SYNTEGRA CONSULTING

12-18 Pield Heath Road and 2 Pield Heath Avenue, Uxbridge UB8 3NF

# Preliminary Ecological Appraisal Report

November 2024

Ref: 22-8959 - Rev 1

**QUALITY STANDARDS CONTROL**

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the originators and approved by a director.

| *Revision* | - | *Rev 1* |
|---|---|---|
| Date | 04/11/2024 | 07/11/2024 |
| Prepared by | D. Bardey | D. Bardey |
| Checked by | E. Raymundo | E. Raymundo |
| Authorised by | E. Snape | E. Snape |

**Note**

The advice which we have prepared and provided within this report is in accordance with the CIEEM Code of Professional Conduct. We confirm that the opinions expressed are our true and professional opinions. Opinions and information provided in the report are based on Syntegra Group Ltd using reasonable skill, care and diligence in the preparation of the same in compliance with the CIEEM Code of Professional Conduct.

**Validity of Data**

The findings of the site survey are valid for a period of 24 months from the date of the survey. If approved works have not commenced by this date, then an updated site survey could be required to inform any changes to the habitats present on site in order to inform any updated mitigation and or precautionary measures required on site.

## LIMITATIONS

Syntegra Consulting Ltd ("SC") has prepared this report for the sole use of the **Simply UK,** in accordance with the agreement under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by SC.

The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by SC has not been independently verified by SC, unless otherwise stated in the report.

The methodology adopted and the sources of information used by SC in providing its services are outlined in this report. The work described in this report was undertaken in **November 2024** and is based on the conditions encountered and the information available during the said period of time. The scope of this report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

SC disclaim any undertaking or obligation to advise any person of any change in any matter affecting the report, which may come or be brought to SC's attention after the date of the report.

Certain statements made in the report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. SC specifically does not guarantee or warrant any estimate or projections contained in this report.

Where applicable, costs may vary outside the ranges quoted. Whilst cost estimates are provided for individual issues in this report these are based upon information at the time which can be incomplete. Cost estimates for such issues may therefore vary from those provided. Where costs are supplied, these estimates should be considered in aggregate only. No reliance should be made in relation to any division of aggregate costs, including in relation to any issue, site or other subdivision.

No allowance has been made for changes in prices or exchange rates or changes in any other conditions which may result in price fluctuations in the future. Where assessments of works or costs necessary to achieve compliance have been made, these are based upon measures which, in SC's experience, could normally be negotiated with the relevant authorities under present legislation and enforcement practice, assuming a pro-active and reasonable approach by site management.

Forecast cost estimates do not include such costs associated with any negotiations, appeals or other non-technical actions associated with the agreement on measures to meet the requirements of the authorities, nor are potential business loss and interruption costs considered that may be incurred as part of any technical measures.

## EXECUTIVE SUMMARY

Land at 12-18 Pield Heath Road and 2 Pield Heath Avenue, Uxbridge', UB8 3NF (Grid ref: TQ 07458 81944) is being promoted for development by the applicant, Simply UK. The proposed scheme includes re-developing the site into a residential care home with associated access, planting, and hard and soft landscaping. This scheme would be an extension to an existing granted scheme at 12-18 Pield Heath Road & 2 Pield Heath Avenue Pield Heath Avenue Hillingdon UB8 3NF (planning ref: 76760/APP/2024/2042). The scope of the work is to amend the existing granted scheme and increase the number of residential units from 61 to 81.

Habitats on the site are considered to be of low-to-moderate ecological value and the presence of protected species is of low-to-moderate potential. The site contains areas of developed land, vegetated garden with grassland and ornamental scrubs, scattered trees, non-native hedgerows and a singular pond. The site has low-to-moderate potential for use by foraging and traversing bats due to connectivity to suitable habitats in the wider landscape. The vegetated garden and native hedgerow provide some suitability for use local invertebrates and nesting birds. Further opportunities, enhancements are recommended from section 6.5 onwards. By retaining and enhancing suitable habitat, the risk to protected species and habitats is low and reasonable avoidance measures. If the habitats are to be removed the following appropriate precautionary and mitigation measures are highlighted below.

The further surveys and precautionary methods are recommended:

- Adherence to standard pollution prevention measures from GOV.UK.
- One pond is situated within the site, and based upon granted EPSLs, great crested newts are known within the wider landscape (600m north). As no local biodiversity records search has been commissioned a precautionary approach should be adopted. The pond should be subject to either (1) an eDNA analysis to ensure absence from the site or (2) a pre-works site check of habitats and vegetation removed under the guidance of a suitably licensed ecologist. Alternatively, the scheme may wish to join a District Level Licensing (DLL) Scheme.
- Clearance of hedgerow and vegetated habitats should be outside of nesting bird season (march to august inclusive) and under the supervision of a suitable qualified ecologist to reduce risk of injury or harm to reptiles.
- During the work any holes, trenches, and/or ditches be supplied with an inclined mammal ladder to provide a means of escape. Future fencing on the site must ensure use of mammal gates/gravel boards to allow for movement.
- The development should seek to achieve biodiversity net gain of at least 10% in line with the Environment Act 2021 and provision of enhancements for birds, bats, invertebrates and small mammals.

## Table of Contents

# 1.0 INTRODUCTION AND AIMS

**1.1** Syntegra Group was commissioned by Simply UK. to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at 12 Pield Heath Road, Uxbridge, UB8 3NF (Grid ref: TQ 07458 81944).

**1.2** This report has been prepared in support of the application being submitted by Simply UK ('The Applicant') to London Borough of Hillingdon ('the Council') for the development at 12 Pield Heath Road, Uxbridge, UB8 3NF (Grid ref: TQ 07458 81944) ('the site').

**1.3** The objectives of this PEA were to:

- Map the main ecological features within the site and compile a plant species list for each habitat type;
- Make an initial assessment of the presence or likely absence of species of conservation concern, survey the buildings on site, and identify the presence or likely absence of bats and nesting birds;
- Identify any legal and planning policy constraints relevant to nature conservation which may affect the development;
- Determine any potential further ecological issue;
- Determine the need for further surveys and mitigation; make recommendations for minimizing impacts on biodiversity and providing net gains in biodiversity, where possible, in accordance with Section 15: Conserving and Enhancing the Natural Environment, of the National Planning Policy Framework (NPPF) (MHCLG, 2023).

**1.4** The site survey was undertaken by Daniel Bardey BSc (Hons) MRes, a suitably qualified ecologist, on the 21st of October 2024. Daniel is a qualifying member of the Chartered Institute of Ecology and Environmental Management and holds wildlife licences issued by Natural England for bats CL18 class 2, great crested newts CL08 class 1 and barn owl CL29. Weather conditions were suitable with 30% overcast and a slight breeze. The timing of the survey was inside the optimal period for surveying buildings for bat roosting opportunities but outside the optimal period in the year for and botanical surveys and Preliminary Ground Level Tree Roost Assessments (PGLTRA), however some features should still be sighted during the evaluation of the trees. This is not seen as a major constraint as the ecologist is still able to make a robust assessment of the habitats present and their overall potential to support protected species.

**1.5** The proposed scheme includes re-developing the site into a residential care home with associated access, planting, and hard and soft landscaping. This scheme would be an extension to an existing granted scheme at 14-18 Pield Heath Road & 2 Pield Heath Avenue Pield Heath Avenue Hillingdon UB8 3NF (planning ref: 76760/APP/2024/2042). The scope of the works is to amend the existing granted scheme and increase the number of residential units from 61 to 81. Full details of the development are available in the planning portal.

# 2.0 METHODOLOGY

**Preliminary Ecological Appraisal**

**2.1** The methods outlined in the CIEEM Guidance for Preliminary Ecological Appraisals (2017) were used for this survey. The field survey comprised of an extended UKHabitat Survey (UKHab, 2023) of the proposed development site. This is a standard technique for obtaining baseline ecological information for areas of land, including proposed development sites.

**2.2** Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support legally protected species, other species of conservation concern and any listed species of principal importance under the NERC Act (2006). When appraising the overall potential of protected species during the survey, the habitat(s) on site were assessed as present, high, moderate, low, and negligible.

**2.3** Invasive species listed under Schedule 9 of the Wildlife Countryside Act (1981 as amended) were searched for and recorded.

**2.4** The survey was undertaken by Daniel Bardey BSc (hons) MRes, Ecologist at Syntegra Group and follows CIEEM institutes Code of Professional conduct when undertaking surveys (CIEEM, 2016). Daniel is a qualifying member of the Chartered Institute of Ecology and Environmental Management and holds wildlife licences issued by Natural England for bats CL18 class 2, great crested newts CL08 class 1 and barn owl CL29 (licence number available upon request).

Desktop Study

**2.5** Syntegra Consulting undertook a basic internet-based search of statutory designated sites within 2km of the site using the Natural England/DEFRA web-based MAGIC database (www.MAGIC.gov.uk) for MAGIC. No local biological records searches have been commissioned. It should note that a lack of records does not guarantee a species absence from the surrounding area.

**2.6** Ordnance survey maps and aerial images of the site were examined online using bing.com/maps and maps.google.co.uk.

**2.7** The London Borough of Hillingdon Local Plan, was consulted for details on policies relevant to designated sites, protected species and general ecology protection.

**Zone of Influence (Zol)**

**2.8** The Zol is used to assess any potential direct and indirect impacts or risks to the site and the immediate surrounding habitats. The Zol is also used to determine the feasibility for enhancements for the site and within the surrounding areas/habitats. The Zol is based on the following: the site itself, the areas directly adjacent to the site and areas up to 2km outside of the site including statutory and non-statutory designated sites. The Zol looks for potential impacts to habitats and species with possible connectivity to the site itself.

**Preliminary Roost Assessment and Preliminary Ground Level Tree Roost Assessment**

**2.9** The survey followed guidelines by the Bat Conservation Trust (2023) Bat Surveys Good Practice Guidelines 4th edition. The trees were assessed as either negligible, low, moderate, high, or confirmed, refer to table 1 below. A Ground Level Tree Roost Assessment (GLTRA) was carried out during the optimal period for surveying as the trees are devoid of dense foliage.

**Table 1: Roost Classification, adapted from Collins 2023**

| Category | Description of Roosting Habitat | Number of Surveys Required |
|---|---|---|
| Negligible | Little to no suitable locations for roosting, not ideal for supporting bats. | No further surveys. |
| Low | A structure with one or more potential roosting spaces that could be used by opportunistic individual. The features and surrounding habitats do not provide enough suitable conditions and or space for use as a maternity or hibernation roost. A tree that could contain potential roosting features but not observed from ground. | One Survey carried out between the May and August. |
| Moderate | A structure or tree with one or more potential roosting spaces that could be use by individuals based on the features (size, shelter, conditions, and surrounding habitat) but unlikely to support a roost of high conservation value. | Two further surveys between May-September with one survey between May and August. |
| High | A structure or tree with one or more potential roosting spaces that are suitable for use regular use and or larger numbers of bats for a more prolonged period due to the conditions and surrounding habitats. A tree with one or more potential roost sites suitable for use by a larger number of bats. | Three further carried out between May to September with two undertaken between May to August. The surveys must be undertaken three weeks apart, spaced surveys are preferred. |
| Confirmed | Positive evidence of bats - i.e. droppings, individuals, or bat records. | |

## 3.0 CONSTRAINTS

**3.1** Due to time of year, it is possible that certain flowering herbs and or ephemerals may have not been recorded during the survey and an extensive species list was not obtained but it is considered that the species characteristic to the habitats on site were recorded. The survey provides a snapshot of the site and does not show seasonal differences. Ecological surveys are limited by factors that affect the presence of plants and animals such as activity levels at time of year, weather, migration patterns, and behaviour. The survey was undertaken in February and represents a valid sample of ecological evidence present on that date. This report is not designed, nor is it required to, present a complete inventory of flora/fauna.

**3.2** Preliminary Ground Level Tree Roost Assessments were undertaken at the sub-optimal time of year.

**3.3** The client is responsible for reading and understanding the advice given in this report. The client must ensure that, where recommended, avoidance, mitigation, and compensation is followed through.

# 4.0 RESULTS

**UKHabitat Survey**

**4.1** The site measures approximately 0.066ha.

**4.2** The site is largely rectangular in shape and is found in the sub-urban town of Uxbridge in west London. The site is surrounded immediately on all aspects by an assortment of private dwellings with associated private gardens. The wider landscape features an extensive number of residential dwellings, in addition to pockets of open grassland and broadleaved trees. These are all interconnected via several linear vegetated features such as lines of trees and hedgerows (figure 1).


**Figure 1: Wider landscape surrounding the site (Google Maps, 2024)**

**4.3** With the exception of on-site ponds, there are no known waterbodies or waterways within 250m of the site. This was assessed from satellite imagery, and OS maps.

**4.4** There are five broad habitat types found within the site and on the site boundaries, these are:

- 11 scattered trees
- 828 vegetated hardens
- h2b11 non-native ornamental hedgerow with trees
- u1b5 buildings
- 42 pond (non-priority)
- u1b developed land sealed surface

Buildings and their relation to roosting bats is discussed further in section 4.5

**Table 2: Habitat Descriptions and Evaluation**

| **UKHabitat Classification** | |
|---|---|
| *11 scattered trees* | |
| Two free standing scattered trees sit among the site a silver birch (*Betula pendula*)centre to the rear garden, and a coniferous (*Pinopsida sp*.) tree adjacent to the garden shed. |  <br>**Scattered trees within the site (1).**<br>  <br>**Scattered trees within the site (2).** |
| Potential Constraints:<br>This habitat is of moderate value to nesting and foraging birds.<br><br>Removal of this habitats should be avoided or at least be conducted outside of nesting bird season (March – August) and supervised by a suitably qualified ecologist.<br><br>Condition Assessment:<br>Moderate. | |

| *828 vegetated gardens* | |
|---|---|
| Description: Two parcels of vegetated garden sit to the north and south of the site. The vegetated garden is largely dominated by G4 modified grassland consisting of rye grass species (*Lolium* spp.), with scattered ornamental shrubs throughout. Ornamental species include cherry laurel (*Prunus laurocerasus*), plum (*Prunus* spp.), grape (*Vitis vinifera*), rhododendron (*Rhododendron* spp.), fig (*Ficus carica*), ivy (*Hedera helix*), rose (*Rosa* spp.), and holly (*Ilex aquifolium*). |  <br>**Example of vegetated garden (1).**<br>  <br>**Example of vegetated garden (2).** |
| Potential Constraints:<br>This habitat may be value to foraging birds and traversing small mammals and invertebrates but is largely of low ecological value.<br><br>Condition Assessment: N/A | |

*H2b-11 non-native ornamental hedgerow with trees*

Description:

A non-native ornamental hedgerow with trees surrounds all aspects of the site, and was found to be intact, without gaps, and in good condition. Species composition was consistent throughout and largely dominated by cherry laurel (*Prunus laurocerasus*). Species include ash (*Fraxinus excelsior*), ivy (*Hedera helix*), holly (*Ilex aquifolium*), rose (*Rosa* spp.), rhododendron (*Rhododendron* spp.), fig (*Ficus carica*), plum (*Prunus* spp.), Japanese spindle tree (*Euonymus japonicus*), conifer (*Coniferales* spp.), herb Robert (*Geranium robertianum*), and grape (*Vitis vinifera*).

**Example of non-native hedgerows (1).**

**Example of non-native hedgerows (2).**

Potential Constraints:

This habitat is of low-to-moderate value to nesting and foraging birds, and small traversing mammals/invertebrates.

Removal of this habitats should be conducted outside of nesting bird season (March – August) and supervised by a suitably qualified ecologist.

Condition Assessment: Poor.

| U1b developed land; sealed surface | |
|---|---|
| Description: developed land; sealed surface leads off from Pield Heath Road to form and access a driveway within the site. A small, paved pathway continues along the western elevation of the building and connects to the rear garden where a small patio area is situated. |  **Developed land to the south of site.** |
| Potential Constraints:<br>This habitat is of no ecological value.<br><br>No further surveys or mitigation recommended.<br>Condition Assessment: N/A. |  **Developed land to the north of site.** |

| 42 pond (non-priority) | |
|---|---|
| Description: A small ornamental pond is found to the east of the rear vegetated garden. Suspect parrots feather (*Myriophyllum aquaticum*) was noted to of established in a large portion of the pond. |  <br>**Pond within the site.** |
| Potential Constraints:<br>This habitat is of low-to-moderate ecological value.<br><br>Strict control measures are required to prevent its spread, especially in sensitive areas like ponds.<br><br>Condition Assessment: Poor |  <br>**Suspect parrots feather (*Myriophyllum aquaticum*).** |

**Preliminary Roost Assessment**

**4.5** Building 1

A detached single storey bungalow is situated within the centre of the site. This features a series of pitched roofs which were found to be in good condition with no slipped, gapped or cracked tiles. The lower walls of the structure are of a mock-tudor style with white painted render. No gaps were noted among the facia or soffit boards within the building. A flat roof extension sits the north-west of the building and was found to be intact.

No access was granted at time of site visit to inspect any loft voids.

Based upon the lack of suitable roosting features or potential points of access into the loft void, this building has been assessed as hosting **negligible** suitability for roosting bats.

Figure 1: Southwestern view of building 1, facing northeast.

House 2

This is a wood clad summer how with pitched felt roof. No known roosting features present and has been assessed as hosting negligible potential for roosting bats.

Figure 2: Eastern elevation of house 2, facing west

Preliminary Ground Level Tree Roost Assessment

**4.6** No known Potential Roosting Features (PRFs) were found on trees within the site.

# 5 IMPACT ASSESSMENT

**Statutory and Non-Statutory Sites**

**5.1** There is no statutory sites within 2km of the site.

**5.2** Due to the size and nature of the development it is unlikely the local planning authority needs to seek further advice or permission from Natural England in relation to impacts to statutory sites within 2km of the site. However as good practice it is recommended that pollution prevention measures from GOV.UK (2016) are in place during and post construction to prevent any potential indirect impacts from the site to surrounding sites.

**5.3** The proposed development with avoidance, mitigation and compensation measures in place, along with biodiversity enhancements, will not cause negative impacts on local wildlife and will ensure connectivity within the wider landscape. See section 6 of this report for further details.

**Protected Habitats**

**5.4** Deciduous woodland, traditional orchards and wood-pasture and parkland priority habitats are all found within 2km of the site. The closest of which is 135m southeast of the site.

**5.5** All trees adjacent to the site or on-site and set for retention should be protected during the demolition and construction phases of the development with a root protection zone (RPZ) of at least five metres.

**European Protected Species Mitigation Licences**

**5.6** There are two European Protected Species Mitigation (EPSM) licences granted within 2km of the site, both of which for great crested newts. EPSM licences are found approximately 600m north of the site.

**Planning Polices**

**5.7** The planning policies look to paragraphs 174-182 of the National Plan Policy Framework (2023), in particular paragraph 180(d), 'minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'; as well as paragraph 185(b), 'promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity'; and 186(d), 'development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate'.

**5.8** The site has low-to-moderate potential for use as nesting sites for local birds, low-to-moderate potential for use by foraging common species of invertebrates, low-to-moderate potential for foraging and traversing urban mammals and reptiles, and foraging bats. The development should ensure that minimal light spills onto boundary habitats. The future lighting on site must ensure a lighting plan that is direct, low light spill, low lux and have hooded designs. This prescribed further mitigation, and enhancement measures recommended within this report would ensure a retention of biodiversity and ensure net gain.

**Protected Species**

**Plants**

**5.9** All plant species recorded on the site are common and widespread, and it is considered that no rare or threatened plant species are present on the site. It is likely that some short-lived annual species were missed due to the timing of the survey. There is scope to enhance the site by incorporating wildlife planting within the plot, biodiverse ones rather than use of sedum mats, particularly would be attractive for use and benefit both local invertebrates and foraging birds and bats

**5.10** All trees adjacent to the site that are scheduled for retention under the development proposals should be protected during the demolition and construction phases of the development with a root protection zone (RPZ) of at least five meters.

**Bats**

**5.11** All bat species are legally protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and under Regulation 43 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. It is an offence to deliberately capture or kill a wild animal of a European protected species, deliberately disturb any such animal and/or to damage or destroy a breeding site or resting site making bats a material consideration in the planning process. The BMERC records search returned soprano pipistrelle and brown long eared bats species. Non-specific records were returned for long eared and pipistrelle bats.

**5.12** All buildings within the site were assessed as hosting negligible suitability for roosting bats. No trees were found to host any potential roosting features.

**5.13** The site is considered to be of low-to-moderate for foraging and traversing bats, due to the parcel of grassland within the site that may provide foraging opportunities. Given the wider landscape having suitable habitats such as open grassland and woodland, it is considered that the local and wider landscape may support a range of species and is of moderate value. Bat species are light sensitive, and the proposals must incorporate an appropriately designed landscaping scheme, that will enhance the site for traversing and foraging bats and along with measures proposed in section 6.2, it is unlikely that the development will adversely affect local bat populations.

**Birds**

**5.14** The site is characterised by developed land, grassland, hedgerows and scattered trees. The survey found a low to medium probability of birds nesting on site during the nesting season (1st March to 31st August). Clearance of vegetation or work on building sections with potential to contain nesting birds should be carried out outside this period. Should any clearance of trees or hedgerows with potential to contain nesting birds be required during the nesting season any such areas to be cleared should first be inspected by an ecologist/supervised by an ecologist. If an active nest is then found clearance will have to be delayed within 5 metres of the nest until any chicks present have left the nest.

**5.15** The proposal should incorporate an appropriately designed landscaping scheme that will enhance the site for nesting and foraging birds along with measures proposed in section 6. It is unlikely that the development will adversely affect local bird populations.

**Badgers**

**5.16** Badgers (*Meles meles*) are legally protected under The Protection of Badgers Act 1992 and, as such, are of consideration when applying the principles of the NPPF (MHCLG, 2023). It is a criminal offence to:

- Wilfully kill, injure, or take any badger;
- Possess or cruelly ill-treat a badger;
- Possess any dead badger or part of one;
- Possess or control a living, healthy badger;
- Intentionally or recklessly damage, destroy or obstruct access to a sett, or disturb a badger whilst it is occupying a sett.

**5.17** No evidence indicating that badgers have excavated setts on the site was found during the survey and no evidence of foraging or dispersal activity was found (e.g. snuffle holes, latrines, pathways, hair, and feeding remains). No setts were seen in the adjacent habitats surrounding the site.

**Great Crested Newts & Amphibians**

**5.18** GCN are legally protected under section 9 of the Wildlife and Countryside Act 1981 (as amended) and regulation 43 of The Conservation of Habitats and Species Regulations (2017) thus making GCN a material consideration of the planning process.

**5.19** From studying OS maps and aerial photographs, no known ponds were identified within 250m of the site. However, one pond is found within the site and a Habitat Suitability Assessment (HSI) against the ARG UK Advice Note 5 returned a below average (0.58) score. Great crested newts are among the wider (<1km) landscape known from granted EPSLs. Whilst the on-site habitats are thought to of low potential to support great crested newts, no local biodiversity records search has been commissioned and comment cannot be made as to local populations. As a precautionary method the proposed scheme should eDNA the pond ahead of works to confirm absence in the immediate landscape OR have a pre-clearance site walkover by a great crested newt licenced ecologist and supervised site clearance to ensure no newts are impacted by the scheme. A pre-works method statement should be outlined ahead of works. As

Alternatively, the proposed scheme may wish to enquire about joining a District Level Licensing Scheme.

**Table 3: HIS Score Results assessed from ARG UK Advice Note 5**

| SI No | SI Description | SI Value |
|---|---|---|
| 1 | Geographic location | 1 |
| 2 | Pond area | 0.2 |
| 3 | Pond permanence | 0.9 |
| 4 | Water quality | 0.33 |
| 5 | Shade | 1 |
| 6 | Waterfowl effect | 1 |
| 7 | Fish presence | 1 |
| 8 | Pond Density | 0.1 |
| 9 | Terrestrial habitat | 0.67 |
| 10 | Macropyhyte cover | 1 |
| | Total | 0.58 |
| | Pond Suitability | Below Average |

**Reptiles**

**5.20** The habitats on site are of low suitability for reptile species and currently no further surveys or mitigation is recommended.

**Hedgehogs**

**5.21** Hedgehog (*Erinaceus europaeus*) are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and are listed as a species of principle importance for biodiversity

conservation in the Section 41 list of the NERC Act (2006). Local records returned no records of hedgehogs. However, during the works any holes, trenches, and/or ditches should be supplied with an inclined mammal ladder to provide a means of escape. Future fencing on the site must ensure use of mammal gates/gravel boards to allow for movement as noted in the recommendations section.

**Invertebrates**

**5.22** This site is likely to support both common such as butterflies, moths, flies, bees, and beetles.

**5.23** The sites habitats are likely to support low numbers of common invertebrate species, such as butterflies, moths, flies, bees, and beetles. It is not considered that any further surveys are necessary.

**5.24** The proposal incorporates an appropriately designed landscaping scheme that will enhance the site along with measures proposed in section 6.2, it is unlikely that the development will adversely affect local invertebrate populations.

**Invasive Species**

**5.24** Parrots feather (*Myriophyllum aquaticum*) is thought to be known in the pond within the site and is a listed species within Schedule 9 Part 2 of the Wildlife and Countryside Act 1981 (as amended). Strict control measures are required to prevent its spread, especially in sensitive areas like ponds. A removal plan would be necessary to handle it legally and responsibly before any works commence. Such a plan usually includes:

- Physical removal of the plant to prevent its spread.
- Disposal in accordance with legal guidelines, as improper disposal can lead to further spread.
- Monitoring and follow-up treatments, since Parrot's Feather can regrow from small fragments.

## 6.0 CONCLUSIONS

**6.1** Habitats on the site are considered to be of low-to-moderate ecological value and the presence of protected species is of low-to-moderate potential. The site contains areas of developed land, vegetated garden with grassland and ornamental scrubs, scattered trees, non-native hedgerows and a singular pond. The site has low-to-moderate potential for use by foraging and traversing bats due to connectivity to suitable habitats in the wider landscape. The vegetated garden and native hedgerow, provide some suitability for use local invertebrates and nesting birds. Further opportunities, enhancements are recommended from section 6.5 onwards. By retaining and enhancing suitable habitat, the risk to protected species and habitats is low and reasonable avoidance measures. If the habitats are to be removed the following appropriate precautionary and mitigation measures are highlighted below.

**6.2** The nature of the proposed development, with additional surveys, mitigation, and precautionary measures in place, will ensure that the proposals will have no adverse impacts upon surrounding habitats, protected species, and wildlife in general. The following further methods are recommended:

**6.3** impacts, mitigation and enhancements to local species

**Table 3: Potential Key Species/Habitats on Site and Proposed Avoidance, Mitigation, Compensation and Enhancement**

| *Species/Habitats* | *Impact* | *Avoidance and Mitigation* | *Compensation and Enhancements* |
|---|---|---|---|
| Priority habitats and local landscape | Potential pollution damage during construction works. | Adherence of standard pollution prevention measures from GOV.UK; fuel kits to be kept on site and fuelling of all vehicles done off-site.<br><br>A robust CEMP in place ahead of works. | N/A |
| Nesting birds | Some disturbance to nesting birds might be encountered during the construction phase. | Adherence to vegetation removal outside of bird nesting season March to August (inclusive) under the supervision of a qualified ecologist. | Installation of nest boxes placed either within retained mature trees or incorporated into new building walls. Foraging enhancement of site by new native trees within site and around boundaries. |
| Bats | Potential loss of foraging/traversing habitat. | Retain existing suitable habitat and linear features where possible. | Planting of native and wildlife-friendly species throughout the proposed development, bat box incorporated into new build and low impact lighting scheme implemented |
| Invasive species | Potential spread of Parrots feather | A removal plan would be necessary to handle it legally and responsibly before any works commence. | N/A |
| Invertebrates | Potential loss of shelter, foraging and breeding grounds. | Retainment of suitable habitat wherever possible. | Biodiversity enhancement by planting of native/wildlife species throughout the site (including green roof); installation of insect boxes where possible. |
| Reptiles | Potential loss of shelter, foraging. | Retainment of suitable habitat wherever possible. | Enhance boundaries wherever possible to ensure connectivity across landscape and to maintain foraging grounds. |
| Great Crested Newt | Pond onsite assessed as below average. | Pre-works eDNA survey<br>or<br>works cleared under the supervision of a licenced ecologist and method statement<br>or scheme to join district level licencing | N/A |
| Badgers and Hedgehogs | Loss of foraging grounds | Mammal ladders and hole/trench coverings during construction phase of development. | Native planting promoting foraging.<br><br>Hedgehogs only: provision of connectivity to wider landscape along with resting places for hedgehogs |

**6.4** In line with local and national policy (NPPF 20191), the new development should seek to provide biodiversity enhancements.

The following suggestions would enhance the site for wildlife:

Recommended Biodiversity Enhancements

**6.5** **Urban tree planting**

Is it recommended to plant small to medium trees within the site boundary?

**Resilience including climate adaptation:**

- Selection of trees identified as being resilient and adaptable to the range of circumstances expected in urban areas as a consequence of climate change;
- Planting of a wide range of trees and plant material sources that increase genetic diversity. A best practice approach is to apply a '10–20–30' formula to develop a diverse tree population - no more than 10% of any species, 20% of any genus or 30% of any family; and,
- Selection of trees should be tailored to local site conditions.

***Biodiversity:***

Native species support a greater diversity of other species, enhance local biodiversity and increase resilience to pests/diseases and climate change. A list of native and non-native species that are beneficial to pollinating insects is provided in Appendix 6.

**6.6** **Planting species-rich hedgerows**

All hedgerow planting should utilize native species or species with a known benefit to wildlife.

- Select the species mix. Include native species such as hazel *Coryllus avellana*, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*. Ideally plant at least five different species to provide a good quality hedgerow.

**6.7** **Native wildflower planting in new modified grassland**

The proposed modified grassland on the site provides low ecological value and will benefit from seeding the edges with wildflower seeds. Wildflowers germinate best on loose and crumbly soil, and the best time to sow the seed is in mid-spring or early autumn. Wildflowers usually flower between May and September, attracting a wide range of pollinators. After the first flowering season, the grassland should be mown in late summer, leaving the cuttings for a few days so that any seeds can fall to the ground.

**6.8** The biodiversity enhancements (and precautionary mitigation measures) should be informed by all ecological surveys and should form part of a Biodiversity Enhancements and Mitigation Plan (BEMP), to be secured by an appropriate planning condition. This should ensure compliance with local and national policies.

[1] https://www.gov.uk/government/publications/national-planning-policy-framework--2

## 6.9 Faunal Features

***Generalist bird boxes***

Incorporating generalist bird boxes, suitable for widely distributed bird species, in appropriate locations can be provided within the site.

***Bat boxes***

The bat boxes can be incorporated where possible into the post-development.

***Invertebrate features***

In conjunction with incorporation of pollinator planting, installation of habitat features specifically to benefit invertebrates near pollinator planting can provide additional cover, food and nesting/resting habitat for invertebrates.

***Invertebrate loggery***

Invertebrate loggeries are beneficial for invertebrates, however hedgehogs and reptiles also benefit from them, as they use them as shelter. They can be custom designed and built to fit available space and local requirements.

***Log piles***

Log piles are another option to provide habitat for invertebrates, which also could be used by other species such as hedgehogs and reptiles within the woodland. The logs could be provided through management of the woodland, retaining the logs on site.

***Hedgehog houses/ domes***

The hedgehog *Erinaceus europaeus* is a UK native mammal. Their habitat includes hedgerows, woodland edges, parks and gardens. Hedgehogs are in serious decline in rural and urban areas in the UK. Loss and damage of suitable habitat is the main threat they face. However, the loss of connectivity in urban areas, due to impermeable fencing, loss of green in gardens, road kills, and increasing development, are causes that are impacting negatively on their populations in urban environments.

***Eco Hedgehog Hole Fence Plate***

A hole measuring 13cm by 13cm is ideal size for a hedgehog to pass through but too small for most large mammals such as foxes and domestic cats. Once the hole in the fence/wall has been created, fixing an Eco Hedgehog Hole Plate to the fence will ensure that the hole won't get blocked or stretched.

The Eco Hedgehog Hole Plate is made from 100% recycled plastic, mostly derived from plastic waste. It is UV-stabilized, giving it a longer lifetime span against rot and sun exposure.

1


2

3

4

5

6

7

**1. Schwegler hedgehog dome**
**2. Hedgehog highway gap in fence (Image sourced from hedgehog street.org. Photo credit Sean Hill)**
**3. Log Piles**
**4. Bat brick**
**5. Bat box on tree (Images sourced from Bat Conservation Ireland © Paul van Hoof)**
**6. Bat box on building**
**7. Bat boxes on post (Image sourced from nestbox.co.uk).**

## 7.0 REFERENCES

ARG UK (2010). *Advice Note 5, Great Crested Newt Habitat Suitability Index*. Amphibian and Reptile Group UK.

Department for Communities and Local Government (2021). *National Planning Policy Framework*. www.communities.gov.uk

English Nature (2001). *Great crested newt mitigation guidelines*. English Nature, Peterborough.

Froglife (1999). *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.* Froglife Advice Sheet 10. Froglife, Peterborough.

Gent, A.H., & Gibson S.D. (1998). *Herpetofauna workers' manual*. Joint Nature Conservation Committee, Peterborough.

Gunnell, K., Grant, G. and Williams, C. (2012). Landscape and Urban Design for Bats and Biodiversity, Bat Conservation Trust.

Hundt (2023). Bat Surveys-Good Practice Guidelines. 4th edition. Bat Conservation Trust, London.

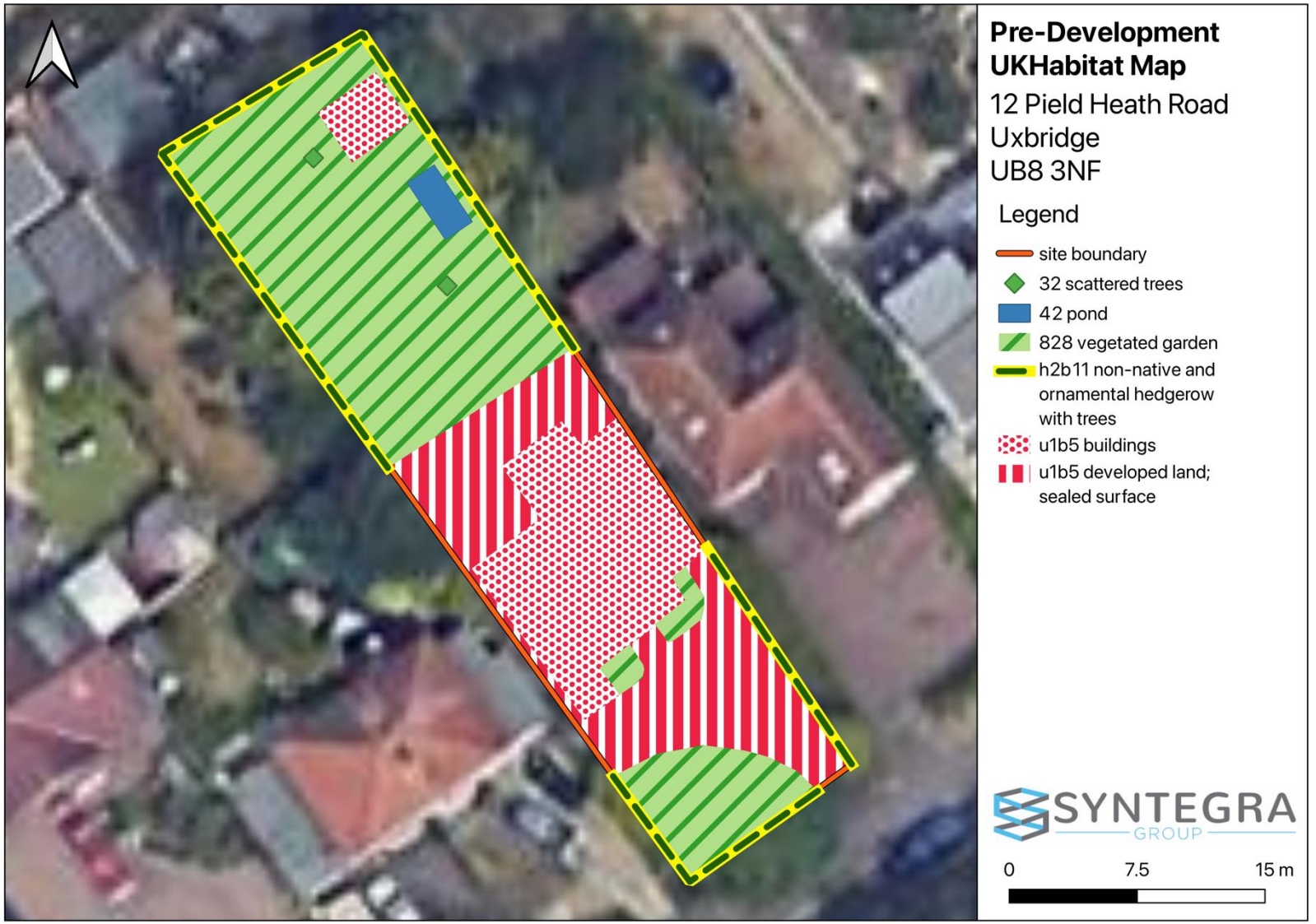
UKHab (2023) UK Habitat Survey Methods https://ukhab.org/

MAGIC. Multi-Agency Geographic Information for the Countryside. https://magic.defra.gov.uk/

NatureSpace Partnership (2023) https://naturespaceuk.com/district-licensing/impact-map/

Stace, C. A. (1997). *New Flora of the British Isles, 2nd Edition.* Cambridge University Press. Ca

## APPENDIX 1: UKHabitat Map



# APPENDIX 2: Site Photos

Photo 1: Southern elevation of building 1.

Photo 2: Western elevation of building 1.

Photo 3: Northern elevation of building 1.

Photo 4: Northern elevation of building 1 (1).

Photo 5: North-eastern corner of building 1.

Photo 6: Southern elevation of the summer house.

Photo 7: Vegetated garden and non-native hedgerow to the south of site (1).

Photo 8: Vegetated garden and non-native hedgerow to the south of site (2).

Photo 9: Vegetated garden and non-native hedgerow to the north of site (1).

Photo 10: Vegetated garden, scattered trees and non-native hedgerow to the north of site.

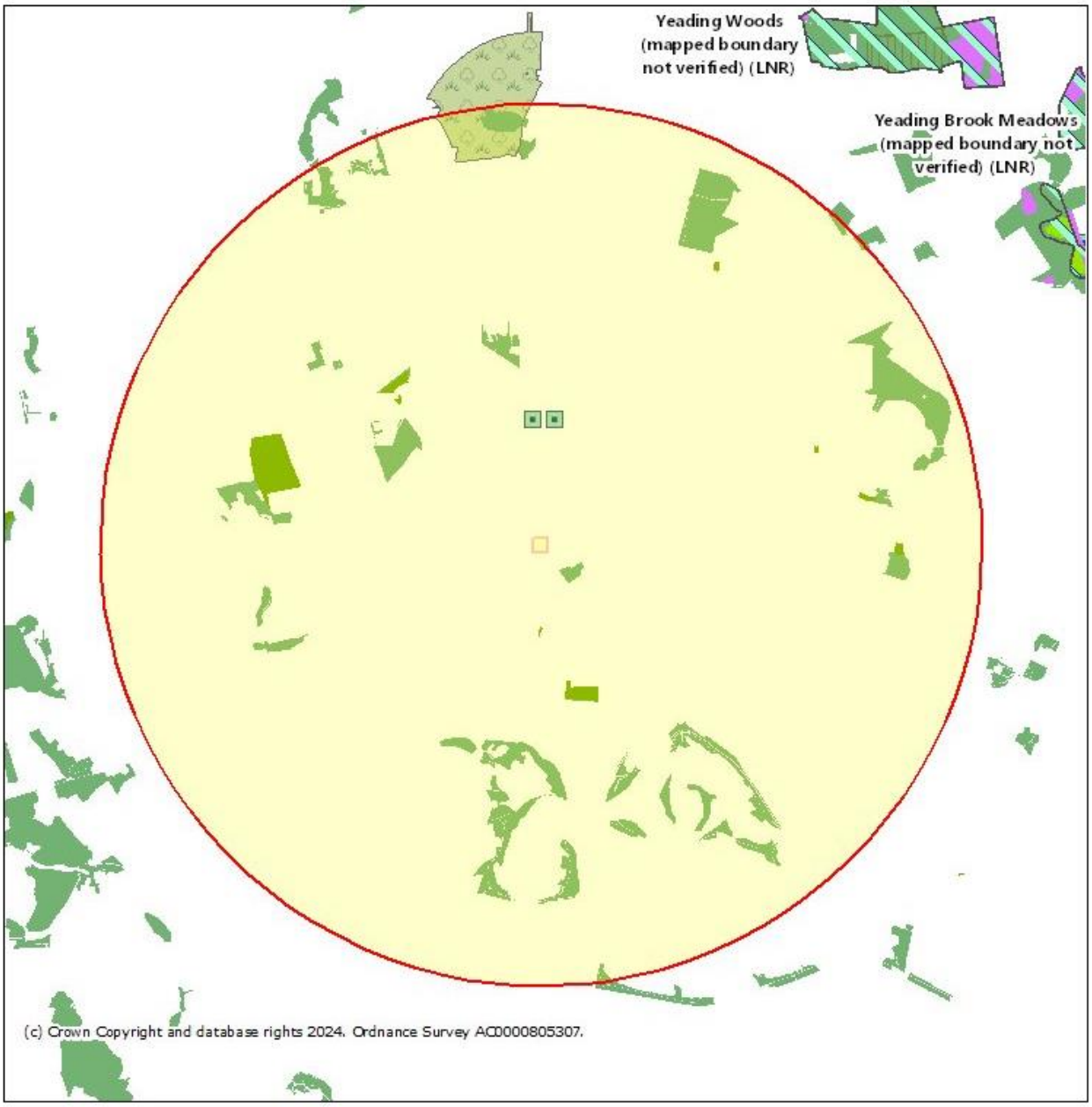
Photo 11: Vegetated garden and non-native hedgerow to the north of site (2).

Photo 12: Pond within the site.

| | |
|---|---|
|  |  |
| Photo 13: Suspect parrot's feather. | Photo 14: Pond and vegetated garden on the eastern elevation. |
|  |  |
| Photo 15: Vegetated garden and non-native hedgerow to the west of site (1). | Photo 16: Vegetated garden and non-native hedgerow to the west of site (2). |

# APPENDIX 3: Statutory Nature Sites, Priority habitats and ESPMS within 2km

## APPENDIX 4: Non-Statutory Sites within 2KM




Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)
- Priority Habitat Inventory - Coastal Saltmarsh (England)
- Priority Habitat Inventory - Coastal Sand Dunes (England)
- Priority Habitat Inventory - Coastal Vegetated Shingle (England)
- Priority Habitat Inventory - Maritime Cliffs and Slopes (England)
- Priority Habitat Inventory - Mudflats (England)

0 0.75 1.5
km

Projection = OSGB36
xmin = 503900
ymin = 175900
xmax = 511000
ymax = 187800

Map produced by MAGIC on 2 November, 2024.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

## APPENDIX 5: Legislation

This section details the legislation relevant to the protection of species and habitats. It also details the relevant policies within national, regional, and local planning policy.

*National Planning Policy Framework (NPPF) (MHCLG, 2023)*

The revised National Planning Policy Framework (NPPF), updated in February 2019 and revised July 2021 and September 2023, sets out the Government's planning policies for England and how these should be applied. The revised NPPF continues to stress the importance of the local authority contribution to improving and protecting the environment through development of a systematic approach to enhancing biodiversity, minimizing waste and pollution, and mitigation/adaptation to climate change impacts. Chapter 15 requires that local planning authorities, when considering planning applications, should aim to conserve and enhance biodiversity. This is underpinned by Planning Practice Guidance 2014 (MHCLG, revised 2019) which suggests:

The NPPF is clear that pursuing sustainable development includes moving from a 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.

Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include habitat restoration, re-creation and expansion; improved links between existing sites; buffering of existing important sites; new biodiversity features within development; and securing management for long term enhancement. New or improved habitat needs to be located where it can best contribute to local, national and international biodiversity restoration.

Where a development cannot satisfy the requirements of the 'mitigation hierarchy', planning permission should be refused as per paragraph 180 of the NPPF; and

Sufficient green infrastructure should be designed into a development to make the proposal sustainable. High-quality networks of multifunctional green infrastructure contribute a range of benefits, including ecological connectivity, facilitating biodiversity net gain and nature recovery networks and opportunities for communities to undertake conservation work.

*The New London Plan (Greater London Authority, 2021)*

The New London Plan is the Spatial Development Strategy for Greater London and aims to set out a framework for development across London over the next 20-25 years. Chapter 8 of the Plan is dedicated to Green Infrastructure and the Natural Environment. Key policies within this chapter for consideration here are:

Policy G1 Green Infrastructure highlights the requirements for green infrastructures and outlines that the existing network of open spaces and green features within London's built environment should be retained, protected and enhanced through development proposals. Developments should incorporate appropriate elements of new green infrastructure to integrate in the wider green infrastructure network across London.

Policy G5 Urban greening introduces the Urban Greening Factor, which has been developed by the Mayor as a measure of changes in green infrastructure as a result of a development. It is proposed that Borough's tailor the requirements to be delivered under Urban Greening depending on their individual existing green assets and requirements. The policy states 'that major developments should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage'.

Policy G6 Biodiversity and Access to Nature seeks to ensure that SINCs are retained and protected from harm caused by new developments. It also advises that Borough Development Plans should support the protection and conservation of priority species and habitats that occur outside of the SINC network and support the creation of habitats and habitat features which are relevant and beneficial within an urban context. The policy also states that development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain, although use of a recognized metric and a quantified assessment of this is not specified.

Policy G7 Trees and Woodlands states that development should seek to retain and protect trees of value. Where trees will be lost, they should be adequately replaced based on the existing value and benefits of the removed trees. Planting of additional trees should generally be included within developments, including larger canopied species which can provide more benefits.

The Mayor's Biodiversity Strategy balances the adopted London Plan (consolidated with alterations since 2011) with Policy 5 seeking to ensure opportunities are taken to green the built environment within development proposals and utilise open spaces in ecologically sensitive ways. Policy 13 states that funding will be increased for biodiversity projects in London to ensure projects incorporate biodiversity provision.

**The Environment Act 2021**

In 2021 the Environment Act gained Royal Assent, providing a new legislative framework for developments to consider in respect of potential environmental impacts and opportunities. Within the Environment Act there is a call for all developments to deliver a 10% net gain for biodiversity using a measured approved metric approach. This is due to become mandatory from January 2024 in England.

*Biodiversity Laws*

Statutory protection is afforded to certain wild habitats and species through European Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (the 'Habitats Directive'). This has been adopted into UK legislation under the 2017 Habitats Regulations. At the national level protection is found in the Wildlife and Countryside Act (WCA 1981; as amended) and it is designed to protect species and habitats considered to be of principal importance in order to conserve biodiversity.

Under Regulation 43 of the Habitats Regulations, it is an offence to deliberately capture or kill a wild animal of a European protected species, deliberately disturb any such animal and to damage or destroy a breeding site or resting site. Since August 2007 amendments to the Conservation (Natural Habitats) Regulations 1994 have changed the term 'deliberately disturb' such that it is an offence if the species are disturbed in such a way that it is likely to significantly affect the colony's ability to survive, breed or rear their young; or affect the local distribution or abundance of that species.

The WCA 1981 (as amended) is the principal mechanism for the statutory protection of wild flora and fauna in the United Kingdom. Reptiles, including slow worms and grass snakes, are protected under Schedule 9(1) against intentional killing and injuring. Nesting birds are also protected under the WCA 1981 (as amended) which makes it an offence to intentionally kill, injure or take them, take, damage or destroy their nest whilst in use or being built, or to take or destroy their eggs.

All species of bats are strictly protected through UK and European regulations. Bats have been placed on protected lists due to the overall steady decline of species over the last century. Under section 9 in conjunction with Schedule 5 of the WCA 1981 (as amended), all bats are protected from intentional or reckless disturbance. Additional protection for all bat species is provided under Schedule 2 of The Conservation of Habitats and Species Regulations Licenses are needed if the disturbance is to produce a significant effect on the bat colony, which would otherwise be an offence. These may be granted for the purposes specified under section 16 of the WCA 1981 as well as under Section 55 under the Habitat Regulations, following the submission of a licence application to Natural England.

Badgers are protected under the Badger Protection Act 1992 and under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended); badgers are classified as a species of conservation concern under the UK Biodiversity Action Plan and listed under Appendix 3 of the Bern Convention under Appendix 3 of the Bern Convention.

## APPENDIX 6: Recommended Plant Species

**Table A5.1:** Native and wildlife-friendly shrubs (Natural England, 2008).

| Common Name | Scientific Name |
|---|---|
| Hazel | *Corylus avellana* |
| Elder | *Sambucus nigra* |
| Goat willow | *Salix caprea* |
| Hawthorn | *Crataegus monogyna* |
| Dog rose | *Rosa canina* |
| Guelder rose | *Viburnum opulus* |
| Gorse | *Ulex europaeus* |
| Broom | *Cytisus scoparius* |
| Wayfaring tree | *Viburnum lantana* |
| Shrubby cinquefoil | *Potentilla fruticosa* |
| Raspberry | *Rubus idaeus* |
| Alder buckthorn | *Frangula alnus* |
| Wild privet | *Ligustrum vulgare* |
| Barberry | *Berberis* × *stenophylla* |
| Barberry | *Berberis vulgaris* |
| Bell heather | *Erica cinerea* |
| Bilberry | *Vaccinium myrtillus* |
| Black currant | *Ribes nigrum* |
| Blackthorn | *Prunus spinosa* |
| Buckthorn | *Rhamnus catharticus* |
| Butcher's-broom | *Ruscus aculeatus* |
| Cowberry | *Vaccinium vitis-idaea* |
| Cross-leaved heath | *Erica tetralix* |
| New Zealand holly | *Olearia macrodonta* |
| Daphne | *Daphne odora* |
| Dogwood | *Cornus sanguinea* |
| Field rose | *Rosa arvensis* |
| Firethorn | *Pyracanthus angustifolia* |
| Flowering Currant | *Ribes sanguineum* |
| Gooseberry | *Ribes uva-crispa* |
| Hebe 'Midsummer Beauty' | *Hebe* sp. |
| Himalayan honeysuckle | *Leycesteria formosa* |
| Holly | *Ilex aquifolium* |
| Japanese quince | *Chaenomeles japonica* |
| Lilac | *Syringa vulgaris* |
| Mexican orange | *Choisya ternata* |
| Mezereon | *Daphne mezereum* |
| Midland hawthorn | *Crataegus laevigata* |
| Oregon grape | *Mahonia aquifolium* |
| Osier | *Salix viminalis* |
| Portugal laurel | *Prunus lusitanica* |
| Privet | *Ligustrum ovalifolium* |
| Purple willow | *Salix purpurea* |
| Snowy mespilus | *Amelanchier canadensis, Amelanchier lamarckii* |

| Common Name | Scientific Name |
|---|---|
| Spindle | *Euonymus europaeus* |
| Spurge laurel | *Daphne laureola* |
| Sweet briar | *Rosa rubiginosa* |
| Wild privet | *Ligustrum vulgare* |

**Table A5.2:** Native and wildlife-friendly trees **(Natural England, 2008)**.

| Common Name | Scientific Name |
|---|---|
| Pedunculate oak | *Quercus robur* |
| Ash | *Fraxinus excelsior* |
| Wych elm | *Ulmus glabra* |
| Whitebeam | *Sorbus aria agg.* |
| Rowan | *Sorbus aucuparia* |
| Aspen | *Populus tremula* |
| Apple | *Malus domestica* |
| Bird cherry | *Prunus padus* |
| Common alder | *Alnus glutinosa* |
| Crab apple | *Malus sylvestris* |
| Crack willow | *Salix fragilis* |
| Downy birch | *Betula pubescens* |
| Field maple | *Acer campestre* |
| Hornbeam | *Carpinus betulus* |
| Juniper | *Juniperus communis* |
| Large-leaved lime | *Tilia platyphyllos* |
| Small-leaved lime | *Tilia cordata* |
| Pear | *Pyrus communis* |
| Scots pine | *Pinus sylvestris* |
| Sessile oak | *Quercus petraea* |
| Silver birch | *Betula pendula* |
| Sweet chestnut | *Castanea sativa* |
| Wild cherry | *Prunus avium* |
| Wild service-tree | *Sorbus torminalis* |
| Yew | *Taxus baccata* |

**Table A5.3:** Moth pollinator species (Butterfly Conservation, 2019).

| Common Name | Scientific Name |
|---|---|
| Honeysuckle | *Lonicera periclymenum* |
| Jasmine | *Jasminum officinale* |
| Evening primrose | *Oenothera biennis* |
| Sweet rocket | *Hesperis matronalis* |
| Night-scented stock | *Matthiola bicornis* |
| Aubretia | *Aubretia* sp. |
| Cuckooflower | *Cardamine pratensis* |
| Forget-me-not | *Myosotis* sp. |
| Honesty | *Lunaria annua* |

| | |
|---|---|
| Pansy | *Viola* sp. |
| Primrose | *Primula veris* |
| Wallflower | *Erysimum* sp. |
| French marigold | *Tagetes* sp. |
| Ice plant | *Sedum* sp. |
| Knapweed | *Centaurea* sp. |
| Lavender | *Lavendula* sp. |
| Marjoram | *Origanum vulgare* |
| Michaelmas daisy | *Aster amellus* |
| Mint | *Mentha* sp. |
| Scabious | *Scabiosa* sp. |
| Thyme | *Thymus* sp. |

# *GARDENING FOR BATS*

**All sixteen species of bats in the UK eat insects, and need a good supply of these from spring through to the autumn. By growing flowers attractive to a range of insects, our gardens can become important feeding stations for bats, birds and other wildlife.**

### *Many plants depend on insects*

We grow flowers in our gardens for our own enjoyment. But colour and perfume are really the plants' way of advertising themselves to insects. Sweet nectar and protein-rich pollen are bait to encourage insects to visit. In return, pollen is carried from one flower to another on their bodies so the flowers are fertilised.

### *Bats need insects*

Flying uses a lot of energy, so bats have huge appetites. All our UK bats eat insects. Five species, including the long-eared bat, prefer moths, but most bats rely more heavily on flies as food than any other insect group. Especially important are craneflies, and a range of midge families and their relatives. Pipistrelles, the bats most likely to visit your garden, depend on catching very large numbers of tiny insects, some of which are pests.

### *Flower shape and insect tongues*

Flowers with long narrow petal tubes, such as evening primrose and honeysuckle, are visited by moths and butterflies. Only their long tongues can reach deep down to the hidden nectar.
Short-tongued insects include many families of flies and some moths. They can only reach nectar in flowers with short florets.
By planting a mixture of flowering plants, vegetables, trees and shrubs, you can encourage a diversity of insects to drop in and refuel.

### *Follow these general rules*

? Plant flowers varying not only in colour and fragrance, but also in shape.
? Daisies and daisy-like flowers are open with a mass of shallow florets.
? Pale flowers are more easily seen in poor light.
? Single flowers have more nectar than double varieties
? Native wild flowers or those closely related are most useful
? Flowers with landing platforms and short florets such as daisy or carrot family attract many insects.
? Many flowering vegetables such as beans and courgettes are also good for insects.

### *Plant trees and shrubs*

These are important in providing

- food for insect larvae
- food for adult insects
- shelter for flying insects
- roosting opportunities for bats.

In a small garden, choose trees that can be coppiced – cut down to the ground every few years - to allow new shoots to spring from the base. Young shoots and leaves will support leaf-eating insects, even if they do not produce flowers. Hawthorn and elder are useful small trees.

### *Create a wet area*

A pond, a marshy area, even a half-tub made into a mini-pond can attract insects. Many of the tiny flies favoured by bats start life in water as aquatic larvae.

### *Say NO to insecticides*

Chemical pesticides kill natural predators and so may do more harm than good. They reduce bats' insect prey, and surviving insects carry traces of poison.

### *Encourage natural predators*

Hoverflies, wasps, ladybirds, lacewings, ground beetles and centipedes are the gardener's friends. As natural predators they help keep the balance, eating many pests.
? Allow some weeds to grow to provide ground cover for natural predators
? Grow favourites of hoverflies and other predators close to the flowers and vegetables that tend to become infested.
? Leave hollow-stemmed plants to overwinter as shelter for ladybirds.
? Leave heaps of dead leaves and brushwood undisturbed for hedgehogs.
? Most garden birds are effective predators. Provide them with regular food and water.

### *Prevent a CATastrophe*

Many bats and other small mammals fall prey to Britain's most dangerous four-legged predator, the domestic cat. Cats do not need to stay out all night. Bring you cat in an hour before sunset so bats can emerge undisturbed.
*(Send for our special leaflet on cats and bats.)*

The Bat Conservation Trust, 15 Cloisters House
8 Battersea Park Road, London SW8 4BG
Tel 0845 1300 228 Fax 020 7627 2628
enquiries@bats.org.uk www.bats.org.uk
Registered Charity no 1012361 Company limited by guarantee, registered in England no 271282

*August 2004*

## APPENDIX 7: Lighting guidance - the impact of artificial light on bats

The following basic set of guidelines is summarized from the latest Guidance Note (08/18)[2] provides a concise checklist of points to consider with any lighting scheme:

- *Use professional lighting design engineers to model and predict light spill so that it can be avoided.*
- *Reduce light levels to the minimum necessary to meet legal and safety requirements.*
- *Reduce horizontal and upward/downward light spillage to the minimum achievable. The use of cowling, masks, louvers etc. and limiting the height of lighting columns may be important depending on the design of the lighting units. No bare bulbs. Lighting should only light the target area.*
- *Use non-reflective surfaces within the area to be lit to minimise indirect (reflected) spillage of light. The use of planting or other structures to add screening.*
- *Reduce the duration of lighting. The use of lighting 'curfews' can also be helpful - especially in the vicinity of bats roosts. For example, the emergence of bats, typically within the hour after sunset, may be disrupted (delayed) by raised light levels and this may result in a loss of feeding opportunities.*
- *Consider the type of light to be used and whether a different type or design may reduce potential impacts on bats and other wildlife. Narrow spectrum lighting with minimal UV emission should be used.*
- *Use 'screen planting' to limit light spill into dark areas*.
- *Use narrow spectrum light sources* to lower the range of species affected by lighting, as research has shown that spectral composition does impact biodiversity.
- *Use light sources that emit minimal ultra-violet light*
- *Avoid white and blue wavelengths of the light spectrum* to reduce insect attraction and where white light sources are required in order to manage the blue short wavelength content they should be of a warm / neutral colour temperature <4,200 kelvin.

For more details, please refer to:

https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

http://www.bats.org.uk/pages/bats_and_lighting.html

http://www.batsandlighting.co.uk/index.html

[2] https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/