs and trees. Whilst the latter habitat is relatively young, it will develop with an associated increase in biodiversity value. No notable or protected species were found on the Site. Overall, the Site is of low biodiversity value.

Forty young trees will need to be removed to enable the proposed facility expansion. They will be replaced on a like-for-like basis with plantings being within the Site.

The habitats on the Site are suitable for roosting and nesting for birds. It is recommended that any trees or shrubs that need clearing are removed outside of the bird nesting season (i.e. during period September to February inclusive) to prevent breeding birds from being disturbed. If any site clearance of trees or scrub is due to take place between March and beginning of September, an ecologist would be required to confirm the absence of active bird nests immediately prior to works commencing to avoid a breach of legislation.

Although no invasive non-native species were found on the Site, such plants and animals might be brought onto or move into the Eisai site. For plants, standard biosecurity measures should be adopted to ensure that no seeds, rhizomes or other plant propagules are brought onto the site. In the case of animals, the workforce should be vigilant given the potential for mammals to access the wider site. Were any such species to colonise the site, they should be dealt with immediately.

There are opportunities to enhance the biodiversity of the Site including:

- creating moss patches
- planting a herb garden
- supporting pied wagtail; and
- green and, or brown roofs.

Appendix A Phase 1 Habitat Map

Figure 1: Phase 1 Habitat Map



Appendix B Summary of Legislation

The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on the 31st December 2020 is now part of the UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 23:00 on the 31st of December 2020 has been retained in UK law as a form of domestic legislation known as 'the retained EU Legislation'.

The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the *Conservation of Habitats and Species Regulations 2017* so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in England. All other processes or terms in the Conservation of Habitats and Species Regulations remain unchanged and existing guidance is still relevant.

B.1 Wildlife Legislation

The following wildlife legislation is potentially relevant to the Site;

- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Conservation of Habitats and Species Regulations 2019 (the Habitat Regulations) (as amended); and
- The Invasive Alien Species (Enforcement and Permitting) Order 2019.

The above legislation was considered when planning and undertaking this Preliminary Ecological Appraisal using the methods described in Appendix C. Compliance with legislation may require the attainment of relevant protect species licenses prior to implementation of the proposed facility expansion.

B.2 National Planning Policy

The National Planning Policy Framework (NPPF) was originally published on the 27th March 2012 and detailed the Government's planning policies for England and how these are expected to be applied. The NPPF was then revised on the 24th July 2018 and on the 19th February 2019 and 20th March 2021.

The NPPF stated that the commitment of the UK Government to minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

It specifies the obligations that Local Authorities and the UK Government have regarding statutory designated sites and protected species under UK and international legislation and how this is to be delivered in the planning system. Protected or notable habitats and species can be material consideration in the planning system. Protected and notable habitats and species can be a material consideration in the planning decisions and may therefore make some sites unsuitable for particular types of development. If development is permitted, mitigation measures may be required to avoid or minimise impacts on certain habitats and species, or where impact is unavoidable, compensation may be required.

The NPPF is clear that pursuing sustainable development includes moving from no net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.

B.3 Regional Guidance

Document	Policy	Purpose
Sustainable Hertfordshire Strategy 2020	Improve biodiversity on our land by 20% by 2030	Builds on the county council's existing work including its Energy Strategy, Pollinator Strategy, Air Quality Strategy and Local Transport Plan 4, in addition to recognising and responding to future challenges. The county council will support delivery of the UK's 25 Year Environment Action Plan which sets out high level national commitments on environmental improvements across England and make faster progress where it is right and able to do so. The pace and capacity of the county council in achieving objectives of the Sustainable Hertfordshire Strategy 2020 will reflect available funding. Every effort will be made to seek

Document	Policy	Purpose
		additional funding from government and other sources, as well as developing business cases that consider financial as well as sustainability benefits.
Hertfordshire Pollinator Strategy 2019-2024	Support biodiversity, local food production, natural capital including flower-rich habitats and sustainable pollinator populations	<p>The benefits to be derived from this strategy are:</p> <p>a) Ensure the needs of pollinators are represented across the breadth of services provided by the council in its decisions, policy and guidance;</p> <p>b) Protect, increase and enhance the amount of pollinator habitats across the estate to help prevent extinctions and improve the status of any locally threatened pollinator species;</p> <p>c) Increase awareness of pollinators and their habitat needs across the council's service users;</p> <p>d) Increase the contribution of land under the ownership of, or managed by the council to pollinator conservation; and</p> <p>e) Improve the council's knowledge and understanding of pollinators in our local area.</p>
Hertfordshire Biodiversity Action Plan (2nd Edition, 2006)		This document sets out the highest priorities for action to conserve Hertfordshire's most threatened and declining habitats and species. Habitats include woodland, wetlands, heathland and grassland. Species include UK Priority species listed in Section 41 of the NERC Act.

B.4 Local

The current Welwyn Hatfield planning policies are the saved policies of the Welwyn Hatfield District Plan (adopted 2005). However, there is a draft new Local Plan not yet adopted, the draft Local Plan Proposed Submission (August 2016).

Document	Policy	Purpose
draft Local Plan Proposed Submission (August 2016)	Policy SP 11 Protection and enhancement of critical environmental assets	The protection, enhancement and management of the environmental, ecological and historic assets within the borough, will be sought commensurate with their status, significance and international, national and/or local importance.
	Policy SP 12 Strategic Green Infrastructure	<p>The Council will work with partners to actively support the creation and enhancement of strategic green infrastructure across the borough. Opportunities to link existing green spaces and to improve public access and amenity will be supported in order to provide a comprehensive network of functional and linked spaces for the benefit of wildlife, biodiversity and the community. The Council will aim to ensure there is no overall net loss in green infrastructure across the borough within the plan period.</p> <p>Development that would compromise the integrity, functionality or cause significant fragmentation of the green infrastructure network will not be permitted.</p> <p>Development proposals within the borough should plan positively for, and contribute to, the creation and management of high quality, multifunctional green spaces that are linked to the surrounding green infrastructure network</p>
	Policy SADM 16 Ecology and Landscape	<p>i. Proposals will be expected to maintain, protect and wherever possible enhance biodiversity, the structure and function of ecological networks and the ecological status of water bodies.</p> <p>ii. Proposals that would result in loss of or harm to designated sites, ancient woodlands, Local Wildlife Sites or other habitats, species and ecological assets of local importance will be refused unless the mitigation hierarchy has been followed, to firstly avoid, reduce and remediate direct and indirect adverse impacts before considering compensation; and the need for, and benefits of, the development significantly outweigh the loss or harm.</p> <p>iii. Where compensation is required to make development acceptable within ii) above, necessary financial and/or other provision will be required to deliver and maintain ecological and biodiversity objectives over appropriate time scales to</p>

Appendix C Methods

C.1 Desk Study

A desk study was carried out to identify nature conservation designations of notable habitats and species, including invasive non-native species potentially revealed to Site and the proposed facility expansion.

A stratified approach was taken when defining the desk study based on the zone of influence of the proposed facility expansion on different ecological receptors and an understanding of the maximum distance typically considered by statutory consultees. Accordingly, the desk study identified any sites with international or national nature conservation designations within 5km of the red line boundary, other non-statutory conservation designation, protected habitats within 1km of the red line boundary. The desk study was carried out using the data sources detailed in the table below.

The search included statutory designated sites such as Special Areas of Conservation (SACs), Special Protected Areas (SPAs), Sites of Special Scientific Interest (SSSI), Ramsar sites, National Nature Reserves (NNRs) and Local Nature Reserves (LNRs).

Table 3. Desk Study Data Sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGiC) website	June 2022	International statutory designations within 2km. Other statutory designations within 2km. Ancient woodlands and notable habitats within 1km. Higher Level Environmental Stewardship agreements applied to the Site. Information on habitats and habitat connections (based of aerial photography) relevant to interpretation of planning policy can assessment of potential protected and notable species constraints.
Hertfordshire Environmental Records Centre (HERC)	June 2022	Non-statutory designations within 1km Protected and notable species records within 1km (records for the last 10 years only)
Ordnance Survey 1:2500 Pathfinder maps and aerial photography	June 2022	Information on habitats and habitat connections (based of aerial photography) relevant to interpretation of planning policy can assessment of potential protected and notable species constraints.

C.2 Field Survey

A Phase 1 Habitat Survey was undertaken on the 20th of May 2022 in accordance with the standard methods (Joint Nature Conservation Committee, 2016)². Phase 1 Habitat Survey is a standard method of environment audit which involves categorising different habitat types and habitat features within a survey area. The information gained for the survey was used to determine the likely ecological value of a site, and to direct any more specific survey work, which may need to be carried out prior to submission of a planning application. The standard Phase 1 Habitat Survey method was extended to record target notes on protected, notable and invasive species.

The survey area encompassed all safety accessible parts of the Site, as well as the adjacent land within 20m of the working corridor that was either accessible or clearly visible within the Site.

An appraisal was made of the potential suitability of the habitats present to support protected and notable species of plants and animals. Field signs, habitat features with potential to support protected species and any sightings or auditory evidence were recorded when encountered, but no detailed surveys were carried out for any particular species.

A note was made of visible instances of invasive non-native plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) including Japanese knotweed (*Reynoutria japonica*) and likewise for species listed on the Invasive Alien Species (Enforcement and Permitting) Order 2019. Locations of plants or animals of any such non-native invasive plant species found were recorded.

² JNCC (2016) Handbook for Phase 1 Habitat Survey – a technique for environment audit

C.3 Initial Bird Nesting Assessment

An assessment on the structures and trees on and surrounding the Site for their suitability to support nesting birds were carried out on the 20th of May 2022. The survey was focused on trees and buildings likely to be impacted by the development carried out on Site. Features were searched for using close focusing binoculars included nests both in use and abandoned, as well as cavities in trees that could be used by larger species such as owls and woodpeckers.

C.4 Initial Bat Roosting Assessment

An assessment of the trees and structures on and surrounding the Site was carried on the 20th of May 2022 to determine their suitability to support roosting bats. The survey was conducted in line with the Bat Conservation Trust (BCT) survey guidelines³.

Close focusing binoculars were used to conduct an external assessment of structures and trees where access was permitted. It should be noted that this only provided an initial assessment of features with suitability for roosting bats, through the presence of Potential Roost Features (PRFs). Checks of interior spaces of trees and structures were not completed.

On the basis of the external assessment, the overall suitability of these trees and structures to support roosting bats was classified according to the scale outlined in the table below with the follow up survey effort requirement outlined in the following table.

Table 4. Criteria used to describe Bat Roost Suitability

Suitability Level		Type of Roost	
Habitat Suitability/Level of Risk	Summer/Transition Roost used by non-breeding birds	Habitat Suitability/Level of Risk	Summer/Transitional Roost used by non-breeding birds
Confirmed	Presence of bats or evidence of bats. Confirmation of roost status may require further survey.		
High	Feature with multiple roosting opportunities for one or more species of bats with good connectivity to high quality foraging habitat.	Feature with multiple roosting opportunities for breeding bats (size, temperature), with close proximity and connectivity to high quality foraging habitat.	Large site that offers cool stable conditions with multiple roosting opportunities in close proximity to high quality foraging habitat.
Moderate	Feature with some roosting opportunities and connectivity to moderate or high-quality foraging habitat	Feature providing some roosting opportunities with some connectivity to moderate or high-quality foraging habitat.	Medium sized feature with some roosting opportunities and some connectivity to moderate or high-quality foraging habitat.
Low	Feature with a limited number of roosting opportunities with poor connectivity to foraging habitat.	Feature with a limited number of roosting opportunities for breeding bats with low proximity and connectivity to low or moderate quality foraging habitat	Small sized feature which may be subject to disturbance or environmental variations, with a limited number of roosting opportunities and poor connectivity to foraging habitat.

Table 5. Survey Effort for Bat Roosts

Roost Location	Low Suitability	Moderate Suitability	High Suitability
Building	One survey visit; either a dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits consisting of at least one dusk emergence and a separate dawn re-entry survey, with the third visit either a dusk or dawn survey

³ Collins. J (editor) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition) Bat Conservation Trust London

Roost Location	Low Suitability	Moderate Suitability	High Suitability
Tree	No Survey Effort Required	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.	Three separate survey visits consisting of at least one dusk emergence and a separate dawn re-entry survey, with the third visit either a dusk or dawn survey.

Source: Adapted for Table 4.1 within the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016)

C.5 Limitations

The aim of the desk study was to help characterise the baseline context of the proposed facility expansion and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records of plants and animals for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that the habitat or species does not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed facility expansion.

The ecological survey represents a 'snapshot' in time of the ecological condition of the Site. The ecological character of the Site could change substantially throughout both the course of a year, and from year to year impacting on the extent and quality of the potential of habitats to support protected species. As the survey was carried inside the main plant growing season for both native and invasive non-native species it is probable that most species present were detectable during the survey. A PEA is however not a detailed inventory of plant species present, and the potential oversight of some species is not a constraint for this level of survey.

None of these limitations either singly or in combination is significant enough to affect the baseline, impact assessment and resulting mitigation or enhancement referenced in this report

C.6 Lifespan of the Report

The constraints outlined in this report will need to be reassessed if there is a significant change to the type or scale of development proposed or is there any significant changes in the use of management of the land that would affect the habitats and species.

If a planning application is made 18 months or more after a PEA, it is advisable to review and update the survey data. This follows guidance from the Chartered Institute of Ecology and Environment Management (CIEEM, 2019⁴).

⁴ CIEEM (2019) Advice Note on the Lifespan of Ecological Reports and Surveys. April 2019

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