Land off Oakhurst Rise, Charlton Kings,
GL52 6NR

# Ecological Appraisal

April 2020

| Quality Management | |
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| **Client:** | William Morrison (Cheltenham) Ltd |
| **Project:** | Land off Oakhurst Rise, Charlton Kings, GL52 6NR |
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# Executive Summary

i) **Introduction.** Aspect Ecology was commissioned by William Morrison (Cheltenham) Ltd in September 2018 to undertake an Ecological Appraisal in respect of proposed development of land at Oakhurst Rise, Cheltenham; and subsequently, in April 2020, to undertake an overview survey of the site and update the Ecological Appraisal based on revised proposals.

ii) **Proposals.** Outline application for residential development of 43 dwellings – access, layout and scale not reserved for subsequent approval.

iii) **Survey.** A number of surveys were undertaken between 2016 and 2018 by a third-party consultancy and included a whole-site survey based on standard extended Phase 1 methodology, a Hedgerow Assessment survey, various bat surveys, and assessment of the site for its potential to support herptiles. Update survey work has been undertaken by Aspect Ecology since 2018 to further inform the assessment of ecological interests at the site.

iv) **Ecological Designations.** The site itself is not subject to any statutory or non-statutory ecological designations. The nearest statutory designation is Leckhampton Hill and Charlton Kings Common Site of Special Scientific Interest (SSSI) located approximately 2.7km to the south of the site. The nearest designation of international importance is Cotswold Beechwoods Special Area of Conservation/SSSI located approximately 7.9km to the south-west of the site. The nearest non-statutory designation is Glenfall Wood Kew Wildlife Site located approximately 0.9km to the east. All ecological designations in the surrounding area are well separated from the site, such that based on their qualifying interest features and the likely mechanisms of impact, no significant adverse effects are considered likely as a result of the proposals either alone or in-combination with other developments.

v) **Habitats.** The site is dominated by poor quality semi-improved grassland with a number of hedgerows, mature/veteran trees, and small areas of scrub/tall ruderal species. A small ephemeral pond is also present along the northern boundary of the site. Features of ecological importance include hedgerows and the mature/veteran trees, which are of at least local level value. All of the veteran trees and majority of the mature trees and hedgerows are to be retained under the proposals and will be protected during construction. The remaining habitats within the site are not considered to form important ecological features and their loss to the proposals is of minor significance. The landscaping strategy for the site will compensate for habitats and features lost to facilitate development.

vi) **Protected Species.** The site is known to support roosting bats, and small populations of reptiles, and it is likely that nesting birds utilise the hedgerows and trees on-site. The site generally offers limited opportunities for other protected species such as amphibians. The proposals have the potential to adversely affect bats, reptiles and nesting birds, and as such a number of mitigation measures have been proposed to safeguard protected species during and after construction.

vii) **Enhancements.** The proposals present the opportunity to secure a number of biodiversity net gains, including additional native tree planting, new roosting opportunities for bats, enhanced reptile habitat with increase sheltering opportunities, more diverse nesting habitats for birds, a new pond and the provision of habitat features for amphibians and invertebrates.

viii) **Summary.** In summary, the proposals have sought to minimise impacts on biodiversity, and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the development provides the opportunity to secure net gains for biodiversity. Overall, the proposals are considered to accord with relevant provisions of national planning policy, the Cheltenham Borough Local Plan, policy SD9 of the Joint Core Strategy, and site-specific policy HD4 of the emerging Cheltenham Plan.

# 1 Introduction

## 1.1 Background and Proposals

1.1.1 A planning application for the site, centred at grid reference SO 9652 2160, was submitted to Cheltenham Borough Council in August 2017 for the erection of 90 dwellings with associated access and landscaping (ref: 17/00710/OUT). The application was refused in July 2018, in part due to the potential impact on biodiversity, most notably the presence of mature/veteran trees.

1.1.2 The 2017 planning application was informed by a series of ecological reports produced by All Ecology Ltd, hereafter referred to as 'the third-party consultancy' and included:

- Ecological Appraisal: Revision 5, June 2018
- Hedgerow Assessment: February 2017
- Tree Assessment and Inspection Survey for Bat Roost Potential: Revision 4, June 2018
- Bat Activity Surveys: Revision 3, June 2018
- Reptile Precautionary Method Statement: November 2017

1.1.3 In addition, the third-party consultancy provided written correspondence (November 2017 and March 2018) in response to Natural England's comments in relation to the planning application and the potential impacts on the Cotswold Beechwoods Special Area of Conservation.

1.1.4 Following the refusal of the original planning application, a fresh application was prepared based on revised proposals to provide up to 69 residential units, with associated access and landscaping. However, this application was also refused in March 2019. A new application has been prepared for 43 dwellings, with associated access and landscaping, with the development focused in the north and west of the site. Aspect Ecology was commissioned by William Morrison (Cheltenham) Ltd to undertake an Ecological Appraisal of the site, evaluating the impact of the proposals on biodiversity at the site. This evaluation is based on the results of the survey work undertaken by the third-party consultancy between 2016 and 2018, which are referred to throughout this report, and update survey work undertaken by Aspect Ecology.

## 1.2 Site Overview

1.2.1 The site is dominated by a grassland field, bisected by a substantial hedgerow. Hedgerows are also situated along the western boundary and sections of the northern, eastern and southern boundaries. A number of trees, including mature and veteran trees, are also present on-site. Residential properties bound the site to the north, east, and west, whilst St Edward's Preparatory School and grounds bounds the south of the site.

## 1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys and desktop study carried out in order to establish the existing ecological interest of the site, and subsequently provides an appraisal of the likely ecological effects of the proposals. The importance of the habitats and species present is evaluated. Where necessary, avoidance, mitigation and compensation measures are proposed so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for ecological enhancement are identified with reference to national conservation priorities and local Biodiversity Action Plans (BAPs).

# 2 Methodology

## 2.1 Desktop Study

2.1.1 In order to compile background information on the site and its immediate surroundings Gloucestershire Centre for Environmental Records (GCER) was contacted, with data requested on the basis of a search radius of 0.5km.

2.1.2 The online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, was utilised to provide additional information on statutory designations, as well as the distance and direction of designated sites and species records within the search area.

## 2.2 Habitat Survey

2.2.1 The site was originally surveyed by the third-party consultancy on 1st September 2016, based on standard Phase 1 Habitat Survey methodology[1], whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal[2] to record details on the actual or potential presence of any notable or protected species or habitats. A botanical survey of the grassland was conducted by Aspect Ecology in July 2019, and an overview survey of the site undertaken in April 2020.

2.2.2 A hedgerow assessment of two of the on-site hedgerows (H1 and H2; see Plan 5487/ECO2) was undertaken on 6th February 2017. This survey recorded species present in the hedgerows and within 1m, as well as the presence of standard trees and other associated features, and details on management and structure. This survey aimed to ascertain whether the hedgerows qualify as ecologically important under the Hedgerows Regulations 1997, as well as inform any mitigation measures recommended. The condition of the hedgerows was checked in April 2020 to determine whether any changes to these features has occurred which might affect their status.

## 2.3 Faunal Surveys

2.3.1 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species including casual searches for bird nests and evidence of Dormice such as gnawed nuts, and searches of refugia (e.g. logs) for sheltering reptiles and amphibians. Specific consideration was given to bats, Great Crested Newt, and reptiles, as described below.

Bats

2.3.2 **Preliminary Ground Level Roost Assessment.** A preliminary ground level roost assessment was undertaken in February 2017 to identify potential roosting features such as Woodpecker holes, hazard beams, cavities and peeling bark. These features were then subject to further detailed inspections in May 2017 to identify signs of the presence of

1 Joint Nature Conservation Committee (2010, as amended) *'Handbook for Phase 1 habitat survey: A technique for environmental audit.'*

2 Chartered Institute for Ecology and Environmental Management (CIEEM) (2013) '*Guidelines for Preliminary Ecological Appraisal.*'

roosting bats such as droppings, odour, staining or the presence of actual bats. An update Preliminary Roost Assessment of the trees was conducted in April 2020.

2.3.3 **Dusk emergence/ Pre-Dawn Re-entry Surveys.** Dusk emergence and pre-dawn re-entry surveys were carried out in June 2017 to identify any bats roosting within the trees highlighted to have potential to support roosting bats, which could not be fully inspected. For a detailed description of the methodology followed, please refer to the roosting bat report produced by the third-party consultancy[3].

2.3.4 **Activity Surveys.** Walked transect surveys were undertaken monthly from April to August 2017 to ascertain the level of usage of the site by foraging or commuting bats. Automated static detector surveys were also carried out during which remote detectors were positioned at four locations (see Plan 5487/ECO2) within the site for approximately seven days each month (April to August 2017). For a detailed description of the activity surveys, please refer to the Bat Activity Survey report produced by the third-party consultancy[4].

Great Crested Newt (*Triturus cristatus)*

2.3.5 **Habitat Suitability Index (HSI).** As a first step in identifying the potential presence of Great Crested Newt at the site, a Habitat Suitability Index (HSI) study was undertaken[5] of all relevant water bodies within 250m[6] of the site boundary.

2.3.6 An HSI study is used to assess the potential of water bodies to support Great Crested Newt. It is undertaken by attributing a score to a number of factors that can affect the presence or absence of this species. Ten factors are utilised in an HSI assessment, as described below:

- *SI1 Location.* The location of the water body within Great Britain;
- *SI2 Pond area.* The size of the water body;
- *SI3 Permanence.* How often the water body dries out;
- *SI4 Water Quality.* The water quality, based primarily on invertebrate diversity;
- *SI5 Shade.* The percentage of the perimeter of the water body that is shaded;
- *SI6 Fowl.* The presence or absence of water fowl;
- *SI7 Fish.* The presence or absence of fish;
- *SI8 Pond Count.* The number of water bodies within 1km of the surveyed water body (not counting those on the far side of major barriers such as roads);
- *SI9 Terrestrial.* The quality of terrestrial habitat surrounding the water body; and
- *SI10 Macrophytes.* The percentage cover of the surface area of the water body covered by macrophytes (aquatic plants).

2.3.7 The overall suitability of the water body is then determined by entering these figures into an equation devised by Oldham *et al*. (2000)[7]. The suitability of water bodies is classed into one of five categories, either 'poor', 'below average', 'average', 'good' or 'excellent'.

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3 All Ecology (Revision 4: June 2018): Tree Assessment and Inspection Survey for Bat Roost Potential – Dusk Emergence and Pre-dawn Re-entry Surveys

4 All Ecology (Revision 3: June 2018): Bat Activity Surveys

5 All Ecology (Revision 5, June 2018): Ecological Appraisal

6 250m is the typical maximum migratory range of this species, see English Nature (2004) '*An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt* Triturus cristatus'. English Nature Research Report 576

7 Oldham RS, Keeble J, Swan MJS & Jeffcote M (2000) '*Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*'. Herpetological Journal 10 (4), 143-155

Reptiles[8]

2.3.8 Given the presence of potentially suitable reptile habitat within the site, a specific survey was undertaken to establish the presence/ likely absence of common reptile species between July and August 2019.

2.3.9 A total of 100 50x50cm sheets of thick roofing felt were placed within suitable areas across the site to act as artificial refugia, which represents a density of approximately 23 refugia per hectare of suitable reptile habitat (see Plan 5487/ECO3 for refugia locations); exceeding the recommended survey effort of 10/ha. The refugia, or 'tins', provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature, which allows them to forage earlier and later in the day. Therefore, checking the refugia at appropriate times of the day (morning at this site) enables the presence / likely absence of common reptiles to be determined.

2.3.10 Following distribution, the refugia remained undisturbed for approximately one week to allow reptiles to find and start using them. After this initial bedding-in period, refugia were checked at an appropriate time of the day on seven occasions during suitable weather conditions, e.g. bright, intermittent or hazy sunshine, not too wet or windy, sunny spells following wet or cloudy weather, and air temperatures. In addition, reptiles basking in the open or partial cover were actively searched for in suitable locations across the site through direct observation. Existing natural objects (e.g. logs and rocks) and artificial refugia (e.g. debris, tyres, etc.) were also searched, where present, for reptiles or evidence of reptiles (e.g. sloughed skin). Following this initial bedding-in period, refugia were checked at appropriate times of the day on seven occasions during suitable weather conditions, as set out below in Table 2.5.

**Table 2.5.** Reptile survey dates and weather conditions.

| Survey Date | Weather Conditions | | | |
|---|---|---|---|---|
| | Wind (BF) | Temp(c) | Cloud Cover (%) | Precipitation |
| 11/07/2019 (set-up) | 1 | 21/22 | 30 | None |
| 18/07/2019 | 2 | 20 | 75 | None |
| 22/07/2019 | 1 | 18 | 60 | None |
| 24/07/2019 | 1 | 18 | 40 | Prev. Night |
| 26/07/2019 | 2 | 18 | 30 | Prev. Night |
| 29/07/2019 | 1 | 16 | 5 | None |
| 31/07/2019 | 2 | 16 | 70 | Prev. Night |
| 02/08/2019 | 1 | 5 | 80 | None |

*BF0 = calm, BF12 = hurricane force*

2.3.11 In addition, reptiles basking in the open or partial cover were actively searched for in suitable locations across the site through direct observation. Existing natural objects (e.g. logs and rocks) and artificial refugia (e.g. debris, tyres, etc.) were also searched, where present, for reptiles or evidence of reptiles (e.g. sloughed skin).

[8] Surveys based on: Froglife Advice Sheet 10 (1999) '*Reptile Survey - an introduction to planning, conducting and interpreting surveys for snake and lizard conservation.*'

Other faunal surveys

2.3.12 Incidental observations of invertebrates, birds, amphibians, reptiles and other mammals were recorded by the third-party consultancy during their survey visits to the site.

## 2.4 Survey Constraints and Limitations

2.4.1 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. A Phase 1 habitat survey was undertaken within the optimal season, with general update surveys undertaken at various times of year, therefore allowing a satisfactory assessment of habitats and botanical interest across the site.

2.4.2 A recognised limitation of the bat activity surveys is that bat detectors can only provide an index of activity rather than absolute numbers of bats. Therefore, the results of the bat activity surveys should only be considered indicative of the amount of use bats make of an area rather than the abundance of bats. In addition, some bat species, e.g. Brown Long-eared Bat, are difficult to detect due to their quiet echolocation calls.

2.4.3 The assessments herein are based on findings reported by a third-party consultancy, see documents listed at 1.1.2, and update survey work undertaken by Aspect Ecology between 2018 and 2020. The extent of survey work undertaken is considered to provide sufficient information such that further survey work at this time is considered unlikely to make any material difference to the conclusions drawn.

2.4.4 In regard to reptiles, best practice guidelines[9] advise survey work be undertaken within the `profitable` months of April, May and September, although confirms reptiles are generally active March to October. However, the guidelines confirm the more exact timing of the survey work would depend on temperature, rainfall and other climatic conditions; and in regard to the former, the guidelines state reptiles are more likely to be found basking when air temperatures are between 9 and 18°C. Accordingly, `*early in the year, reptiles are often encountered closer to mid-day when it is warmest; conversely, in the very hot conditions of midsummer, reptiles may be found progressively earlier in the morning and later in the afternoon*`[10]. In accordance with the guidance, surveys at the site were conducted in the morning when refugia were warm and before air temperatures had become less optimal: the approach taken was appropriate for the time of year the surveys were conducted. Further to this, over double the refugia density was employed at the site, such that the survey effort exceeded guidance requirement.

## 2.5 Ecological Evaluation Methodology

2.5.1 The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018)[11], which involves identifying 'important ecological features' within a defined geographical context (i.e. international, national, regional, county, district, local or site importance). For full details refer to Appendix 5487/1.

[9] Froglife Advice Sheet 10: Reptile Survey – An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.
[10] Ibid Footnote 1 above.
[11] CIEEM (2018) '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*', ver. 1.1, Chartered Institute of Ecology and Environmental Management, Winchester

## 2.6 National Policy Approach to Biodiversity in the Planning System

2.6.1 The National Planning Policy Framework (NPPF)[12] describes the Government's national policies on 'conserving and enhancing the natural environment' (Chapter 15). NPPF is accompanied by Planning Practice Guidance on 'Biodiversity, ecosystems and green infrastructure' and ODPM Circular 06/2005[13].

2.6.2 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss[14], as set out at Paragraph 170, which states that planning policies and decisions should contribute to and enhance the natural and local environment by:

'*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*'

2.6.3 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 175:

*'When determining planning applications, local planning authorities should apply the following principles:*

*a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*

*b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*

*c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*

*d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.*

2.6.4 The above approach encapsulates the 'mitigation hierarchy' described in British Standard BS 42020:2019[15], which involves the following step-wise process:

- **Avoidance –** avoiding adverse effects through good design;
- **Mitigation –** where it is unavoidable, mitigation measures should be employed to minimise adverse effects;

[12] Ministry of Housing, Communities & Local Government (2019) '*National Planning Policy Framework*'
[13] ODPM (2006) '*Circular 06/2005: Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*'
[14] DEFRA (2011) '*Biodiversity 2020: A strategy for England's wildlife and ecosystem services*'
[15] British Standards Institution (2013) '*Biodiversity – Code of practice for planning and development*', BS 42020:2019

- **Compensation –** where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm; and
- **Enhancement –** planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

2.6.5 The measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development (BS 42020:2019, section 5.5).

## 2.7 Local Policy

2.7.1 The Cheltenham Borough Local Plan 2nd Review (2006) is the principle planning document guiding future development with the Borough, of which policies CP3, GE6, NE1, NE2, and NE3 are of relevance to ecology/biodiversity. In addition to this, the emerging Cheltenham Plan 2011-2031 has a site-specific, namely policy HD4, which identifies biodiversity as a site constraint. Planning decisions are further informed by the Joint Core Strategy (JCS), a coordinated strategic development plan between Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council.

Cheltenham Borough Local Plan 2nd Review

2.7.2 Policy CP3 relates to sustainable development and the relevant section states:

> *'(Objectives O9, O11, O12, O16, O18 and O30): Development will be permitted only where it would:*
> *(c) conserve or enhance the best (note 4) of the built and natural environments;*
> *(d) safeguard and promote biodiversity (note 5); and'*

2.7.3 Policy GE5 relates to the protection and replacement of trees and states:

> *'Objective O12: The Borough Council will resist the unnecessary (note 1) felling of trees on private land, and will make Tree Preservation Orders in appropriate cases. For protected trees (note 2), the Council will require:*
>
> *(a) any tree which has to be felled to be replaced, where practicable (note 3); and*
> *(b) pruning, where it is necessary, to be undertaken so as to minimise harm to the health or general appearance of a tree.*
>
> *In cases where trees are not protected by a Tree Preservation Order or by being in a conservation area, but contribute to the townscape and character of the town, the Council will consider including such trees in a Tree Preservation Order.*
>
> *Note 1: The felling of a tree will be necessary only where it is diseased, unsafe, or causing harm to buildings or infrastructure. The Borough Council will seek to retain trees that are dead or dying where they contribute to the conservation of biodiversity, where they pose no harm to public safety or property.*
> *Note 2: Protected trees are those within conservation areas or subject to Tree Preservation Orders.*
> *Note 3: The legitimate felling of protected trees will require replacement planting. The Council will determine the location, size and species of the replacement.*
> *Note 4: See also policy CP 3 (sustainable environment).'*

2.7.4 Policy GE6 relates to trees and development and states:

*'Objective O12: Development which would cause permanent damage to trees of high value (note 1) will not be permitted. The following may be required in conjunction with development:*

*(a) the retention of existing trees; and*
*(b) the planting of new trees (note 3); and*
*(c) measures adequate to ensure the protection of trees during construction works.*

*Note 1 'High value' means a sound and healthy tree with at least 10 years of life remaining which makes a significant contribution to the character or appearance of a site or locality*
*Note 2 The preservation and planting of trees in conjunction with development should take account of the guidance in British Standard 5837 : 2005.*
*Note 3 Where appropriate the Council will seek agreement from developers for the planting of new trees offsite.*
*Note 4 See also policy CP 3 (sustainable environment).'*

2.7.5 Policy GE7 relates to natural features and states:

*`Objectives O12 and O18 Where planning permission for development is granted subject to the retention of existing landscape features or wildlife habitats, the following will be required:*

*(a) such features to be appropriately integrated within an overall landscaping scheme for the proposed development; and*
*(b) specified features to be properly protected prior to any equipment, machinery or materials being brought on site and during construction; and*
*(c) the long term management of features to be secured.*

*Note 1 The Borough Council will require an agreed programme of protection to be implemented prior to and during construction.'*

2.7.6 Policy NE1 relates to habitats and legally protected species and states:

*'Objective O18: Development which would materially harm, either directly or indirectly, a site supporting any legally protected species will not be permitted unless safeguarding measures can be provided through conditions or planning obligations to secure its protection.'*

2.7.7 Policy NE2 relates to designated nature conservation sites and states:

*'Objectives O12 and O18: Development which would harm, either directly or indirectly, a designated nature conservation site will not be permitted, unless:*

*(a) safeguarding measures can be provided through conditions or planning obligations to secure its protection; or*
*(b) other material factors exist to override nature conservation considerations.*

*Note 1: When considering harm to a designated nature conservation site, it will be necessary to take into account all biodiversity and/or geodiversity aspects of the site.*
*Note 2: The advice of Natural England, Gloucestershire Wildlife Trust and Gloucestershire Geoconservation will be sought on relevant applications.*

*Note 3: An environmental impact assessment will be required for all proposals for development (see Supplementary Planning Guidance on Submission of Planning Applications and appendix 4).*
*Note 4: See Biodiversity Action Plan for the UK (1994), Gloucestershire Biodiversity Action Plan (2000) and policy CP 3 (sustainable environment)'*

2.7.8 Policy NE3 relates to biodiversity and geodiversity of local importance and states:

*'Objectives O12 and O18: Development which would harm, either directly or indirectly, a habitat, species or geological site of local importance (note 1) will only be permitted where:*
*(a) the features of interest can be maintained within the development; or*
*(b) suitable measures (note 2) of mitigation or compensation can be provided.*
*Note 1: 'Local importance' includes statutory and non-statutory local nature reserves, Key Wildlife Sites, and Regionally Important Geological/Geomorphological sites (see Proposals Map and appendix 5).*
*Note 2: Measures would be secured by inclusion within the development proposal by condition or planning obligation.*
*Note 3: The Borough Council will seek the advice of Natural England, Gloucestershire Wildlife Trust, and Gloucestershire Geoconservation.*
*Note 4: An environmental impact assessment will be required in conjunction will all proposals for development (see Supplementary Planning Guidance on Submission of Planning Applications and appendix 4). Cheltenham Borough Local Plan Second Review: Adopted July 2006 70*
*Note 5: See the Biodiversity Action Plan for the UK (1994), the Gloucestershire Biodiversity Action Plan (2000), Cotswolds AONB Management Plan (2004) and policy CP 3 (sustainable environment).'*

Cheltenham Plan 2011-2031

2.7.9 The emerging Cheltenham Plan has a site-specific policy HD4, which identifies biodiversity as a constraint and includes the requirement for development to protect key biodiversity assets.

Joint Core Strategy

2.7.10 The Joint Core Strategy (JCS) is a coordinated strategic development plan between Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council. Of the policies within the JCS, Policies SD9 and INF3 are of relevance to ecology/biodiversity.

2.7.11 Policy SD9 relates to Biodiversity and Geodiversity and states:

1. *The biodiversity and geological resource of the JCS area will be protected and enhanced in order to establish and reinforce ecological networks that are resilient to current and future pressures. Improved community access will be encouraged so far as is compatible with the conservation of special features and interests*
2. *This will be achieved by:*
    i. *Ensuring that European Protected Species and National Protected Species are safeguarded in accordance with the law;*
    ii. *Conserving and enhancing biodiversity and geodiversity on internationally, nationally and locally designated sites, and other assets of demonstrable value where these make a contribution to the wider network, thus ensuring*

*that new development both within and surrounding such sites has no unacceptable adverse impacts;*

iii. *Encouraging new development to contribute positively to biodiversity and geodiversity whilst linking with wider networks of green infrastructure. For example, by incorporating habitat features into the design to assist in the creation and enhancement of wildlife corridors and ecological stepping stones between sites;*

iv. *Encouraging the creation, restoration and beneficial management of priority landscapes, priority habitats and populations of priority species. For example, by securing improvements to Strategic Nature Areas (as set out on the Gloucestershire Nature Map) and Nature Improvement Areas.*

3. *Any development that has the potential to have a likely significant effect on an international site will be subject to a Habitats Regulations Assessment*
4. *Within nationally designated sites, development will not be permitted unless it is necessary for appropriate on-site management measures, and proposals can demonstrate that there will be no adverse impacts on the notified special interest features of the site*
5. *Development within locally-designated sites will not be permitted where it would have an adverse impact on the registered interest features or criteria for which the site was listed, and harm cannot be avoided or satisfactorily mitigated*
6. *Harm to the biodiversity or geodiversity of an undesignated site or asset should be avoided where possible. Where there is a risk of harm as a consequence of development, this should be mitigated by integrating enhancements into the scheme that are appropriate to the location and satisfactory to the Local Planning Authority. If harm cannot be mitigated on-site then, exceptionally, compensatory enhancements off-site may be acceptable.*

2.7.12 Policy INF3 relates to green Infrastructure and states:

1. *The green infrastructure network of local and strategic importance will be conserved and enhanced, in order to deliver a series of multifunctional, linked green corridors across the JCS area by:*
   i. *Improving the quantity and / or quality of assets;*
   ii. *Improving linkages between assets in a manner appropriate to the scale of development, and*
   iii. *Designing improvements in a way that supports the cohesive management of green infrastructure;*
2. *Development proposals should consider and contribute positively towards green infrastructure, including the wider landscape context and strategic corridors between major assets and populations. Where new residential development will create, or add to, a need for publicly accessible green space or outdoor space for sports and recreation, this will be fully met in accordance with Policy INF4. Development at Strategic Allocations will be required to deliver connectivity through the site, linking urban areas with the wider rural hinterland*
3. *Existing green infrastructure will be protected in a manner that reflects its contribution to ecosystem services (including biodiversity, landscape / townscape quality, the historic environment, public access, recreation and play) and the connectivity of the green infrastructure network. Development proposals that will have an impact on woodlands, hedges and trees will need to*

*include a justification for why this impact cannot be avoided and should incorporate measures acceptable to the Local Planning Authority to mitigate the loss. Mitigation should be provided on-site or, where this is not possible, in the immediate environs of the site*

4. *Where assets are created, retained or replaced within a scheme, they should be properly integrated into the design and contribute to local character and distinctiveness. Proposals should also make provisions for future maintenance of green infrastructure.'*

# 3 Ecological Designations

## 3.1 Statutory Designations

3.1.1 There are no statutory designations within 1km of the site (see Plan 5487/ECO1); the nearest statutory designation being Leckhampton Hill and Charlton Kings Common Site of Special Scientific Interest (SSSI) located approximately 2.7km to the south of the site. The SSSI covers an area of ~64ha and is designated on the basis of an extensive area of unimproved calcareous grassland known to support a number of plants scarce at the national level. The next nearest statutory designation is Lineover Wood SSSI located approximately 3.3km to the south-east of the site, and is designated on the basis of being an ancient semi-natural coppice woodland. Various other designations of SSSI or Local Nature Reserve (LNR) status occur within 5km of the site.

3.1.2 Natural England has developed Impact Risk Zones (IRZs) as an initial tool to help assess the risk of developments adversely affecting Sites of Special Scientific Interest (SSSIs), taking into account the type and scale of developments. The site does not sit within an IRZ for any of the designations that occur within 5km of the site; indeed, the site is well separated from all local designations by sub-urban/urban habitat and open countryside around Cheltenham. However, the site does lie within an IRZ for Cotswold Beechwoods SAC/SSSI, located approximately 7.9km to the south-west of the site at its nearest point, which identifies a potential impact on the designation from *`any residential developments with a total net gain in residential units`*.

3.1.3 An assessment of potential adverse effects on the SAC from the proposals is detailed within Aspect Ecology's report entitled Land *off Oakhurst Rise, Charlton Kings, GL52 6NR – Information to inform a Habitats Regulations Assessment'*, dated November 2018. It concludes that any effects arising from the proposals would be negligible and unlikely to undermine the SAC's conservation objectives such that the proposals are therefore not likely to have a significant effect on the SAC either alone or in-combination with other developments and accordingly mitigation measures are not required. Subsequently a single mitigation measure has been recommended by Natural England, in the form of a homeowner's information pack. Following consultation with Natural England, the Council completed their Appropriate Assessment[16] and concluded that the proposals, in the light of the designation's conservation objectives, would have no negative effect on the integrity of the SAC. The assessment of potential adverse effects on the SAC were based on the provision of 69 residential units at the site. Accordingly, given the latest scheme is for 43 residential units, the conclusions drawn within Aspect Ecology's report are considered to remain valid.

Evaluation

3.1.4 The site itself is not subject to any statutory ecological designations, and no statutory designations are likely to be significantly adversely affected under the proposals.

## 3.2 Non-statutory Designations

3.2.1 No non-statutory designations lie within the site (see Plan 5487/ECO1), the nearest being Glenfall Wood Kew Wildlife Site (KWS) located approximately 0.9km to the east. The KWS is designated for its Ash-Wych Elm wood, with a diverse ground flora including Wood-sorrel

[16] Appropriate Assessment Under Regulation 63 Of The Conservation Of Habitats And Species Regulations 2017 and Habitats Directive. Cheltenham Borough Council.

*Oxalis acetosella* and Sanicle *Sanicula europaea*. Taking into account the designation's separation from the site and nature of the proposals, no direct or indirect impacts on this designation are anticipated.

3.2.2 In regard to the site qualifying as a KWS against the criteria set out in the Gloucestershire Key Wildlife Sites Handbook[17] 2015, it is found the site falls well short of qualification.

Evaluation

3.2.3 The site itself is not subject to any non-statutory ecological designation. All non-statutory ecological designations in the surrounding area are well separated from the site by existing development and therefore given the nature and scale of the proposals, these designations are unlikely to be adversely affected.

[17] https://www.gloucestershirewildlifetrust.co.uk/wildlife/key-wildlife-sites

# 4 Habitats and Ecological Features

## 4.1 Overview

4.1.1 The following habitats or vegetation types were identified on the site during the course of the habitat survey:

- Poor quality semi-improved grassland;
- Dense and scattered scrub;
- Tall ruderal;
- Hedgerows;
- Trees;
- Wall; and
- Standing water.

4.1.2 The locations of these habitats types and features are illustrated on Plan 5487/ECO2; and a summary of each habitat is provided below. More detailed descriptions can be found within the reports prepared by the third-party consultancy[18,19], which Aspect Ecology confirm are remain accurate following overview surveys undertaken in July 2019 and April 2020.

## 4.2 Poor Quality Semi-improved Grassland

Description

4.2.1 The site comprises two grassland fields separated disproportionately by a mature hedgerow, which were reported to be subject to regular mowing with arisings left *in situ* prior to 2017 and are now subject to a more relaxed management regime of an annual cut. The composition between the eastern and western fields is similar with a homogeneous sward dominated by broad-leaved grass species including False Oat-grass *Arrhenatherum elatius* with abundant Yorkshire-fog *Holcus lanatus*, frequent Meadow Foxtail *Alopecurus pratensis* and Cock's-foot *Dactylis glomeratus*, and occasional Timothy *Phleum pratense*, Rough Meadow-grass *Poa trivialis*, Annual Meadow-grass *Poa annua*, Sweet Vernal Grass *Anthoxanthum odoratum* and Perennial Rye-grass *Lolium perenne*.

4.2.2 Herbs within the grassland compositions are few, but include Meadow Vetchling *Lathyrus pratensis*, Lady's Bedstraw *Galium verum*, Creeping Buttercup *Ranunculus repens*, Ribwort Plantain *Plantago lanceolata*, Meadow Buttercup *Ranunculus acris*, Daisy *Bellis perennis*, Red Clover *Trifolium pratense*, Cleavers *Galium aparine*, Bird's-foot Trefoil *Lotus corniculatus*, Common Vetch *Vicia sativa*, Cut-leaved Crane's-bill *Geranium dissectum,* Common Sorrel *Rumex acetosa*, and Pignut *Conopodium majus*. Ruderal species are present amongst the sward and include Hogweed *Heracleum sphondylium*, Broad-leaved Dock *Rumex obtusifolius*, Common Nettle *Urtica dioica*, Creeping Cinquefoil *Potentilla reptans*, Creeping Thistle *Cirsium arvense* and Clustered Dock *Rumex conglomeratus*.

4.2.3 During a site visit in April 2020 it was noted a south-eastern section of the site had been cordoned off with wooden post and wire mesh fencing to provide a dedicated area for keeping Alpaca and goats. The grassland in this area was heavily grazed and piles of droppings were present. In addition to this, at the time of survey, the remains of a bonfire was visible centrally within the site and haybales piled in the east of the site indicating the

[18] All Ecology, (June 2018) '*Ecological Appraisal*' Revision 5
[19] All Ecology, (February 2017), '*Hedgerow Assessment*'

site has been used for recreational uses. No other significant changes to the composition or general management of the grassland has been recorded since the 2018 survey work.

Evaluation

4.2.4 The grassland supports a low diversity of common and widespread species and based on the type and abundance of species present it can be classified as poor quality semi-improved grassland[20]. This is likely to be a common habitat in the local area which contains a high proportion of pastoral fields to the east of the site. A number of indicator species of lowland meadows are present (e.g. Meadow Vetchling, Lady's Bedstraw and Bird's-foot Trefoil), however these are sufficiently scattered and infrequent in the otherwise grass dominated sward for the grassland to qualify as a Priority Habitat. Furthermore, the grassland was reported to be subject to regular mowing with the arisings left *in-situ*. As such, the nutrient levels within the soil are likely to be relatively high, providing an ideal environment for injurious weeds to thrive and dominate, reducing diversity within the sward.

4.2.5 Taking the above into consideration, the grassland is not considered to be of value outside of a site context and does not form an important ecological feature. The loss of grassland to the proposals is therefore of minor ecological significance. In any event, the retention of green open space to the east and south of the development, and its enhancement through provision of large areas native wildlife grassland (of considerably increased species diversity and herb cover over the grassland currently on site) are proposed such that the site will retain functional grassland habitats, which although reduced in scale will be considerably increased in quality with associated benefits in terms of pollen and nectar resources for pollinators such that a potential functional ecological gain could be achieved.

## 4.3 Dense and Scattered Scrub

Description

4.3.1 Bramble *Rubus fruticosus* agg. scrub extends into the site from the northern site boundary, whilst Blackthorn *Prunus spinosa* and Wild Plum *Prunus domestica* are reported to extend from an unmanaged hedgerow at the western site boundary.

Evaluation

4.3.2 The scrub recorded on-site has low species diversity and covers a relatively small area of the site. Scrub is a habitat that establishes quickly and is likely to occur frequently within the surrounding area. The scrub on-site does not form an important ecological feature and as such, its loss to the proposals is of minor ecological significance. This loss will be more than compensated for through the provision of new native shrub planting within the landscaping strategy for the site.

## 4.4 Tall Ruderal

Description

4.4.1 A stand of Creeping Thistle was recorded in an area of a former bonfire, whilst a stand of Creeping Thistle and Common Nettle dominate the north-western corner of the eastern field.

[20] Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

Evaluation

4.4.2 The tall ruderal present on-site has low species diversity and is a habitat type that is likely to be well represented within the local area. Furthermore, the areas of tall ruderal comprise a relatively small proportion of the site. Overall, the tall ruderal does not comprise an important ecological feature and the loss of this habitat to the proposals is of minor ecological significance. Indeed, tall ruderal species are expected to recolonise throughout the site post-development.

## 4.5 Hedgerows

Description

4.5.1 There are six hedgerows within the site, labelled H1-6 on Plan 5487/ECO2, and described below.

4.5.2 **Hedgerow H1** – Measuring approximately 190m in length, 8-10m high and 5-12m wide, the hedgerow is orientated on a north-south axis dividing the site into two disproportionately sized fields. The hedgerow appears not to have received recent management, such that it has become tall and overgrown, and is composed of mature trees of Ash *Fraxinus excelsior* and Pedunculate Oak *Quercus robur* beneath which Hawthorn *Crataegus monogyna*, Blackthorn and Holly *Ilex aquifolium* have established. The ground flora was mostly dominated by Ivy *Hedera helix*, with frequent new growth of Cow Parsley *Anthriscus sylvestris* and Cleavers, and species encroaching from the adjacent grassland with a predominance of broad-leaved grass species and few herbs. The third-party consultancy indicated the `*south portion of the hedge appears that it may have once been two parallel hedges that have merged into one*`.

4.5.3 The hedgerow was subject to an assessment against the Hedgerows Regulations 1997: The hedgerow has five woody species on average within 30m sections; there is no bank or wall supporting the hedgerow; there are 2-3 trees per 50m section; there are not at least 3 species from a list of 57 woodland plants present; there is no ditch; there are no connections to hedgerows or woodland or ponds; there is no parallel hedgerow within 15m; and the hedgerow is not adjacent to any public paths, bridleways, byways or footpaths. In addition, tree T6 lies in the northern section of the hedgerow and is noted to support a roost for Common Pipistrelle *Pipistrellus pipistrellus*, a Schedule 5 species under the Wildlife and Countryside Act 1981. Furthermore, the hedgerow is noted to be comprised of a number of noteworthy trees. Overall, the hedgerow is considered to qualify as ecologically `important` under the Hedgerows Regulations 1997.

4.5.4 **Hedgerow H2.** The hedgerow lies at the western site boundary and measures approximately 110m in length. The hedgerow appears not to have received any recent management, such that it has become overgrown. The hedgerow is dominated by Wild Plum and Bramble, with Hawthorn, Blackthorn and occasional Holly, and has a number of mature Ash and Pedunculate Oak trees. The heavy shading by the hedgerow is such that the ground flora is predominately composed of Ivy, whilst to the east of the hedgerow species from the adjacent grassland encroach.

4.5.5 The hedgerow was subject to an assessment against the Hedgerows Regulations 1997: The hedgerow has four woody species on average within 30m sections; there is no bank or wall supporting the hedgerow; there are 2-3 trees per 50m section; there are not at least 3 species from a list of 57 woodland plants present; there is no ditch; there are no connections to hedgerows or woodland or ponds; there is no parallel hedgerow within 15m; and the hedgerow is not adjacent to any public paths, bridleways, byways or footpaths. In addition,

the hedgerow is noted to be comprised of a number of noteworthy trees. Overall, the hedgerow is not considered to qualify as ecologically `important` under the Hedgerows Regulations 1997.

4.5.6 **Hedgerows H3-H6.** A number of relatively short hedgerows are present along sections of the northern, eastern and southern site boundaries, composed of ornamental species associated with the adjacent off-site residential properties and are well maintained. The hedgerows are composed of Cherry Laurel *Prunus laurocerasus*, Leyland Cypress *Cupressus × leylandii* and Holly. The Holly hedgerow was noted to also contain Bramble and Hedge Bindweed *Calystegia sepium*.

Evaluation

4.5.7 Hedgerows H1 and H2 are likely to qualify as Priority Habitats based on the standard definition[21], which includes all hedgerows (>20m long and <5m wide) consisting predominantly (≥80%) of at least one native woody species. It has been estimated that approximately 84% of countryside hedgerows in Great Britain qualify as a Priority Habitat under this definition.

4.5.8 Hedgerow H1 is substantial and outgrown in nature, containing a number of standard trees (including in particular veteran Pedunculate Oaks) and is considered to be species-rich[22]. In addition, the hedgerow is considered to qualify as ecologically `important` under the Hedgerows Regulations 1997. In contrast, hedgerow H2 is not species-rich and does not qualify as ecologically `important` under the Hedgerows Regulations 1997.

4.5.9 The remaining hedgerows are species poor and, save for the Holly hedgerow, are dominated by non-native species. Consequently, whilst the Holly hedgerow would qualify as a Priority Habitat, the others would not. None of these hedgerows would qualify as ecologically `important` against the Hedgerows Regulations 1997.

4.5.10 The proposals will result in the loss of continuous 40m sections from hedgerows H1 and H2. Hedgerows H1 and H2 are considered to form important ecological features and provide connectivity through the site and to off-site habitats, such that these loss would result in some loss of their function as wildlife corridors; although this would be relatively minor in nature as the majority of each hedgerow will remain linked to the remaining hedgerow network providing connectivity around the site and to the open land off-site to the south. In addition, new native hedgerow planting along the western boundary will re-close the gap so that this is limited to the carriageway and footways alone while an extensive wooded belt to be planted along the southern and eastern edges of the development will provide an alternative species-rich wooded wildlife corridor which will more generally compensate for the hedgerow sections lost. The retained section of hedgerows H1 and H2 will be sensitively incorporated into the proposed development. The remaining hedgerows are not considered to form important ecological features, such that their loss to facilitate development would be of minor ecological significance.

4.5.11 Retained hedgerows will be protected during the construction phase as per the recommendations included at Chapter 6 below, whilst new hedgerow planting will compensate for the sections of hedgerows lost to development, and shrub planting will bolster retained hedgerows were appropriate to maintain connectivity around the site for wildlife. Overall, it is considered that this key biodiversity asset will largely be protected

[21] Based on: Biodiversity Reporting and Information Group (2011) '*UK Biodiversity Action Plan (BAP) Priority Habitat Descriptions',* ed. Ant Maddock

[22] i.e. five or more native woody species within a 30m length (or four or more in Northern England) – FEP Manual

under the proposals in accordance with policy HD4 of the emerging Cheltenham Plan, and relevant adopted local plan policies relating to biodiversity.

## 4.6 Trees

Description

4.6.1 A number of trees are present within the site including six veteran trees (see Plan 5487/ECO2), with a further two veteran trees situated just off-site. The majority of the veteran trees are Pedunculate Oak, with a single Ash. The veteran trees are generally situated along the boundaries and associated with hedgerows, although a few are present within the grassland. In addition, there are a number of other standard trees which range in age from semi-mature to mature, with Pedunculate Oak being the most frequent. Other species present include Ash, Hawthorn, Sycamore *Acer pseudoplatanus*, Scots Pine *Pinus sylvestris* and Horse Chestnut *Aesculus hippocastanum*.

Evaluation

4.6.2 A number of standard trees recorded within the site, particularly the veteran trees, are generally of a substantial size, whilst a number are likely to be of considerable age. Accordingly, the more mature trees and veteran trees are of ecological interest in their own right such that they are considered to form important ecological features and are of at least local level value.

4.6.3 It is understood that all of the veteran trees and the majority of the mature trees within the site are to be retained under the proposals. The retained veteran trees will be fully protected following Natural England guidelines, whereby a buffer zone of semi-natural habitat is left between the development and the tree. This buffer should be at least 15 times the diameter of the trunk or 5m beyond the edge of the crown, depending on which is larger. All retained trees will be protected during construction in line with standard arboriculturalist best practice (see Chapter 6) or as advised by the Arboricultural Consultant. New native tree planting as part of the landscape design will compensate for the trees lost to facilitate development and provide new long-term opportunities for birds and invertebrates within the site. Overall, it is considered this key biodiversity asset will largely be protected under the proposals in accordance with policy HD4 of the emerging Cheltenham Plan, and relevant adopted local plan policies relating to biodiversity.

## 4.7 Wall

Description

4.7.1 A low garden wall lies along part of the east boundary separating the site from an adjacent off-site garden.

Evaluation

4.7.2 The wall will be retained under the proposals as it forms part of the boundary with an adjacent garden. As such, any plant species supported by the wall are unlikely to be significantly adversely impacted by the proposals.

## 4.8 Standing Water

Description

4.8.1 A dry depression (labelled P1 on Plan 5487/ECO2) was recorded at the northern site boundary during a site visit in September 2016, but was found to be holding water in February 2017 and April 2020. Aquatic/marginal plants are absent from the pond which is encroached by species from the adjacent grassland.

Evaluation

4.8.2 The pond present on the northern boundary of the site is considered to be ephemeral and is likely to be dry for long periods of the year. No aquatic vegetation was present within the pond and it is not considered to form an ecologically important feature. The pond appears to be lost to the proposals, although this loss would be more than compensated by the creation of a new pond in the south of the site.

4.8.3 Potential for the pond to support faunal species such as amphibians is discussed below in Chapter 5.

## 4.9 Habitat Evaluation Summary

4.9.1 On the basis of the above, the following habitats within and adjacent to the site are considered to form `important ecological features`/`key biodiversity assets`.

**Table 4.1**. Evaluation summary of habitats forming `important ecological features`/ `key biodiversity assets`.

| Habitat | Level of Importance |
|---|---|
| Hedgerows | At least Local |
| Veteran/Mature Trees | At least Local |

4.9.2 Other habitats present within the site include poor quality semi-improved grassland, scrub, tall ruderal, a wall and standing water. However, these habitats do not form `important ecological features`/ `key biodiversity assets`, and are not considered to be of importance beyond the context of the site.

# 5 Faunal Use of the Site

## 5.1 Bats

5.1.1 **Legislation.** All British bats are classed as European Protected Species under the Conservation of Habitats and Species Regulations 2017 and are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). As such, both bats and their roosts (breeding sites and resting places) receive full protection under the legislation (see Appendix 5487/2 for detailed provisions). If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats. Given all bats are protected species, they are considered to represent important ecological features. A number of bat species are also considered S41 Priority Species.

5.1.2 **Background records.** Information returned by Gloucestershire Centre for Environmental Records (GCER) includes a number of bat records within 1km of the site. A single record of an unidentified bat species dated 2016 was returned from within the site from the desktop study, and a further record of an unidentified bat species is located approximately 300m south of the site dated 2007. In addition, a Pipistrelle *Pipistrellus* sp. species roost record from 1993 was returned located approximately 420m north of the site.

**Survey Results**

Preliminary Ground Level Roost Assessment

5.1.3 The trees at the site were subject to a preliminary ground level roost assessment on 6th February 2017, 19 of which were identified to exhibit potential to support roosting bats. Subsequently, on 10th and 17th May 2017, the trees were subject to detailed aerial inspections to further inform the assessment of each potential roosting feature's (PRF) suitability to, and actual use by, roosting bats. The results of the preliminary assessment and aerial surveys, and rationale for further survey work in the form of dusk emergence and pre-dawn re-entry surveys, are summarised in table 5.1 below; see the third-party report[23] for detailed descriptions of the trees and associated features. Where any changes in the suitability of the tree was identified during an update overview survey on the 2nd April 2020, this reported at paragraph 5.1.12 below.

**Table 5.1. Preliminary Ground Level Roost Assessment Survey Results**

| Tree No. | Species | PRF - Type, height, aspect. | Roosting Potential | Emergence/ Re-entry Surveys? | Rationale for Surveys |
|---|---|---|---|---|---|
| T1 | Pedunculate Oak | Hollow trunk with a number of access holes. Peeling bark | Moderate | YES | Moderate potential features that could not be fully inspected. |

[23] All Ecology (Revision 4: June 2018) Tree Assessment and Inspection Survey for Bat Roost Potential: Dusk Emergence and Pre-dawn Re-entry Surveys.

| | | | | | |
|---|---|---|---|---|---|
| T2 | Pedunculate Oak | Knot hole and limb rot | Moderate | NO | One feature of moderate potential but fully inspected in optimal period; no evidence of bats. Remaining features were low potential. |
| T3 | Pedunculate Oak | A number of Woodpecker holes, rot hole, knot hole, squirrel hole and a hollow limb | Moderate | YES | Five features likely to be of at least moderate potential that could not be inspected. |
| T4 | Pedunculate Oak | Hollow limb, limb rot, pealing bark and Woodpecker hole | Unknown (moderate) | YES | Three features that could not be inspected, one of which is likely to be of moderate potential. |
| T5 | Pedunculate Oak | A number of cavities within the trunk, Woodpecker hole, rot hole | Moderate | NO | One feature of moderate potential but fully inspected in optimal period; no evidence of bats. Remaining features were low potential or used by breeding squirrels. |
| T6 | Pedunculate Oak | Role holes, split limb, split in trunk and peeling bark | High | YES | High potential features that could not be fully inspected. |
| T7 | Dead (2.5 m trunk only) | Hollow trunk, open at top, peeling bark and rot holes. | Low | NO | Features of almost negligible roosting potential; no evidence of use. |
| T8 | Ash | Trunk rot | Low | NO | Features of almost negligible roosting potential; no evidence of use. |
| T9 | Pedunculate Oak | Limb splits and rot hole | Low | NO | Features of low and almost negligible potential; no evidence of use. |
| T10 | Pedunculate Oak (off site but overhangs the boundary) | Knot hole, rot hole, snapped hollow limb, peeling bark | Unknown (moderate) | YES | Two features that could not be inspected. |
| T11 | Pedunculate Oak | Knot hole | Unknown (moderate) | YES | One feature that could not be inspected. |

| | | | | | |
|---|---|---|---|---|---|
| T12 | Pedunculate Oak | Peeling bark and limb splits | Low | NO | Features of low and almost negligible potential; no evidence of use. |
| T13 | Pedunculate Oak | Snapped limb, knot hole, Woodpecker hole | Unknown (moderate) | YES | One feature likely to be of low to moderate roosting potential that could not be inspected. |
| T14 | Dead (5 m trunk only) | Numerous minor rot holes and Woodpecker hole | Low | NO | Features of low and almost negligible potential; no evidence of use. |
| T15 | Pedunculate Oak | Limb split and rot in limb stump | Low | NO | Features of low and almost negligible potential; no evidence of use. |
| T16 | Pedunculate Oak | Minor cavities in open hollow trunk | Low | NO | Features of low and almost negligible potential; no evidence of use. |
| T17 | Pedunculate Oak | Rot holes, knot holes and snapped limb | Unknown (moderate) | YES | Four features that could not be inspected but likely to be of moderate potential. |
| T18 | Hawthorn | Bird box, Bat box | Low/ moderate | NO | Features of moderate/low potential but fully inspected in optimal period; no evidence of bats. |
| T19 | Sycamore | 3 x bat boxes | Low/ moderate | NO | Features of moderate/low potential but fully inspected in optimal period; no evidence of bats. |

Dusk Emergence and Pre-dawn Re-entry Surveys

5.1.4 Eight of the 19 trees with potential for roosting bats could not be fully inspected and were therefore subject to further survey work in the form of dusk emergence and pre-dawn re-entry surveys between June and July 2017.

5.1.5 In summary, a single Common Pipistrelle was recorded entering tree T6 at 39 minutes before sunrise during the pre-dawn re-entry survey on the morning of 27th June 2017. No bats were recorded entering/leaving any of the other seven trees surveyed.

5.1.6 Other activity recorded during the dusk emergence and pre-dawn surveys was largely attributed to foraging Common Pipistrelle. Noctule *Nyctalus noctula*, Myotis *Myotis* sp., long-eared bat *Plecotus* sp. and Lesser Horseshoe Bat *Rhinolophus hipposideros* were also recorded; Noctule occasionally, and the other bat species in very low numbers.

Activity Surveys (foraging/commuting)

5.1.7 The hedgerows, trees, grassland and scrub offer potential opportunities for foraging and commuting bats on-site. As such, dusk bat activity surveys were undertaken at the site between April and August 2017.

5.1.8 **Manual walked transect surveys.** During the dusk surveys in 2017, a total of 363 bat calls were recorded; Common Pipistrelle was the most commonly recorded species, accounting for 70% of all registrations. Soprano Pipistrelle *Pipistrellus pygmaeus* and Myotis sp. were recorded to a lesser extent, accounting for 9% and 8% respectively. Low numbers of Noctule, Serotine *Eptesicus serotinus* and long-eared bat were also recorded, accounting for a total of 8% of registrations. The remaining registrations were not identified.

5.1.9 During the walked transects, the highest levels of bat activity were recorded along the northern and western boundaries of the site, with foraging passes occurring along hedgerow H1. Very little activity was recorded along the southern and eastern boundaries.

5.1.10 **Remote Detector Surveys.** The results of the automated static bat surveys are summarised in table 5.2. below. In summary, a total of 8,844 bat calls were recorded from the static detectors. 73.9% of registrations can be attributed to Common Pipistrelle with lower numbers of Soprano Pipistrelle, Noctule and *Myotis* sp. (7.2%, 6.7% and 5.0% respectively). Serotine, Brown Long-eared Bat and Lesser Horseshoe Bat accounted for a total 1.6% of registrations. The remaining bat calls could not be identified.

5.1.11 The highest level of activity was recorded at Location 1 (see Plan 5487/ECO2), along the western boundary of the site, where 3,198 calls were recorded. The next highest level of activity was recorded along hedgerow H1 where Locations 2 and 3 (2,465 and 2,293 registrations respectively) were positioned. A comparatively low level of activity was recorded at Location 4, along the eastern boundary, with 888 calls recorded.

**Table 5.2. Automated static bat survey summary**

| Species | Static Detector Location | | | | Number of Registrations | Percentage of Total |
|---|---|---|---|---|---|---|
| | Location 1 | Location 2 | Location 3 | Location 4 | | |
| Common Pipistrelle | 2,341 | 1,818 | 1,704 | 674 | **6,537** | **73.9** |
| Soprano Pipistrelle | 304 | 202 | 121 | 13 | **640** | **7.2** |
| Noctule | 167 | 146 | 149 | 131 | **593** | **6.7** |
| Myotis | 166 | 123 | 132 | 22 | **443** | **5.0** |
| Serotine | 22 | 24 | 12 | 3 | **61** | **0.7** |
| Long-eared | 22 | 16 | 12 | 0 | **50** | **0.6** |
| Lesser Horseshoe | 20 | 2 | 7 | 0 | **29** | **0.3** |
| Not Identifiable | 156 | 134 | 156 | 45 | **491** | **5.6** |
| **Total** | **3,198** | **2,465** | **2,293** | **888** | **8,844** | **100** |

Update Ground Level Roost Assessment and Further Surveys

5.1.12 An update ground level roost assessment of trees at the site was conducted in April 2020. Only two notable changes were recorded since the bat survey work undertaken in 2017:

Tree T12 has been subject to management with a number of limbs removed, and tree T14 has fallen over, such that the suitability of both trees to support roosting bats has reduced. The suitability of all other trees in regard to roosting bats is as recorded in 2017. Accordingly, given no significant changes have occurred at the site which would have increased roosting potential, or foraging or commuting activity, update survey work at this time is unlikely to yield results which would be significantly different to those previously obtained.

**Evaluation and Assessment of Likely Effects**

Roosting

5.1.13 A Common Pipistrelle roost was confirmed within tree T6 (see Plan 5487/ECO2) during the dusk emergence and pre-dawn surveys undertaken between June and July 2017. Common Pipistrelle is the most common bat species in the UK[24], widely distributed and adaptable to different environments. A roost for an individual bat of a common species is classified under standard guidance[25] to be of low conservation significance. This roost is fully retained under the proposals. Notwithstanding the relatively light tolerant nature of the species[26], the location of the retained bat roost under the proposals is such that it sits within informal green space and accordingly lighting of the roost entrance is avoided to ensure its long-term functional suitability for roosting bats is conserved. No other bat roosts have been recorded within the site. As such, subject to the implementation of the recommendations outlined at Chapter 6 below in relation to lighting, it is considered that roosting bats will be fully safeguarded under the proposals in accordance with relevant adopted local plan policies, and policy HD4 of the emerging Cheltenham Plan which seeks to protect key biodiversity assets. In the event that any trees with bat potential require felling/pruning to facilitate the proposals, further mitigation measures are outlined at Chapter 6.

Foraging and Commuting

5.1.14 The most abundant bat species recorded at the site were Common Pipistrelle and Soprano Pipistrelle which are the most common bats in the UK. They have a wide distribution and are able to utilise a wide range of habitat types. Soprano Pipistrelle is a Priority Species and although it was recorded at the site, it was not present in numbers that would suggest the site is of elevated value for this species.

5.1.15 Species of Myotis were also recorded in the site but in much lower numbers. The distribution and habitat requirements of Myotis are variable and very much dependent on the species. The lack of large waterbodies within the site limits its foraging value for a number of Myotis species such as Daubenton's which feed close to the surface of water.

5.1.16 Noctule was recorded at the site during the activity surveys. This species is relatively common in the UK, favouring habitats such as deciduous woodland, parkland, pasture and rivers.

5.1.17 A low number of Serotine, which are a less common species restricted to southern England and South Wales, were recorded at the site. This species is able to exploit a wide range of habitats and the site is not considered to be of elevated value for this species.

5.1.18 43 registrations of Lesser Horseshoe Bat were recorded during the remote detector surveys. This species is rare in the UK and its distribution is limited to western England, western

[24] Bat Conservation Trust: https://cdn.bats.org.uk/pdf/About%20Bats/commonpipistrelle_11.02.13.pdf?mtime=20181101151257
[25] Mitchell-Jones, A.J. (2004) English Nature: Bat Mitigation Guidelines
[26] Institute of Lighting Professionals (2018) Guidance Note 08/18: Bats and artificial lighting in the UK

Ireland and Wales. Lesser Horseshoe Bats favour deciduous woodland and wetlands for foraging and the site is likely to offer only limited opportunities for this species. This species was recorded in low numbers in the early hours of the morning and it is therefore likely that the site does not form part of an important commuting route for this species and is not of elevated value for foraging.

5.1.19 A similarly low number of long-eared bats were recorded at the site and, whilst it is difficult to distinguish between the calls of Brown Long-eared Bats and Grey Long-eared Bats, it is highly likely that the calls recorded at the site came from Brown Long-eared Bats. Brown Long-eared Bats are one of the most common bats in the UK and they will forage in a range of habitats including parkland and gardens in towns and cities.

5.1.20 Overall, nearly three quarters of the total number of bats recorded at the site can be attributed to Common Pipistrelle, the UK's most common bat species. As discussed above, the remaining species recorded at the site vary in distribution and rarity, however the low number of registrations recorded from these species indicates that the site is unlikely to be of conservation significance for these species.

5.1.21 The site affords foraging/commuting habitat for bats in the form of hedgerows, trees, grassland and scrub. ~1.7ha of the grassland and the majority of the areas of scrub, and sections of the hedgerows, will be lost under the proposals reducing existing foraging opportunities. However, ~1.3ha of retained green space in the east and south of the site will be enhanced including through the creation of a new pond which will encourage new invertebrates to the site, diversifying the foraging opportunities for bats. The majority of mature trees, associated with which would be an abundance of invertebrates, will also be retained under the proposals continuing to provide a foraging resource for bats. Further foraging opportunities will also be provided by the substantial wooded belt to be planted on the eastern edge of the development.

5.1.22 The proposed access road passes through hedgerows H1 and H2, reducing connectivity along these features. However, the retention of trees/vegetation along the northern, eastern and western boundaries, in addition to bolstering these boundaries with new planting, will maintain connectivity around the site (see Plan 5487/ECO4). In addition, the wooded belt on the eastern edge of the development will provide further connectivity through the site.

5.1.23 Accordingly, subject to the implementation of the recommendations outlined at Chapter 6 below, including a sensitive lighting strategy, it is considered that the conservation status of local bat populations will be fully safeguarded under the scheme and therefore this key biodiversity asset will be protected under the proposals in accordance with policy HD4 of the emerging Cheltenham Plan, and relevant adopted local plan policies.

## 5.2 Badger

5.2.1 Badgers are dealt with separately in Appendix 5487/3, which is a confidential appendix available by request to legitimate parties.

## 5.3 Other Mammals

5.3.1 **Legislation.** A number of other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (e.g. under the Wild Mammals (Protection) Act 1996). In addition, a number of these mammal species are S41 Priority Species and should be assessed as important ecological features.

5.3.2 **Background Records.** No specific records of other mammals from within the site were returned from the desktop study. Two records of Hedgehog *Erinaceus europaeus* (Priority Species) were returned from within the search area around the site, the closest of which is located approximately 40m north of the site dated 2016.

5.3.3 **Survey Results and Evaluation.** No evidence of any other protected, rare or notable mammal species was recorded within the site. Other mammal species likely to utilise the site, such as Fox *Vulpes vulpes*, remain common in both a local and national context, and as mentioned above do not receive specific legislative protection in a development context. As such, these species are not a material planning consideration and the loss of potential opportunities for these species to the proposals is of negligible significance. However, it is recommended that precautionary safeguards are put in place to minimise the risk of harm to wild mammals, including Hedgehogs, in the event they are present on-site during construction, as detailed in Chapter 6 below.

## 5.4 Amphibians

5.4.1 **Legislation.** All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). Great Crested Newt is protected under the Act and is also classed as a European Protected Species under the Conservation of Habitats and Species Regulations 2017. As such, both Great Crested Newt and habitats utilised by this species are afforded protection (see Appendix 5487/2 for detailed provisions). Great Crested Newt is also a S41 Priority Species, as are Common Toad *Bufo bufo*, Natterjack Toad *Epidalea calamita*, and Pool Frog *Pelophylax lessonae*. As such, these species should be assessed as important ecological features.

5.4.2 **Background Records.** A single record of Smooth Newt *Lissotriton vulgaris* was returned from within the site by the GCER, dated 2017. No specific records of Great Crested Newt or any other amphibians were returned from the desktop study. The third-party consultancy has previously stated that an unidentified newt was recorded in 2006 approximately 540m northwest of the site, although this record was not identified within a review of the background information. Regardless, given the separation between the record and the site and barriers to migration in the form of built development, even if the record related to Great Crested Newt it would have little relevance on whether this species utilises the site.

5.4.3 **Survey Results and Evaluation.** The terrestrial habitat on-site provides some foraging and sheltering opportunities for amphibians, including Great Crested Newt, particularly the hedgerows, scrub and tall ruderal. In addition, as discussed at Chapter 4 previously, a single ephemeral pond is present on the northern boundary of the site. However, the pond is more accurately described as a shallow depression which holds water at times of heavy rainfall, and a Habitat Suitability Index survey assessment in February 2017, and repeated again in April 2020, concluded the pond is of 'poor' suitability for Great Crested Newts. Accordingly, the pond is considered unlikely to be utilised by Great Crested Newts.

5.4.4 There are a further two ponds within the wider local area beyond 250m of the site which have limited connectivity to the site, one of which was found to be dry and the other vegetated such that there was no standing water. These ponds are therefore considered to be unsuitable for amphibians breeding. As such, despite the site containing suitable terrestrial habitat for amphibians, the isolation from any suitable breeding habitat makes it unlikely that amphibians are present on-site. Furthermore, the data search did not return any confirmed records of Great Crested Newts within 1km of the site. Overall, it is considered unlikely that the proposals will have a significant impact on protected amphibians.

## 5.5 Reptiles

5.5.1 **Legislation**. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which protects individuals against intentional killing or injury. Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* receive additional protection under the Conservation of Habitats and Species Regulations 2017; refer to Appendix 5487/2 for detailed provisions. All six reptile species are also S41 Priority Species. As such, all reptile species should be assessed as important ecological features.

5.5.2 **Background Records.** Information returned from the GCER includes two record of Grass Snake *Natrix natrix*, a single record of Adder *Vpera berus*, and a single record of Slow-worm *Anguis fragilis*. The closest record for Slow-worm, is dated 2016, and appears to originate from the curtilage of 1 Oakhurst Rise. The record for Adder is considered to be a result of misidentification, likely of Grass Snake for which there are other records in the local area, and given typical habitat for this species (heathland, moorland and open woodland, etc.) are not present in the site. The closest record of Grass Snake is dated 2015 and is located approximately 75m north of the site.

5.5.3 **Survey Results and Evaluation.** The grassland, hedgerows, tall ruderal species and scrub present on-site provides suitable habitat for reptiles to forage, bask and shelter. However, the site is isolated to some extent from other suitable habitat due to existing surrounding development. In addition, the grassland is understood to have been subject to regular mowing until 2017 reducing the suitability of the site for reptiles, such that whilst a more relaxed management regime is in place it is unlikely reptile have recolonised to the extent that a significant population is present. Nonetheless, to determine the presence/likely absence of reptiles, and population size if present, specific survey work for reptiles was conducted between July and August 2019.

5.5.4 The results of the survey work are set out in Table 5.3 below, and in summary a peak count of a single adult Slow-worm was recorded during 5 of the 7 survey visits. Grass Snake was not recorded on any survey visit, but a single adult was recorded during the set-up of the exercise. In accordance with best practice guidelines, with the peak count of both species for adults being one, a low population of Grass Snake and Slow-worm are considered to be present. Areas of the grassland and sections of hedgerow are to be lost under the proposals. As such, measures are recommended at Chapter 6 to safeguard reptiles. The proposals will result in the overall reduction of suitable reptile habitat; however, a suite of measures will be employed at the site for the benefit of reptiles: The quality of the retained habitat will be increased through the creation of a waterbody that holds standing water year-round and construction of wood piles to provide a varied and enhanced foraging resource for reptiles. Furthermore, the construction of buried log piles will provide over-wintering shelter, whilst connectivity through the site will be maintained by green open space and any accessible gardens. Importantly, the introduction of a more ecologically-led management regime for areas of wildflower grassland and fringe grassland habitats will benefit reptiles.

5.5.5 Subject to the implementation of appropriate mitigation/compensation measures, such as those set out herein, it is considered the local population status of reptiles will be conserved under the proposals and benefits brought forward for the species group such that this key biodiversity asset will be protected under the proposals in accordance with relevant adopted local plan policies and policy HD4 of the emerging Cheltenham Plan.

**Table 5.3. Reptile Survey Results**

| Survey Visit | Survey Date | Slow-worm | | | Grass Snake | | | Other | | | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | M | F | Ju | M | F | Ju | M | F | Ju | |
| Set-up | 11/07/2019 | | | | | 1 | | | | | Recorded along the eastern site boundary |
| 1 | 18/07/2019 | | | | | | | | | | |
| 2 | 22/07/2019 | | 1 | | | | | | | | |
| 3 | 24/07/2019 | | | | | | | | | | |
| 4 | 26/07/2019 | | 1 | | | | | | | | |
| 5 | 29/07/2019 | 1 | | 3 | | | | | | | |
| 6 | 31/07/2019 | | 1 | 2 | | | | | | | |
| 7 | 02/08/2019 | | 1 | 3 | | | | | | | Light mist at time of day |

M-Male, F-Female, Ju-Juvenile

## 5.6 Birds

5.6.1 **Legislation.** All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests, whilst being built or in use, cannot be taken, damaged or destroyed. Species included on Schedule 1 of the Act receive greater protection and are subject to special penalties (see Appendix 5487/2 for detailed provisions).

5.6.2 **Conservation Status.** The conservation importance of British bird species is categorised based on a number of criteria including the level of threat to a species' population status[27]. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (>50% over the past 25 years). A number of birds are also S41 Priority Species. Red and Amber listed species and priority species should be assessed as important ecological features.

5.6.3 **Background Records.** Information from the data search included records for several bird species within or in the vicinity of the site including the Red Listed species Starling *Sturnus vulgaris*, House Sparrow *Passer domesticus,* Redwing *Turdus iliacus*, Fieldfare *Turdus pilaris* and Song Thrush *Turdus philomelos*. A single record of the Red Listed species Lesser Spotted Woodpecker *Dryobates minor* originates from within the site itself, dated 2013, although the accuracy of this record is not known (as to the untrained eye the species can be confused with the common Great Spotted Woodpecker to which the majority of the records relate). During survey work undertaken by the third-party consultancy, several bird species were recorded at the site: Blackbird *Turdus merula*, Carrion Crow *Corvus corone*, Wren *Troglodytes troglodytes*, House Sparrow, House Martin *Delichon urbicum*, Collared Dove *Streptopelia decaocto*, Wood Pigeon *Columbda palumbus*, Magpie *Pica pica*, Raven *Corvus corax* and Chiffchaff *Phylloscopus collybita*.

5.6.4 **Survey Results and Evaluation.** Several species of bird were observed during survey work undertaken by the third-party consultancy, including the Red Listed species House Sparrow and Lesser Spotted Woodpecker, which are also Priority species, and the Amber listed species House Martin. Other birds which were recorded at the site are relatively common and are not listed as having any special conservation status.

[27] Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *'Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man'* British Birds *108*, pp.708-746

5.6.5 The trees, hedgerows and scrub on-site provide foraging and nesting opportunities for birds, including House Sparrow and Lesser Spotted Woodpecker. The grassland supports a low diversity of common plant species which, in turn, are likely to support limited assemblages of invertebrates. The grassland, which dominates the site, is therefore of limited value for foraging birds. The management regime of the semi-improved grassland, in combination its use for recreational/community activities reduces the suitability of the site for ground nesting birds.

5.6.6 The wider local area surrounding the site contains abundant similar nesting and foraging opportunities for birds, with hedgerows, trees and grassland all well represented. Furthermore, the buildings within the residential areas to the north, south, west and, to some extent, the east of the site provide additional nesting opportunities, particularly for House Sparrow and House Martin which are often associated with urbanised environments and are known to nest in holes/crevices in buildings. As such, there is no evidence to suggest the site is of elevated value at a local level for birds.

5.6.7 Nonetheless, the removal/pruning of sections of hedgerow, trees and scrub to facilitate the proposals could potentially affect any nesting birds that may be present at the time of works. Accordingly, a number of safeguards in respect of nesting birds are proposed, as detailed in Chapter 6 below. In the long-term, new nesting opportunities will be available for birds as described in Chapter 6. Accordingly, it is considered this key biodiversity asset will be protected under the proposals in accordance with policy HD4 of the emerging Cheltenham Plan, and relevant adopted local plan policies.

## 5.7 Invertebrates

5.7.1 **Legislation.** A number of invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, Large Blue Butterfly *Maculinea arion*, Fisher's Estuarine Moth *Gortyna borelii lunata* and Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus* receive protection under the Conservation of Habitats and Species Regulations 2017; refer to Appendix 5487/2 for detailed provisions. A number of invertebrates are also S41 Priority Species. Where such species are present, they should be assessed as important ecological features.

5.7.2 **Background Records.** No records of any protected invertebrates were returned from the desktop study.

5.7.3 **Survey Results and Evaluation.** A good diversity of invertebrates would be associated with the veteran trees, although the site has limited connectivity with semi-natural habitats in the wider local area and in any event the veteran trees are retained under the proposals. The site is dominated by semi-improved grassland, which is likely to support only a limited diversity of common invertebrates. The site has occasional patches of scrub and tall ruderal but otherwise contains relatively few micro-habitats that would typically indicate elevated potential for invertebrates[28], such as a variable topography with areas of vertical exposed soil, areas of species-rich semi-natural vegetation, variable vegetation structure with frequent patches of tussocks combined with short turf, free-draining light soils, walls with friable mortar, or fibrous dung. Accordingly, given the habitat composition of the site and lack of adjacent sites designated for significant invertebrate interest, it is considered unlikely that the proposals will result in significant harm to any protected, rare or notable invertebrate populations.

[28] Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

## 5.8 Summary

5.8.1 On the basis of the above, a summary of the evaluation of fauna is provided below. Those species listed within the table are considered `important ecological features`/`key biodiversity assets`.

**Table 5.4.** Evaluation summary of fauna forming important ecological features.

| Species / Group | Supported by or associated with the site | Level of Importance |
|---|---|---|
| Bats – Roosting | Confirmed presence on site | Local |
| Bats – Foraging / Commuting | Confirmed presence on site | Local to District |
| Badger | See Appendix 5487/3 | |
| Reptiles | Confirmed presence on site | Local |
| Birds | Confirmed presence on site | Local |

5.8.2 Great Crested Newts are considered unlikely to utilise the site, and therefore are not included in Table 5.4 above as an `important ecological feature`/`key biodiversity asset`. Other fauna supported by the site include non-priority species of mammals, amphibians and invertebrates. However, these species do not form `important ecological features`/`key biodiversity assets`.

# 6 Mitigation Measures and Biodiversity Net Gains

## 6.1 Mitigation

6.1.1 Based on the habitats, ecological features and associated fauna identified within/adjacent to the site, it is proposed that the following mitigation measures (**MM1 – 9**) are implemented under the proposals. Further, detailed mitigation strategies or method statements can be secured via suitably-worded planning conditions, as recommended by relevant best practice guidance (BS 42020:2013).

Hedgerows and Trees

6.1.2 **MM1 – Hedgerow and Tree Protection.** All hedgerows and trees to be retained within the proposed development shall be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees/hedgerows.

6.1.3 **MM2 – Veteran Trees.** Retained veteran trees are to be buffered from development through the retention of semi-natural habitat. This buffer should be at least 15 times the diameter of the trunk or 5m beyond the edge of the crown, depending on which is larger, or as advised by the Arboricultural Consultant.

Bats

6.1.4 **MM3 – Update Preliminary Roost Assessment.** Should any considerable time (e.g. >2 years) elapse between the updated preliminary roost assessment (April 2020) and any development works, trees that would be affected by the proposals will need to be subject to an update preliminary roost assessment.

6.1.5 **MM4 – Felling of trees.** Trees with moderate (or higher) potential for roosting bats that require felling to facilitate the proposals should be inspected or subject to a dusk or dawn survey immediately prior to felling in order to confirm that roosting bats are absent.

6.1.6 Trees with low suitability for roosting bats, or those with moderate suitability confirmed not to support a bat roost following an update survey (see above), that require removal to facilitate the proposals should be felled in a precautionary manner in accordance with best practice guidance to safeguard bats. This will involve using a 'soft-felling' technique, which encompasses slowly lowering and cushioning any limbs and tree sections that exhibit features (such as peeling bark, split limbs, etc.) considered potentially suitable for bats, thereby reducing the impact on these tree sections as they are brought to the ground. Where practicable, the soft-felled limbs and trunks that exhibit features should be left *in situ* for 24 hours to allow any bats that may be present to escape.

6.1.7 **MM5 – Re-installation of Retained Bat Boxes.** A number of trees currently have bat boxes installed on them. Should any of these trees require removal to facilitate the proposals, the bat boxes should be inspected by a suitably qualified ecologist to determine the presence/absence of bats and then reinstalled on suitably retained trees within the site as close to the current location as possible.

6.1.8 **MM6 – Sensitive Lighting.** Light-spill onto retained and newly created habitat, in particular the retained hedgerows, tree T6 (containing a confirmed bat roost), and the retained green space in the east and south of the site, will be minimised in accordance with good practice

guidance[29] to reduce potential impacts on light-sensitive bats (and other nocturnal fauna). This may be achieved through the implementation of a sensitively designed lighting strategy, with consideration given to the following key factors:

- **Light exclusion/reduction zones –** Lighting along the site boundaries, and ideally along the central hedgerow, should be excluded if feasible or at least minimised to avoid disturbance to commuting bats. It is advised an ecologist's input be sought when the lighting strategy is being designed.
- **Variable Lighting Regimes –** VLRs can be employed, which involve switching off/dimming lights for periods during the night, for example when human activity is generally low (e.g. 12.30 – 5.30am). The use of VLRs may be particularly beneficial during the active bat season (April to October). Motion sensors can also be used along pedestrian/ cycle routes to limit the time lighting is operational;
- **Light barriers –** new planting (e.g. hedgerows and trees) or fences, walls and buildings can be strategically positioned to reduce light spill;
- **Spacing and height of lighting units –** increasing spacing between lighting units will minimise the area illuminated and allow bats to fly in the dark refuges between lights. Reducing the height of lighting will also help decrease the volume of illuminated space and give bats a chance to fly over lighting units (providing the light does not spill above the vertical plane). Low level lighting options should be considered for any parking areas and pedestrian / cycle routes, e.g. bollard lighting, handrail lighting or LED footpath lighting;
- **Light intensity –** light intensity (i.e. lux levels) should be kept as low as possible to reduce the overall amount and spread of illumination. The type of light should also be considered, for example lights with high ultraviolet content (e.g. metal halide or mercury lights) should be avoided or fitted with UV filters; and
- **Directionality –** to avoid light spill lighting should be directed only to where it is needed. Particular attention should be paid to avoid the upward spread of light so as to minimise trespass and sky glow.

Other Wild Mammals

6.1.9 **MM7 – Wild Mammal Construction Safeguards.** In order to safeguard wild mammals (including Badger) should they enter the site during construction works, the following measures will be implemented:

- Any trenches or deep pits within the site that are to be left open overnight will be provided with a means of escape should a wild mammal enter. This could simply be in the form of a roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water;
- Any temporarily exposed open pipes should be blanked off at the end of each working day so as to prevent wild mammals gaining access as may happen when contractors are off-site;
- Any trenches/pits will be inspected each morning to ensure no wild mammals have become trapped overnight. Should a Badger become trapped in a trench it will likely attempt to dig itself into the side of the trench, forming a temporary sett. Should a

[29] Stone, E.L. (2013) '*Bats and lighting: Overview of current evidence and mitigation guidance*.' ILP (2011) '*Guidance notes for the reduction of obtrusive light*' Institution of Lighting Professionals, GN01:2011; and Bat Conservation Trust (2014) '*Artificial Lighting and Wildlife – Interim Guidance: Recommendations to help minimise the impact of artificial lighting*'.

trapped Badger be encountered a suitably qualified ecologist will be contacted immediately for further advice;

- The storage of topsoil or other 'soft' building materials in the site will be given careful consideration. Badgers will readily adopt such mounds as setts. So as to avoid the adoption of any mounds, these will be kept to a minimum and any essential mounds subject to daily inspections with consideration given to temporarily fencing any such mounds to exclude Badgers;
- The storage of any chemicals at the site will be contained in such a way that they cannot be accessed or knocked over by any roaming wild mammals;
- Fires will only be lit in secure compounds and not allowed to remain lit during the night; and
- Unsecured food and litter will not be left within the working area overnight.

Reptiles and Amphibians

6.1.10 **MM8 – Habitat Manipulation/Destructive Search.** Small populations of Grass Snake and Slow-worm have been recorded at the site. To minimise the risk of harm to reptiles, and amphibians in the unlikely event that they are present on-site, a habitat manipulation/destructive search is proposed. Should the grassland have been allowed to develop a tall sward height prior to the commencement of works a habitat manipulation exercise will be undertaken. The habitat manipulation will involve cutting the grassland within the development footprint to a short height (initially to ~15cm and then to ~5cm) so as to encourage reptiles and amphibians to disperse to suitable areas of retained/nearby habitat, whilst also allowing for a fingertip search of the area. This exercise should be carried out under the supervision of a competent ecologist during the active reptile and amphibian season where practicable (generally March/April to September/October, depending on prevailing weather). Any potential refuge features, e.g. piles of rubble, heavy logs, brash piles, will be fingertip-searched by an ecologist prior to being carefully disassembled/destructively searched. Any reptiles and amphibians encountered during the destructive search will be carefully rescued by the supervising ecologist and relocated to suitable nearby habitat.

Nesting Birds

6.1.11 **MM9 – Timing of Works.** To avoid a potential offence under the relevant legislation, no clearance of suitable vegetation should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

## 6.2 Biodiversity Net Gains

6.2.1 The National Planning Policy Framework (NPPF) encourages new developments to maximise the opportunities for biodiversity through incorporation of enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of national conservation priorities and the local Biodiversity Action Plan (BAP). The recommendations and enhancements summarised below are considered

appropriate given the context of the site and the scale and nature of the proposals. Through implementation of the following ecological enhancements (**EE1** – **EE8**), and as shown on Plan 5487/ECO4, the opportunity exists for the proposals to deliver a number of biodiversity net gains at the site.

Bats

6.2.2 **EE1 – New Planting.** It is recommended that where practicable, new planting within the site be comprised of native species of local provenance, including trees and shrubs appropriate to the local area. Suitable species for inclusion within the planting could include native trees such as Birch *Betula pendula* and Field Maple, whilst native shrub species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel *Corylus avellana* and Elder. Where non-native species are proposed, these should include species of value to wildlife, such as varieties listed on the RHS' 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

6.2.3 **EE2 – Wildflower Grassland.** It is recommended that areas of wildflower grassland are created within the site such that, in combination with new native landscape planting, opportunities for biodiversity will be maximised under the proposals. Consideration should be given to the laying of wildflower turfs where ground is disturbed and to be re-instated, comprising locally appropriate native species, to establish wildflower grassland. This would ensure rapid establishment of these habitats, and reduce the timeframe for delivering the range of ecological benefits that are proposed.

6.2.4 **EE3 – Wetland Features.** To compensate for the loss of the ephemeral shallow depression (see P1 on plan 5487/ECO2), the proposals include the creation of new wetland habitat in the form of a pond which will provide enhanced aquatic habitat at the site, thereby providing additional ecological interest while also helping to attenuate surface water run-off. The pond will cover an area of ~180m$^2$, and have two deepened pools (each capable of achieving a water depth of 0.7m) connected by an aquatic bench to provide two constant areas of permanent water for aquatic species. The sides of the pond will have varied gradients between 1 in 3 and 1 in 10, the more shallow banks providing a wider draw down zone which can support high floristic diversity. In addition, this enhanced aquatic habitat will provide opportunities for a range of amphibian and invertebrate species, along with foraging habitat and water supply for mammals and birds.

Bats

6.2.5 **EE4 – Bat Boxes.** A number of bat boxes will be incorporated within the proposed development (see Appendix 5487/4 for specifications). The provision of bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle, a national Priority Species. So as to maximise their potential use, the bat boxes should ideally be situated on suitable retained trees erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing a south-east, south or south-westerly direction. In addition, where architectural design allows, a number of integrated bat boxes/roost features should be incorporated into a proportion of the new build. The precise number and locations of boxes/roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved, although indicative locations are shown on Plan 5487/ECO4.

Birds

6.2.6 **EE5 – Bird Boxes.** A number of bird nesting boxes are to be incorporated within the proposed development (see Appendix 5487/5 for specifications), thereby increasing nesting opportunities for birds at the site. Boxes suitable for the Priority Species House Sparrow should be included within the selection, as these were recorded at the site during survey work by the third-party consultancy. Ideally, the bird boxes will have greater potential for use if sited on suitable, retained trees, situated as high up as possible. In addition, where architectural design allows, a number of integrated bird boxes should be incorporated into a proportion of the new build. The precise number and locations of boxes should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved, although indicative locations are shown on Plan 5487/ECO4.

Reptiles and Amphibians

6.2.7 **EE6 – Buried Log Piles.** A proportion of any deadwood arising from vegetation clearance works could be retained and partially buried in areas of new planting, adjacent to the new pond or areas of wildflower grassland within the retained/proposed areas of green space. These partially buried log piles (see specifications at Appendix 5487/6) will provide shelter and hibernation opportunities for reptiles and amphibians, as well as habitat for invertebrates, including saproxylic insects which require deadwood to feed on.

Invertebrates

6.2.8 **EE7 – Wood Piles.** A proportion of any deadwood arising from vegetation clearance works should be retained within the site in a number of wood piles (see specifications at Appendix 5487/7) located within areas of new planting or areas of wildflower grassland in order to provide potential habitat opportunities for invertebrate species, which in turn could provide a prey source for a range of other wildlife. In addition, the provision and management of new native landscape planting will likely provide additional opportunities for invertebrates at the site in the long term.

6.2.9 **EE8 – Nectar Source.** If areas of wildflower meadow are created, the mix should include various Bents *Agrostis* spp. and Hawkweeds (*Hieracium/Hypochaeris*), which will provide a larval food source and adult nectar source, respectively, for a range of invertebrates.

# 7 Conclusions

7.1 Aspect Ecology has carried out an Ecological Appraisal of the proposed development, informed by a review of survey work undertaken by a third-party consultancy at the site between 2016 and 2018, including a desktop study, Phase 1 habitat survey and a number of detailed protected species surveys, as well as update survey work undertaken by Aspect Ecology between 2018 and 2020.

7.2 No statutory or non-statutory nature conservation designations are present within or adjacent to the site, and none of the designations within the surrounding area are likely to be significantly adversely affected by the proposals.

7.3 The Phase 1 habitat survey, and subsequent detailed botanical surveys, has established that the site is dominated by habitats not considered to be of ecological importance, whilst the proposals have sought to retain those features identified to be of value. Where it has not been practicable to avoid loss of habitats, new habitat creation has been proposed to offset losses, in conjunction with the landscape proposals.

7.4 The habitats within the site support several protected species, including species protected under both national and European legislation. Accordingly, a number of mitigation measures have been proposed to minimise the risk of harm to protected species, with compensatory measures proposed, where appropriate, in order to maintain the conservation status of local populations.

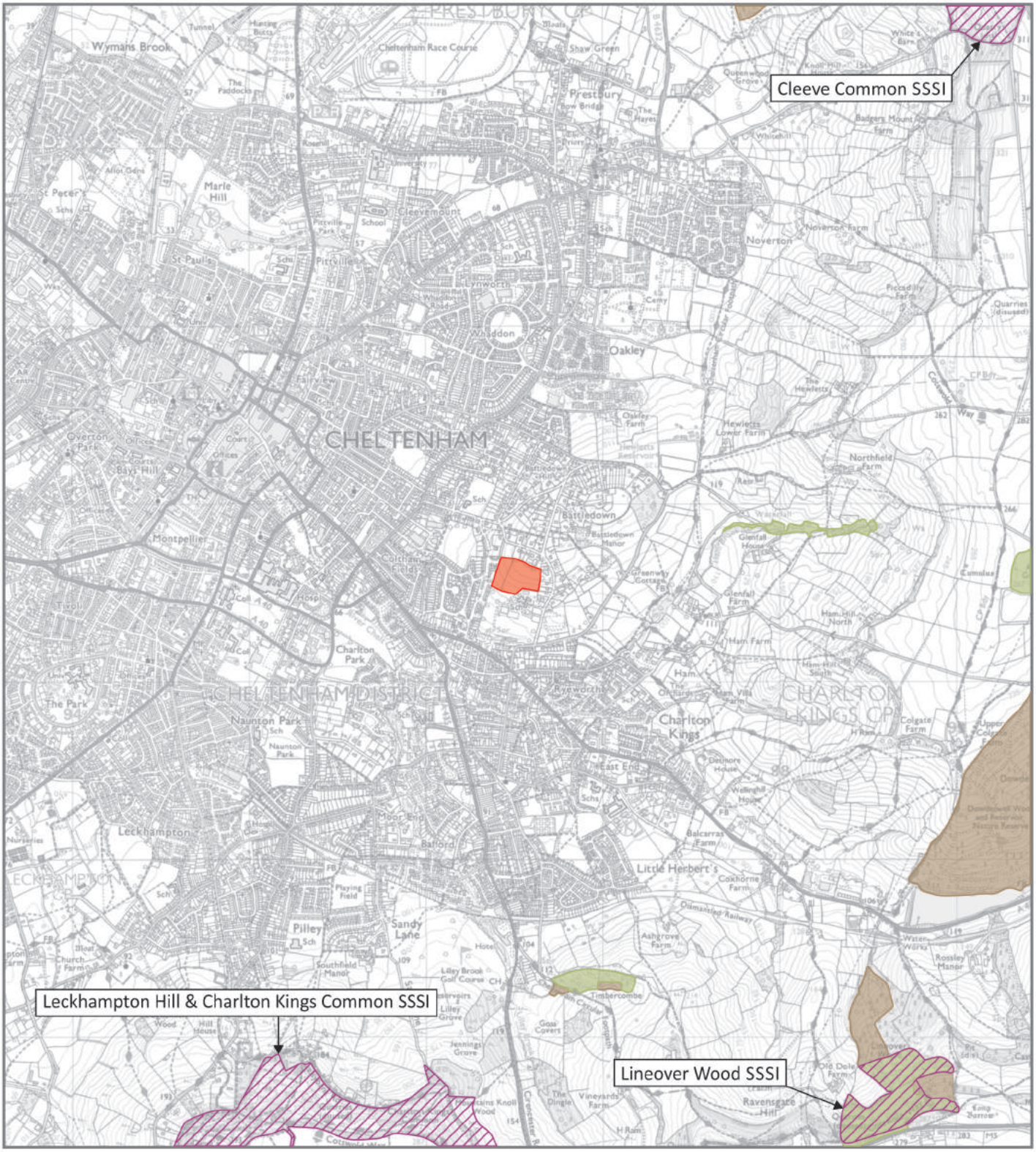
7.5 The proposals incorporate a more ecologically considered scheme than previously pursued under applications 17/00710/OUT and 18/02170/OUT, as demonstrated through: the greater retention of an ecologically important hedgerow, retention and buffer of veteran trees from development, an increase in green open space, new pond, the creation of areas of wildflower grassland, and the provision of features attractive to invertebrates and therefore also beneficial to their predators.

7.6 Overall, the `important ecological features`/`key biodiversity assets` identified within the site would largely be protected under the proposals. Where losses do occur, such as in regard to sections of hedgerows and mature trees, they are unavoidable and have been minimised through sensitive scheme design. Overall, on balance, the losses would be of minor ecological significance and compensated for within the landscaping strategy.

7.7 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the opportunity exists to provide a number of biodiversity net gains as part of the proposals. Overall, the proposals are considered to accord with relevant provisions of national planning policy, Cheltenham Borough Local Plan, policy SD9 of the Joint Core Strategy, and site-specific requirements of policy HD4 of the emerging Cheltenham Plan.

# Plan 5487/ECO1:

Site Location and Ecological Designations




Key:

- Site Location
- Site of Special Scientific Interest (SSSI)
- Ancient & Semi-Natural Woodland (ASW)
- Ancient Replanted Woodland (ARW)

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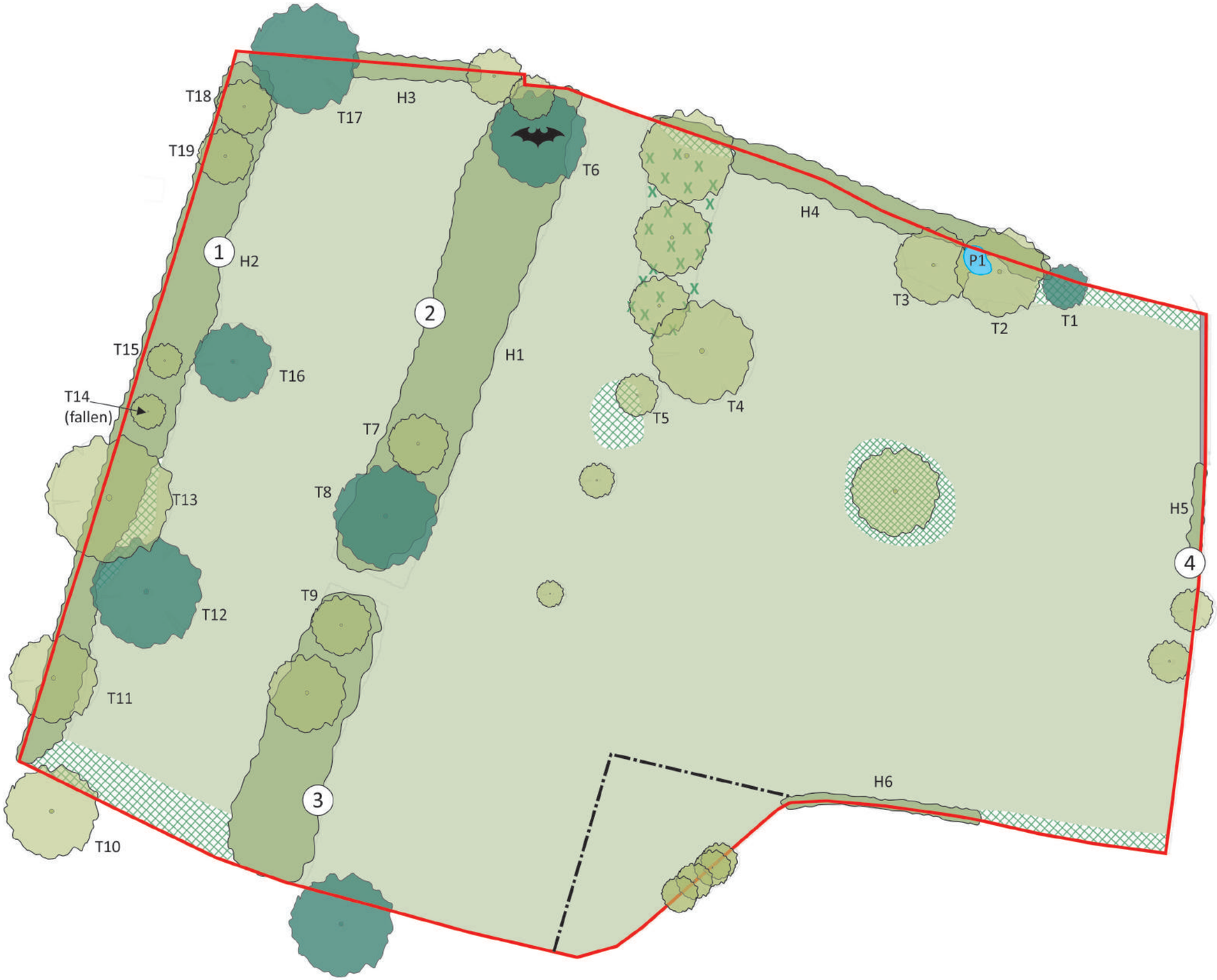
| | |
|---|---|
| Oakhurst Rise, Cheltenham | PROJECT |
| Site Location and Ecological Designations | TITLE |
| 5487/ECO1 | DRAWING NO. |
| - | REV. |
| April 2020 | DATE |

# Plan 5487/ECO2:

Habitats and Ecological Features




Key:

- Site Boundary
- Semi-improved Grassland
- Tree
- Veteran Tree (see Baseline Tree Survey prepared by FLAC, August 2018)
- Tree With Confirmed Bat Roost
- Hedgerow
- Dense Scrub
- Scattered Scrub
- Ephemeral Pond
- Wall
- Wooden Post & Wire Mesh Fence
- Static Bat Detector Locations

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Land Adjacent to Oakhurst Rise, Cheltenham — PROJECT

Habitats and Ecological Features — TITLE

5487/ECO2 — DRAWING NO.

\- — REV.

April 2020 — DATE

# Plan 5487/ECO3:

Reptile Refugia Locations and Survey Results 2019


Key:

- Site Boundary
- Semi-improved Grassland
- Tree
- Hedgerow
- Dense Scrub
- Scattered Scrub
- Ephemeral Pond
- Wall
- Reptile Transect & Number of Refugia
- Grass Snake (Adult) Sighting
- Slow-worm (Adult) Sighting
- Slow-worm (Juvenile) Sighting

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| | |
|---|---|
| Oakhurst Rise, Cheltenham | PROJECT |
| Refugia Locations and Reptile Survey Results 2019 | TITLE |
| 5487/ECO3 | DRAWING NO. |
| A | REV. |
| August 2019 | DATE |

# Plan 5487/ECO4:

Ecological Enhancements

Management of the existing tree resource including restocking (see Veteran Tree Framework Management Plan) to provide replacement tree specimens and sensitive management of mature trees to retain dead wood features; providing habitat opportunities for saproxylic invertebrates, and roosting bats.

Bat boxes integrated into the new build will provide new long-term roosting opportunities for bats, including Common Pipistrelle *Pipistrellus pipistrellus* and the Priority Species Soprano Pipsitrelle *Pipistrellus pygmaeus*.

Chemical applications e.g. herbicides or pesticides will be avoided, which will ensure the diversity of soil micro-organisms is maintained

New habitat creation and instigation of appropriate management, as well as faunal specific enhancements, will provide a net gain in sheltering, nesting, and roosting opportunities.

Soil to receive wildflower grassland to be lightly de-compacted and primed with a biologically activated extract to restore the soil micro-biology.

Bat and bird box boxes within the new build, and on trees, will provide a net gain in new roosting and nesting opportunities, including for Priority Species such as Starling.

A number of habitats of elevated value are located within the site boundary, including mature and veteran trees, and Priority Habitat hedgerows. These habitats are retained where possible.

The wildflower mix will include various Bents *Agrostis* spp. and Hawkweeds (*Hieracium/Hypochoeris*), which will provide a larval food source and adult nectar source, respectively, for the Priority Species Wall Butterfly.

Creation of new grassland habitats including species-rich wildflower areas providing a rich flowering resource for invertebrates, and swaths of long-sward grassland forming habitat for small mammals and reptiles.

Wildlife planting within the built development will include street tree planting, hedgerows and shrub beds, and herb planting with species selected to maximise their ecological functions, e.g. using RHS `Plants for Pollinators` guide, along frontages.

1SP Terraces will provide new nesting opportunities for the BTO Red List and Priority Species House Sparrow, a bird of conservation concern due to a decline in breeding population and range.

Retained and new habitats will benefit from the introduction of ecologically led management.

A proportion of gardens will incorporate features beneficial for bees and other invertebrates, including a year-round supply of nectar/pollen and a variety of nesting sites, complementing `natural` habitats for pollinators in urban environments.

Retained boundary vegetation providing corridors for commuting wildlife.

New landscape planting incorporating a proportion of native fruit and nut yielding species providing a seasonal foraging resource for a range of fauna, particularly Badgers.

Net gains in tree and shrub planting will, in the long-term, provide additional nesting opportunities for birds, such as the Priority Species Song Thrush.

Native tree and shrub planting will bolster boundary vegetation, providing more sheltered commuting corridors for a variety of fauna, whilst internal tree planting will encourage new commuting paths through the site particularly for bats.

Wood/log log piles will be created in dry, wet, open and shaded areas to provide habitat suitable for a variety of different species including the Gloucestershire BAP species Stag Beetle *Lucanus cervus*.

Wood/log piles will provide dead wood micro-habitats for bryophytes, lichens, fungi, and invertebrates; the latter contributing to the foraging potential of the site for a range of fauna.

The pond will hold water providing constant habitat for aquatic species, and incorporate shallow drawn-down zones; areas of high biodiversity due to seasonal changes in the water level.

Aquatic and marginal vegetation, with wet grassland, will provide new foraging opportunities for bats, birds, reptiles and amphibians.

Creation of a designated organic material composting area, in close proximity to the new pond, will provide an area suitable for Grass Snake *Natrix natrix* egg-laying.

Wood/log piles will increase the abundance of dead wood within the site, supporting saproxylic organisms which create new habitats in dead wood and provide direct ecosystem services through nutrient cycling, soil creation, and food for other animals.

These measures will be the subject of a conservation management plan so as to ensure their biodiversity value is secured in the long-term.

Key:

- Site Boundary

Landscaping

- Retained Trees
- New Tree Planting
- New Hedgerow Planting
- New Shrub Planting
- New Amenity Grassland
- New Wildflower Grassland
- New Pond

Fauna

*Bats*

- Schwegler 1FF
- Schwegler 1FR Bat Tubes
- Retained Commuting Corridors for bats
- Potential Commuting Corridors for bats

*Bird Boxes*

- Schwegler 1SP Sparrow Terrace
- Schwegler 3S
- Schwegler 1B
- Schwegler Swift Box
- Schwegler No.11 House Martin Nest

*Reptiles*

- Buried Log Pile

*Invertebrates*

- Wood Pile

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Land Adjacent to Oakhurst Rise, Cheltenham — PROJECT

Ecological Mitigation and Enhancements — TITLE

5487/ECO4 — DRAWING NO.

F — REV.

April 2020 — DATE

# Appendix 5487/1:

## Evaluation Methodology

# Evaluation Methodology

1. The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM) 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018)[1].

Importance of Ecological Features

2. Ecological features within the site/study area have been evaluated in terms of whether they qualify as 'important ecological features'. In this regard, CIEEM guidance states that *"it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable".*

3. Various characteristics contribute to the importance of ecological features, including:

- Naturalness;
- Animal or plant species, sub-species or varieties that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
- Ecosystems and their component parts, which provide the habitats required by important species, populations and/or assemblages;
- Endemic species or locally distinct sub-populations of a species;
- Habitat diversity;
- Habitat connectivity and/or synergistic associations;
- Habitats and species in decline;
- Rich assemblages of plants and animals;
- Large populations of species or concentrations of species considered uncommon or threatened in a wider context;
- Plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types, including examples of naturally species-poor communities; and
- Species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.

4. As an objective starting point for identifying important ecological features, European, national and local governments have identified sites, habitats and species which form a key focus for biodiversity conservation in the UK, supported by policy and legislation. These are summarised by CIEEM guidance as follows:

*Designated Sites*

- Statutory sites designated or classified under international conventions or European legislation, for example World Heritage Sites, Biosphere Reserves, Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA);

[1] CIEEM (2018) '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*', Chartered Institute of Ecology and Environmental Management, Winchester

- Statutory sites designated under national legislation, for example Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR);
- Locally designated wildlife sites, e.g. Local Wildlife Sites (LWS).

*Biodiversity Lists*

- Habitats and species of principal importance for the conservation of biodiversity in England and Wales (largely drawn from UK BAP priority habitats and priority species), often referred to simply as Priority Habitats / Species;
- Local BAP priority species and habitats.

*Red Listed, Rare, Legally Protected Species*

- Species of conservation concern, Red Data Book (RDB) species;
- Birds of Conservation Concern;
- Nationally rare and nationally scarce species;
- Legally protected species.

5. In addition to this list, other features may be considered to be of importance on the basis of local rarity, where they enable effective conservation of other important features, or play a key functional role in the landscape.

<u>Assigning Level of Importance</u>

6. The importance of an ecological feature should then be considered within a defined geographical context. Based on CIEEM guidance, the following frame of reference is used:

- International (European);
- National;
- Regional;
- County;
- District;
- Local (e.g. Parish or Neighbourhood);
- Site (not of importance beyond the immediate context of the site).

7. Features of 'local' importance are those considered to be below a district level of importance, but are considered to appreciably enrich the nature conservation resource or are of elevated importance beyond the context of the site.

8. Where features are identified as 'important' based on the list of key sites, habitats and species set out above, but are very limited in extent or quality (in terms of habitat resource or species population) and do not appreciably contribute to the biodiversity interest beyond the context of the site, they are considered to be of 'site' importance.

9. In terms of assigning the level of importance, the following considerations are relevant:

*Designated Sites*

10. For designated sites, importance should reflect the geographical context of the designation (e.g. SAC/SPA/Ramsar sites are designated at the international level whereas SSSIs are designated at the national level). Consideration should be given to multiple designations as appropriate (where an area is subject to differing levels of nature conservation designations).

*Habitats*

11. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, 'Guidelines for the selection of biological SSSIs' and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create the habitat is also an important consideration, for example in the case of ancient woodland.

12. Whether habitats are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Habitats of Principal Importance' or 'Priority Habitats', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

13. Habitat inventories (such as habitat mapping on the MAGIC database) or information relating to the status of particular habitats within a district, county or region can also assist in determining the appropriate scale at which a habitat is of importance.

*Species*

14. Deciding the importance of species populations should make use of existing criteria where available. For example, there are established criteria for defining nationally and internationally important populations of waterfowl. The scale within which importance is determined could also relate to a particular population, e.g. the breeding population of common toads within a suite of ponds or an otter population within a catchment.

15. When determining the importance of a species population, contextual information about distribution and abundance is fundamental, including trends based on historical records. For example, a species could be considered particularly important if it is rare and its population is in decline. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.

16. Whether species are listed as priorities for conservation at a national level in accordance with Sections 41 and 42 of the Natural Environment and Rural Communities Act (NERC) 2006, so called 'Species of Principal Importance' or 'Priority Species', or within regional or local Biodiversity Action Plans (BAPs) is also relevant, albeit the listing of a particular species under a BAP does not in itself imply any specific level of importance.

17. Species populations should also be considered in terms of the potential zone of influence of the proposals, i.e. if the entire species population within the site and surrounding area were to be affected by the proposed development, would this be of significance at a local, district, county or wider scale? This should also consider the foraging and territory ranges of individual species (e.g. bats roosting some distance from site may forage within site whereas other species such as invertebrates may be more sedentary).

# Appendix 5487/2:

Legislation Summary

# LEGISLATION SUMMARY

1. In England and Wales primary legislation is made by the UK Parliament, and in Scotland by the Scottish Parliament, in the form of Acts. The main piece of legislation relating to nature conservation in the UK is the Wildlife and Countryside Act 1981 (as amended).

2. Acts of Parliament confer powers on Ministers to make more detailed orders, rules or regulations by means of secondary legislation in the form of statutory instruments. Statutory instruments are used to provide the necessary detail that would be too complex to include in an Act itself[1]. The provisions of an Act of Parliament can also be enforced, amended or updated by secondary legislation.

3. In summary, the key pieces of legislation relating to nature conservation in the UK are:

    - Wildlife and Countryside Act 1981 (as amended)
    - Protection of Badgers Act 1992
    - Hedgerows Regulations 1997
    - Countryside and Rights of Way (CRoW) Act for England and Wales 2000
    - Natural Environment and Rural Communities Act 2006
    - Conservation of Habitats and Species Regulations 2017

4. A brief summary of the relevant legislation is provided below. The original Acts and instruments should be referred to for the full and most up to date text of the legislation.

5. **Wildlife and Countryside Act 1981 (as amended)**. The WCA Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) identified for their flora, fauna, geological or physiographical features. The Act contains strict measures for the protection and management of SSSIs.

6. The Act also refers to the treatment of UK wildlife including protected species listed under Schedules 1 (birds), 5 (mammals, herpetofauna, fish, invertebrates) and 8 (plants).

7. Under Section 1(1) of the Act, all wild birds are protected such that is an offence to intentionally:

    - Kill, injure or take any wild bird;
    - Take, damage or destroy the nest of any wild bird whilst in use* or being built;
    - Take or destroy an egg of any wild bird.

    * The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

8. Offences in respect of Schedule 1 birds are subject to special, i.e. higher, penalties. Schedule 1 birds also receive greater protection such that it is an offence to intentionally or recklessly:

    - Disturb any wild bird included in Schedule 1 while it is building a nest or while it is in, on or near a nest containing eggs or young;
    - Disturb dependent young of such a bird.

[1] http://www.parliament.uk/business/bills-and-legislation/secondary-legislation/statutory-instruments/

9. Under Section 9(1) of the Act, it is an offence to:

- Intentionally kill, injure or take any wild animal included in Schedule 5.

10. In addition, under Section 9(4) it is an offence to intentionally or recklessly:

- Obstruct access to, any structure or place which any wild animal included in Schedule 5 uses for shelter or protection; or
- Disturb any wild animal included in Schedule 5 while occupying a structure or place which it uses for that purpose.

11. Under Section 13(1) it is an offence:

- To intentionally pick, uproot or destroy any wild plant listed in Schedule 8; or
- Unless the authorised person, to intentionally uproot any wild plant not included in Schedule 8.

12. The Act also contains measures (S.14) for preventing the establishment of non-native species that may be detrimental to native wildlife, prohibiting the introduction into the wild of animals (releases or allows to escape) and plants (plants or causes to grow) listed under Schedule 9.

13. **Protection of Badgers Act 1992.** The Act aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. Under the Act it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat* a Badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett# (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

* the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence

\# A sett is defined as "*any structure or place which displays signs indicating current use by a Badger*". Natural England advice (June 2009) is that a sett is protected so long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger. Interference with a sett includes blocking tunnels or damaging the sett in any way

14. Licences can be obtained from the Statutory Nature Conservation Organisation (SNCO) for development activities that would otherwise be unlawful under the legislation, provided there is suitable justification. The SNCO for England is Natural England.

15. **Hedgerows Regulations 1997**. 'Important' hedgerows (as defined by the Regulations) are protected from removal (up-rooting or otherwise destroying). Various criteria specified in the Regulations are employed to identify 'important' hedgerows for wildlife, landscape or historical reasons.

16. **Countryside and Rights of Way (CRoW) Act for England and Wales 2000.** The CRoW Act provides increased measures for the management and protection of SSSIs and strengthens wildlife enforcement legislation. Schedule 12 of the Act amends the species provisions of the WCA 1981, strengthening the legal protection for threatened species. The Act also introduced a duty on Government to have regard to the conservation of biodiversity and maintain lists of species and habitats for which conservation steps should be taken or promoted, in accordance with the Convention on Biological Diversity.

17. **Natural Environment and Rural Communities Act 2006.** Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as local planning authorities, in implementing their duty under Section 40 of the Act, to have regard to the conservation of biodiversity in England, when exercising their normal functions. 56 habitats and 943 species of principal importance are included on the S41 list. These are all the habitats and species in England that were identified as requiring action in the UK Biodiversity Action Plan (BAP).

18. **Conservation of Habitats and Species Regulations 2017 (as amended).** The Regulations enact the European Union's Habitats Directive (92/43/EEC) in the UK. The Habitats Directive was designed to contribute to the maintenance of biodiversity within member states through the conservation of sites, known in the UK as Special Areas of Conservation (SACs), containing habitats and species selected as being of EC importance (as listed in Annexes I and II of the Habitats Directive respectively). Member states are required to take measures to maintain or restore these natural and semi-natural habitats and wild species at a favourable conservation status.

19. The Regulations also require the compilation and maintenance of a register of European sites, to include SACs and Special Protection Areas (SPAs)[2] classified under Council Directive 79/409/EEC on the Conservation of Wild Birds (the Birds Directive). These sites constitute the Natura 2000 network. The Regulations impose restrictions on planning decisions likely to significantly affect SPAs or SACs.

20. The Regulations also provide protection to European Protected Species of animals that largely overlaps with the WCA 1981, albeit the provisions are generally stricter. Under Regulation 43 it is an offence, *inter alia*, to:

- Deliberately capture, injure or kill any wild animal of a European Protected Species;
- Deliberately disturb any wild animals of any such species, including in particular any disturbance likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
- Deliberately take or destroy the eggs of such an animal;
- Damage or destroy a breeding site or resting place of such an animal.

21. Similar protection is afforded to European Protected Species of plants, as detailed under Regulation 47.

22. The Regulations do provide a licensing system that permits otherwise illegal activities in relation to European Protected Species, subject to certain tests being fulfilled.

[2] Special Protection Areas (SPAs) are protected sites classified in accordance with Article 4 of the EC Directive on the Conservation of Wild Birds (79/409/EEC) (aka the Birds Directive), which came into force in April 1979. SPAs are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species.

# Appendix 5487/3:

Confidential Badger Appendix (Available On Request)

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# Appendix 5487/4:

Bat Box Specifications

# Bat Boxes

These bat boxes are designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. They are particularly useful for siting in new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated.

**Schwegler 1FR Bat Tube**

This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance-free as the entrance slit is at the bottom.

Holes in the sides allow multiple tubes to be placed next to each other to form a much larger roost.

*Woodcrete construction, width 20cm, height 47cm, depth 12.5cm, weight 13kg.*

**1FF Bat Box**

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

*Woodcrete (75% wood sawdust, concrete and clay mixture)*
*Width: 27cm*
*Height: 43cm*
*Weight: 7.3kg*

# Appendix 5487/5:

Bird Box Specifications

# Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

## 1SP Sparrow Terrace

House sparrows are gregarious and prefer to nest close to each other, so this woodcrete box provides room for three families under one roof.

For siting on buildings of all kinds at a height of at least 2m (e.g. under eaves.)

## 3S Bird Box

The larger 45mm diameter entrance hole allows access for larger birds, such as Starling. This box can be hung on buildings or on trees, either from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

## 1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

## Schwegler No 11 House Martin Nest

This nest has been developed to enable House Martins to breed successfully on external facades without overhanging eaves and has proved highly successful. Position on unobstructed walls without eaves or directly beneath eaves at a height of 2m or above.



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# Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

**Schwegler No 16 Swift Box**

The design of this box mimics bell tower louvres. It has a removable panel for easy inspection of the nest chamber. The entrance hole should be positioned at least 5m above the ground. Ensure unobstructed access for birds entering or leaving the box. Designed for fixing on or within walls.


*Dimensions: 240H x 430W x 220D mm. Weight 11kg*

**Schwegler No 18 Swift Box**

This nest box is suitable for fixing high under the eaves or under the guttering of a building.

*Interior dimensions 14 x 34 x 15 cm.*
*Exterior dimensions 19 x 50 x 22 cm*

**Schwegler No 17 Triple Cavity Swift Box**

This box is constructed from plant-fibre based material. It can accommodate 3 pairs of swifts assisting the rapid formation of colonies. It should be sited 6-7m above the ground, near the roof of a building, ensuring unobstructed access for birds.

*Dimensions: 150H x 900W x 150D mm. Weight 7kg*



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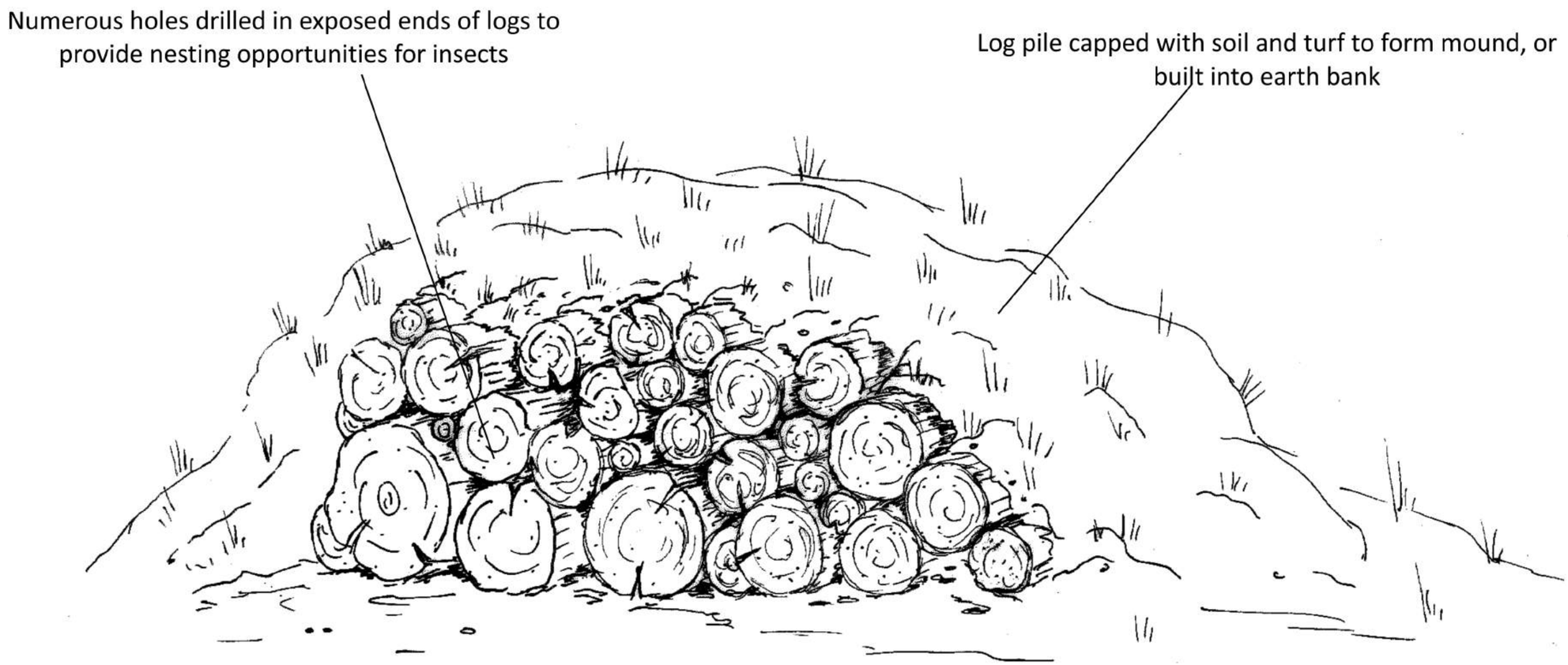
# Appendix 5487/6:

Buried Log Pile Specifications




Partially buried log piles will be created to provide additional invertebrate habitat. These will be positioned within banks or to form mounds, with numerous holes drilled in the exposed ends of the logs, providing opportunities for invertebrate species such as solitary bees and wasps. The log piles will also form habitat for saproxylic insects (associated with dead wood) and a refuge for small mammal, amphibian and reptile species.

Materials used for construction of the hibernacula will be obtained from site where possible, including logs from vegetation clearance.

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Buried Log Pile Construction

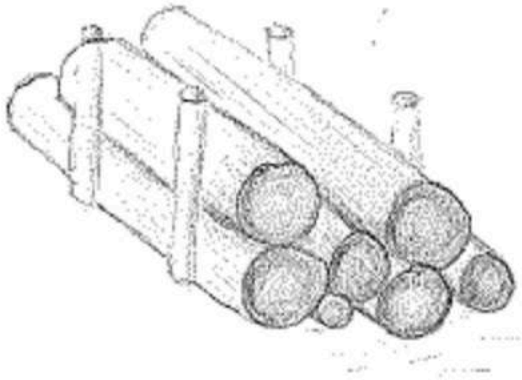
TITLE

# Appendix 5487/7:

## Wood Pile Specifications

# Wood Piles for invertebrates

Dead and decaying wood is an important wildlife habitat, used by many species of beetle and other invertebrate.



These creatures then become a foraging resource for species higher up the food chain, including birds, bats and terrestrial mammals.

Create a wood pile by sinking 4 posts approximately 8-10cm in diameter, at least 20cm into the ground as shown above.

Logs with bark, of any diameter should be cut into consistent lengths of 1.5 - 2m, and then tightly and neatly stacked into the space between the uprights.

Avoid making log piles too high, or the timber will dry out.

Wood from any broad-leaved tree can be used, but oak, beech or fruit trees are best, as these support the richest insect communities.

A buffer zone should be created around the logs so that the soils and vegetation are protected as much as possible from disturbance, and ideally the surrounding vegetation should not be cut between May-September.

Allowing plants to grow over the log pile both retains moisture and provides shade for the invertebrates.

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