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Construction Environmental Management Plan

Site Name

Land East of Croft House, Shinfield

Client

Calcot Developments
Limited

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About the Author

This report has been prepared by Alice Motola, with one year experience working as an Assistant Ecologist at The Ecology Co-op. She has a bachelor's degree in Environmental Sciences, a master's degree in Nature Sciences and a one-year MSc in Environmental Forestry and is a Qualifying member of the Chartered Institute for Ecology and Environmental Management (CIEEM).

About the Reviewer

This report has been reviewed by Kate Priestman, who is a Principal Ecologist with over twenty years' experience. Kate has undertaken extensive survey work and reporting, encompassing a breadth of deliverables, and prepared European Protected Species licences for numerous schemes. As a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist (CEnv), she is bound by CIEEM's code of professional conduct.



Report Summary

Purpose	The Ecology Co-operation was commissioned by Calcot Developments Limited to provide a Construction Environmental Management Plan (CEMP) with regards to a proposed development at land east of Croft House, Shinfield. This document outlines site-wide mitigation for protected species and species of principal importance. It also includes management objectives, responsibilities and maintenance schedules including remedial responsibilities, should they be necessary. It will be submitted to Wokingham Borough Council in order to discharge condition no. 13 of the approved planning application (number: 232333). The proposed development comprises the erection of a 4-bedroom dwelling with detached 2-bay car port and cycle storage along with landscaping and boundary treatments.
Context	The site is located to the north of Croft Road, in a semi-rural area between the villages of Spencers Wood and Shinfield, just south of the town of Reading in Berkshire. This is a small site, measuring approximately 0.1 hectares. It is situated between the garden space and driveway of Croft House and an active construction site on land pertaining to an adjacent property (The Mead). It includes a garden space and gravel driveway, once part of Croft House, separated by a new wooden panel fence. The southern boundary includes a mature tree line and fence line that meets Croft Road. Surrounding the site are new residential developments, hedgerows, mixed-use farmland and an area of recently felled trees.
Habitat impact avoidance	Sections 4, 7 and 10 of this report outline measures to prevent significant effects on the on-site treeline linear habitat along the southern site boundary from the following impacts: physical damage, noise, vibration, dust and hydrological pollution.
Protected species impact avoidance	Section 3 of this report outlines measures to prevent harm to protected species and species of principal importance during the construction works. This includes mitigation measures for the following species: • badgers • bats • birds • dormice • reptiles and amphibians • hedgehogs • invertebrates
Toolbox talk	Site staff must be briefed, prior to the commencement of construction, on the ecological issues related to the project and the importance of contacting an ecologist in the event that any wildlife is identified within the construction zone.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-operation was commissioned by Calcot Developments Limited to produce a Construction Environmental Management Plan (CEMP) for the proposed erection of a 4-bedroom dwelling with detached 2-bay car port and cycle storage along with landscaping and boundary treatments on land east of Croft House, Shinfield. This document outlines site-wide mitigation for protected species and species of principal importance. It will be submitted to Wokingham Borough Council with regards to condition no. 13 of the approved planning application (reference number: 232333). Condition 13 states:

“13. Construction Environment Management Plan (Biodiversity)

No development shall take place (including demolition, ground works, vegetation clearance) until a construction environmental management plan (CEMP Biodiversity) has been submitted to and approved in writing by the Local Planning Authority. The CEMP (Biodiversity) shall include the following:

- a) **Risk assessment** of potentially damaging construction activities;*
- b) Identification of **biodiversity protection zones**;*
- c) **Practical measures** (both physical measures and sensitive working practices) to avoid or reduce impacts during construction (may be provided as a set of method statements);*
- d) The **location and timing of sensitive works** to avoid harm to biodiversity features;*
- e) The times during construction when **specialist ecologists** need to be present on site to oversee works;*
- f) **Responsible persons** and lines of **communication**;*
- g) The role and responsibilities on site of an ecological clerk of works (**ECoW**) or similarly competent person;*
- h) Use of **protective fences, exclusion barriers and warning signs**; and*
- i) relevant **ecological mitigation** and **enhancement measures**, including the construction of **hibernacula** and installation of **bird and bat boxes**, as set out in sections 4 and 5 of the Updated Ecological Assessment P3422 Issue 2023.08.15. The approved CEMP shall be adhered to and implemented throughout the construction period strictly in accordance with the approved details and in consultation on site with the Council’s Ecology Officer and the applicant’s Ecology specialist/consultant.*

*Reason: To secure appropriate mitigation measures for **protected species** and **species of principal importance** during construction, as appropriate under section 15 of the NPPF, Core Strategy policy CP7 and Managing Development Delivery Local Plan policy TB23.”*

The prescribed mitigation measures described within this document will be issued to relevant works contractors to ensure that they are carried out in full. Implementation of works detailed within this CEMP will be overseen by a suitable ecological consultancy, and the works contractor will be given contact details for an ecologist so that any issues can be resolved promptly.



1.2 Background

The site is located to the north of Croft Road, in a semi-rural area between the villages of Spencers Wood and Shinfield, just south of the town of Reading in Berkshire. The central grid reference for the site is SU 724 668.

This is a small site, measuring approximately 0.1 hectares. It is situated between the garden space and driveway of Croft House and an active construction site on land pertaining to an adjacent property (The Mead). It includes a garden space and gravel driveway, once part of Croft House, separated by a new wooden panel fence. The southern boundary includes a mature tree line and fence line that meets Croft Road. Surrounding the site are new residential developments, hedgerows, mixed-use farmland and an area of recently felled trees. There are four ponds within 500m of the site. The Thames Basin Heaths Special Protection Area (SPA) and Stanford End Mill and River Loddon Site of Special Scientific Interest (SSSI) are within 2km of the site. Figure 1 below shows the boundary of the site.

The proposed development comprises the erection of a 4-bedroom dwelling with detached 2-bay car port and cycle storage along with landscaping and boundary treatments. The full address of the site is Land East of Croft House, Croft Road, Shinfield RG2 9EY. The proposed site layout is displayed in Figure 2a & b below.

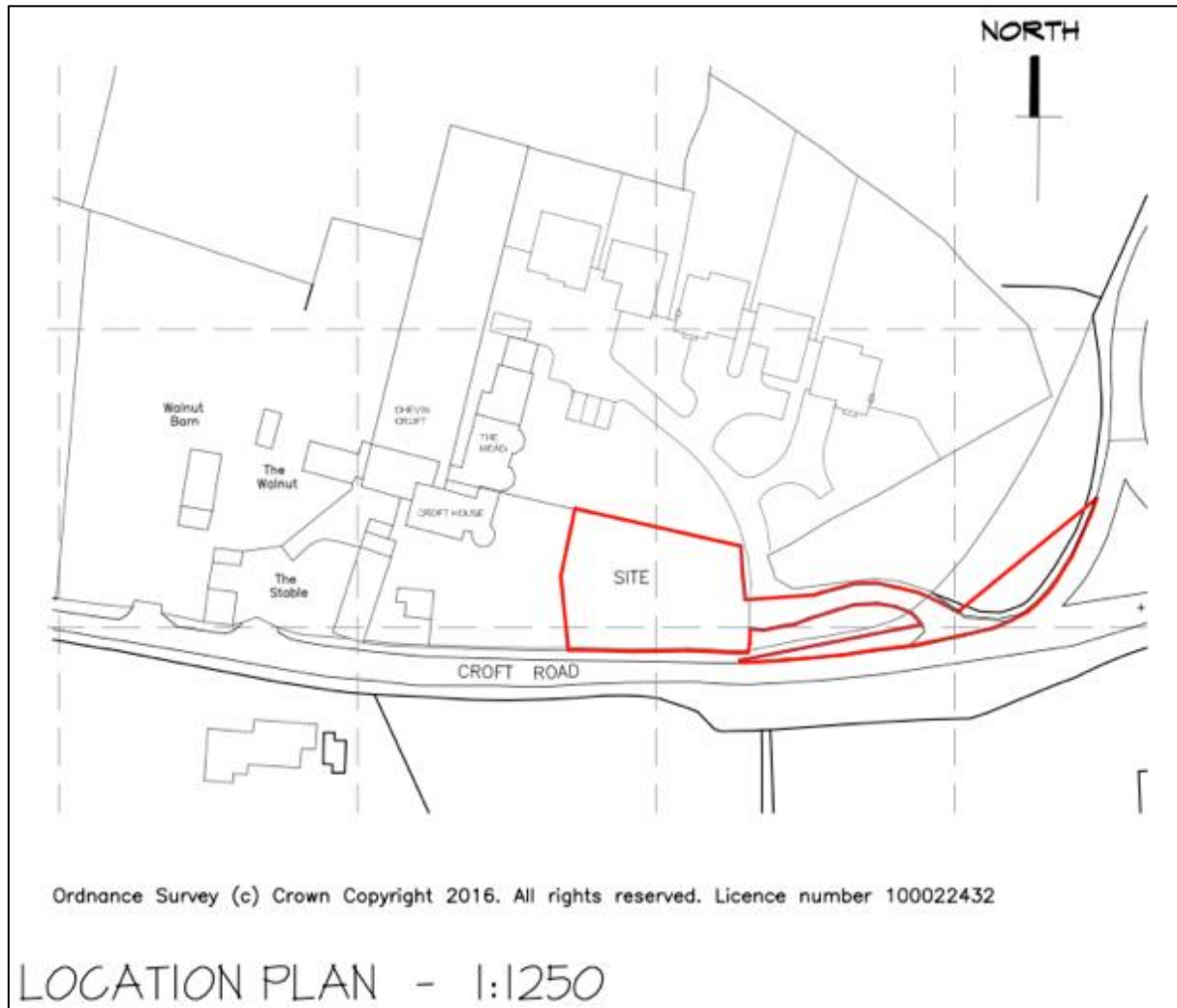


Figure 1. Block & Location Plan, showing the location of the site. The proposed site application boundary is outlined in red. Map courtesy of Crossley Design Architecture, job no. 1905, drawing no: 2.13, dated June 19.

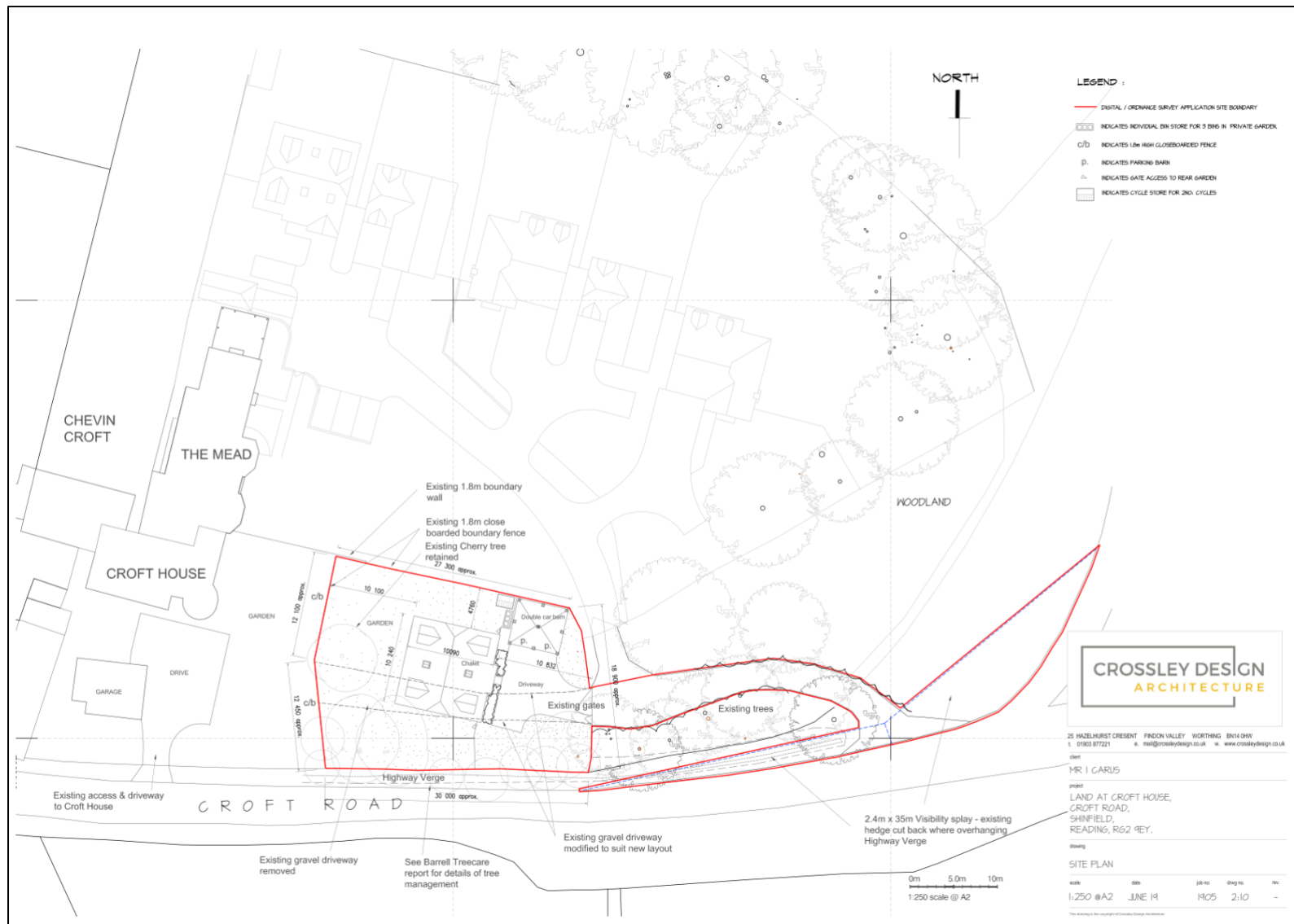


Figure 2a. Site Plan, showing the proposed development. The proposed site application boundary is outlined in red. Map courtesy of Crossley Design Architecture, job no. 1905, drawing no: 2.10, dated June 19.

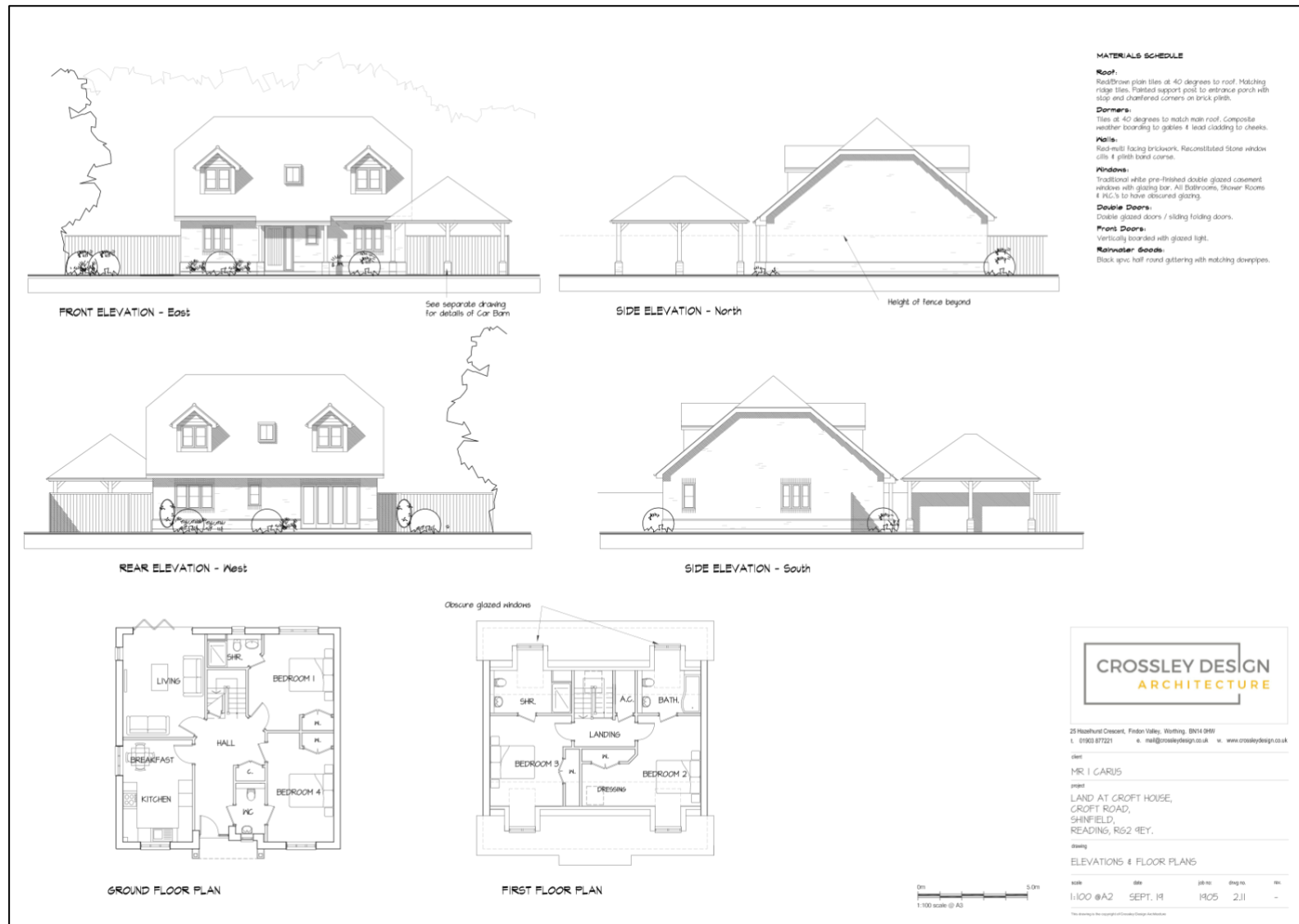


Figure 2b. Elevations & Floor Plans, showing the proposed development. Map courtesy of Crossley Design Architecture, job no. 1905, drawing no: 2.11, dated September 19.

1.3 Summary of Previous Survey Work

An Updated Ecological Assessment¹ was undertaken by The Ecology Co-op on 17th July 2023 by Charlotte Hammond, BSc (Hons) and a qualifying member of CIEEM. The combined ecological assessment walkover and desk study data indicated the presence within site and/or within the wider landscape of habitats with value and potential to support commuting & foraging bats, nesting & breeding birds, dormice *Muscardinus avellana*, reptiles and hedgehogs *Erinaceus europaeus*. However, no further surveys for protected species were necessary.

2 LEGAL PROTECTION

Legal protection applying to relevant bird, mammal and herpetofauna species is detailed in Appendix 1 of this report. This includes both national and European legislation that protects, bats, dormice, reptiles, and breeding birds.

3 PROTECTED SPECIES IMPACT AVOIDANCE

¹ The Ecology Co-op (2023). *Ecological Assessment of Land at Croft House, Shinfield*.



3.2 Bats

If lighting will be used during the construction phase of the development, all persons involved in any of the construction phases must be made aware of the impacts of artificial lighting on bats.

Notably, artificial lighting can have a negative impact upon bats, disturbing their flight paths and causing them to stay in their roosts longer. Though works are likely to only take place during daylight hours, dusk/night work must be avoided to negate the need for lighting. If lighting is needed, lighting must be limited to active working areas only and follow guidance from the Bat Conservation Trust for a sensitive lighting scheme (see Appendix 2). The habitats sensitive for bats are trees, hedgerows, lines of trees and woodlands.

3.3 Breeding Birds

The treeline south of the site and dense scrub within the application site may support common foraging and nesting birds and precautionary measures will be necessary to prevent a breach of the Wildlife and Countryside Act 1981 (as amended). As such:

- the removal of any vegetation must be completed outside of the breeding bird season (avoiding 1st March to 31st August), unless features are first searched by a suitably qualified ecologist and no active nests are found. If a nest is found, a minimum buffer of 5m must be maintained around the nest until all of the young have fledged safely;
- construction vehicles may disturb breeding birds through noise or direct damage of the habitat. As such, to prevent construction vehicles coming too close to the woodland along the eastern site boundary and the treeline and hedgerow along the southern and northern boundaries, a minimum buffer of 5m will be maintained from these features. This will be secured with a physical barrier such as Heras fencing;
- any building materials must be stored at least 5m from all elevations of the boundary vegetation to avoid traffic causing disturbance to any potential active nests;

3.4 Dormice

The tree line south of the site will be retained and no habitat potentially suitable to dormice is to be removed as part of the proposals. However, if lighting will be used during the construction phase of the development, all persons involved in any of the construction phases must be made aware of the impacts of artificial lighting on dormice.

Lighting strategy

No works must take place after dark, and no artificial lighting should be used to support construction activities.

Bright external lighting can have a detrimental impact upon suitable habitat for dormice. An ecologically sensitive scheme that conforms to Bat Conservation Trust guidance has been committed to (see Appendix 2). This includes the following measures:



- no 'upward pointing' or bare bulb lights will be installed anywhere on the development. The lighting scheme will be designed to minimize light spill onto any retained or created semi-natural habitats;
- the frequency spectrum of light sources must be selected that has reduced attraction to insects;
- no external lights will be installed on new buildings above a height of 2m and all external lights
- will have shields to prevent light splash beyond horizontal; artificial lighting is to be pointing away from existing and retained habitat for dormouse.

If a dormouse or dormouse nest (Photograph 1), is found at any time upon the site during the construction phase, all works must cease and the lead ecologist must be contacted immediately.



Photograph 1: example of what a dormouse nest may look like. Photograph retrieved from: <https://ptes.org/campaigns/dormice/about-hazel-dormice/hazel-dormouse-ecology/hazel-dormouse-nest-ecology-ptes/>.



3.5 Pre-construction Mitigation Measures for Amphibians & Reptiles

The site supports moderate value habitat for amphibians and reptiles, and the presence of great crested newts and common reptiles on site cannot be fully discounted. Thus, in order to avoid any impacts on amphibians and/or reptiles, specific precautionary working measures have been recommended and are detailed below.

Habitat manipulation for reptiles & amphibians – two-phase strim

Given the size of the site, small-scale impacts to habitats and the very low potential for great crested newts and reptiles to be present, precautionary mitigation is recommended.

Destructive search

All contractors working on site will be subject to a toolbox talk from the on-site ecologist explaining the legal protection of common reptiles and great crested newts and the process of the destructive search.

The destructive search will involve the following steps (all steps shall be undertaken during mild conditions weather conditions with air temperatures above 9°C at all times. This will ensure that any common reptiles and great crested newts are active and have not gone into hibernation):

- all surface refugia (e.g. logs, debris and discarded building materials) shall be checked for reptiles and then removed off-site by hand;
- all grassland/suitable habitat shall be cut slowly in two passes, the first to 150mm minimum height, the second pass to ground level within two days of the first pass, with arisings raked up and removed off site. This action will ensure that suitable habitat cover for herpetofauna is removed and encourage them to move into adjacent suitable habitat. It will also make them easier to identify;
- a suitably qualified ecologist shall be on site throughout the destructive search works to oversee the above operations;
- reptiles will also seek refuge within hibernacula such as log piles, compost heaps and rubble piles. As such, any logs or brash piles formed from trimmings can still be used on hardstanding if suitable. However, it is best to remove those materials from site or to reuse them in soft landscaped areas as biodiversity features, to ensure these do not form features that could be used for temporary shelter. Similarly, once any substrate has been excavated, it is best practice to move materials off site, to a skip or to nearby hardstanding areas to minimise the risk of the spoil being used for shelter. If this is not possible the material must be placed on a tarpaulin and be compacted to avoid gaps and spaces;
- if, in the unlikely event that a great crested newt or reptile is found anywhere upon the application site, all works must cease immediately, and the animal shall be left to disperse by itself (unless in immediate danger), and an ecologist should be contacted for advice. Where great crested newts are identified, an EPS licence may be required for work to resume.



3.6 Hedgehogs

Hedgehogs are considered a species of principal importance in the UK, specifically under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, due to their declining populations and conservation significance.

As the brash piles within the understory are likely to be removed, direct impacts on hibernating hedgehogs may occur. Therefore, unmitigated, there will be a likely negative impact on hedgehogs at the site level.

A precautionary approach to the development to prevent impacts to hedgehogs is recommended. A suitably qualified ecologist should undertake a hand search of all potential refugia that might support daytime resting sites for hedgehogs. If any hedgehogs are identified in hibernation (between November and early March usually), then either the area where the hedgehog is found should remain undisturbed, or at the discretion of a suitably qualified ecologist, it may be possible to move the animal with the material that it is hibernating into a safe location.

Moreover, any excavations must be covered up overnight to prevent hedgehogs and any other small mammals from falling in. If this is not possible then a board must be placed in the hole/pit so that any wildlife can use this to escape. Specifically, there is potential for hedgehogs to use the bramble scrub and debris piles on site. Sensitive clearance of the bramble scrub and debris/wood piles is considered to be sufficient to minimise the risk of harm to individual hedgehogs.



4 USE OF PROTECTED FENCES, EXCLUSION BARRIERS AND WARNING SIGNS

Heras fence panels, fitted with an Acoustic Barrier membrane, will be installed along the southern site boundary in order to protect the existing line of trees from being accidentally damaged by any heavy machinery, to decrease any noise pollution originating from the use of tools and machinery during the works and to act as an exclusion barrier to prevent any workers from approaching the retained trees (highlighted in a black dashed line in Figure 3 below). Additionally, warning signs, such as the one illustrated in Figure 3, must be hung on the Heras fencing to inform the builders they should not trespass into this area.

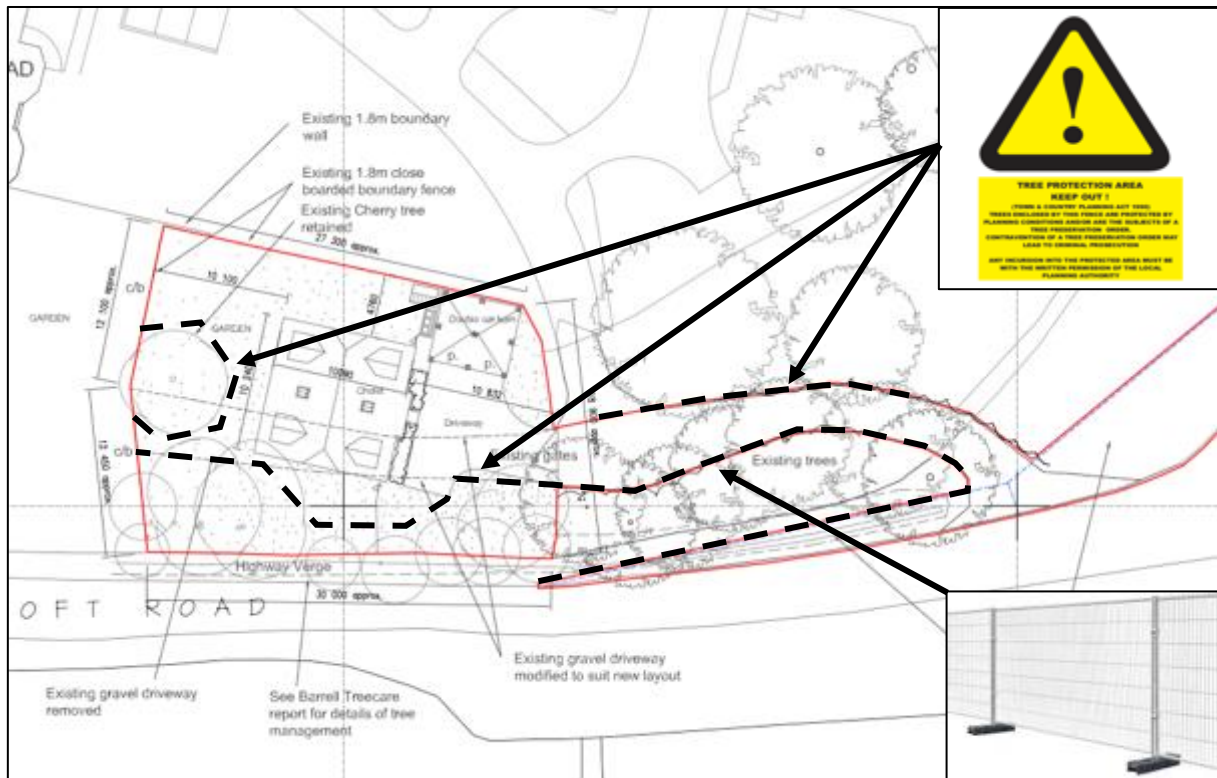


Figure 3. Proposed Site Plan illustrating with the black intermittent line where the Heras fencing will be installed in combination with the warning signs.

The main biodiversity zone identified on site which requires protection is the line of trees located on the south and east boundaries of the site as shown in Figure 4. This zone must be protected and delimited by Heras fencing as illustrated in Figure 3 in Section 4.



6 RESPONSIBLE PERSONS AND LINES OF COMMUNICATION

Likewise, if any protected species are found on site during the works, the appointed specialist ecologist for the scheme must be contacted immediately.

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7 GENERAL CONSTRUCTION HOUSEKEEPING

The following general measures must also be implemented during construction in order to prevent negative impacts to wildlife generally as a result of development works:

- chemicals, liquids, fuel oils or waste products, leachates or surface water used or produced by the development should be stored and disposed of correctly according to COSHH regulations. No chemicals will be allowed to leak on to the site at any time;
- all trenches must be covered at night or have a rough-sawn plank placed inside to act as a ramp that will enable any wildlife to escape should they fall in;
- security lighting should be directed away from all natural habitats, including trees;
- all vehicles must stay within the construction zone and hard landscaping areas, avoiding habitats which are being retained.

8 PRE-CONSTRUCTION MITIGATION MEASURES

8.1 Toolbox Talk

A tool-box talk will be given to all building contractors prior to any works commencing which will detail the protection afforded to the protected species and species of principal importance discussed within this report, namely: [REDACTED] commuting & foraging bats, nesting & breeding birds, dormice, amphibians, reptiles and hedgehogs, as well as instructions for the approach taken and the reasons why. This CEMP report and signed toolbox talk will be made available to the project team, construction contractors and upon request by any third party with legitimate interest in the works to serve as a reference copy and must remain on site at all times.

Under no circumstance will a member of the building/construction team handle any of the protected species mentioned above. If a qualified ecologist is absent if a great crested newt, [REDACTED] dormouse or bat is discovered, then a licensed ecologist must be contacted immediately for advice.



9 TIMES DURING CONSTRUCTION REQUIRING THE PRESENCE OF A SPECIALIST ECOLOGIST

A specialist ecologist, aka Ecological Clerk of Works (ECoW), must be appointed prior to the commencement of the development works and their role must be explained clearly to the contracted workers. The times during the construction phase when a specialist ecologist must be present on site to oversee the works are listed below:

- during the toolbox talk;
- for the nesting bird check;
- during the habitat manipulation for reptiles & amphibians;
- importantly, in the unlikely event that a great crested newt, bat, [REDACTED] reptile, dormouse or hedgehog is found on site at any time, all activity must cease immediately, and a specialist ecologist must be contacted if not present at that time, and the mitigation strategy reviewed. A specialist ecologist name and contact number should be made available for the contracted workers to call in case a protected species is observed on site, as it may be necessary to apply to Natural England for an EPS licence to continue.

10 OPERATIONAL PHASE MITIGATION MEASURES

Poorly designed external lighting can have a detrimental impact upon foraging and commuting bats and other nocturnal wildlife. To prevent this, all retained vegetation must be protected (see Figure 3 and 4), from artificial lighting with no streetlamps or outside lights facing towards these habitats. A lighting plan will be prepared separately by a competent engineer and be signed off by an ecological consultancy for submission to the planning authority where lighting is required. This must adhere to the most recent guidelines published by the Bat Conservation Trust² (see Appendix 2) and include the following measures:

- no 'upward pointing' or bare bulb lights to be installed anywhere on the developed site;
- all external lights upon lampposts must not be more than 3.5m in height and must have shields installed to focus light directly onto areas of need only;
- no external lights are to be installed on the building above a height of 2m and all external lights must have shields to prevent light splash beyond the horizontal (90 degrees from the ground);
- narrow-spectrum light sources must be used to lower the range of species affected by lighting, minimising the use of ultra-violet light;
- white and blue wavelengths of the light spectrum must be avoided to reduce insect attraction (a peak wavelength of >550nm). Where white lights are required, they will be of a warm/neutral colour temperature (<2,700 Kelvin ratings);
- any pedestrian ground lighting must not exceed 3 lux;
- external lighting must be on PIR sensors, which detect large objects only, and are therefore not triggered by passing bats. These should be set to the shortest time duration;

² Bat Conservation Trust and Institute for Lighting Professionals (2023) Guidance Note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



- wall lights and security lights must be 'dimmable' and set to the lowest light intensity. The developed site will make the most of the up-to-date technology available to incorporate this.

11 ECOLOGICAL MITIGATION AND ENHANCEMENT MEASURES

11.1 Bat and Bird Boxes

As bats are likely to commute along the mature tree line at the site it will be beneficial to incorporate new roosting opportunities for bats into the proposed new house. Two 2FE Schwegler Wall-Mounted bat shelters (see Figure 5), should be installed upon the external faces of the building close to the eaves on the south or eastern face. As best practice, the lighting scheme should be designed to minimize light spill (see Appendix 2), around these roosting features and potential commuting routes.

In addition to the bird box already present in the mature tree line, habitat built within the fabric of the new property for house sparrows (a declining species in the UK) is recommended, with a 1SP Schwegler Sparrow Terrace (see Figure 5) affixed to the southern/eastern wall of the property or the car barn. This box should be placed at least 3m above the ground with a clear flight path and facing away from prevailing winds, ideally near the eaves of the building.



Figure 5. Left image: 2FE Schwegler Wall-Mounted bat shelters. Right image: 1SP Schwegler Sparrow Terrace.



11.2 Reptile and Amphibian Hibernaculum

The removal of ruderal habitat and log piles on the site will remove suitable reptile habitat and as such, in the absence of mitigation it would have a likely negative impact on this species at a site level.

To replace the lost log piles and small area of ruderal habitat, a reptile hibernaculum (see Figure 6) should be created which will provide shelter and hibernation habitat for reptiles. This section hibernaculum must be retained in perpetuity once the house is in use. This shall be placed in the understory of the mature tree line or within the new garden space within the proposed development.

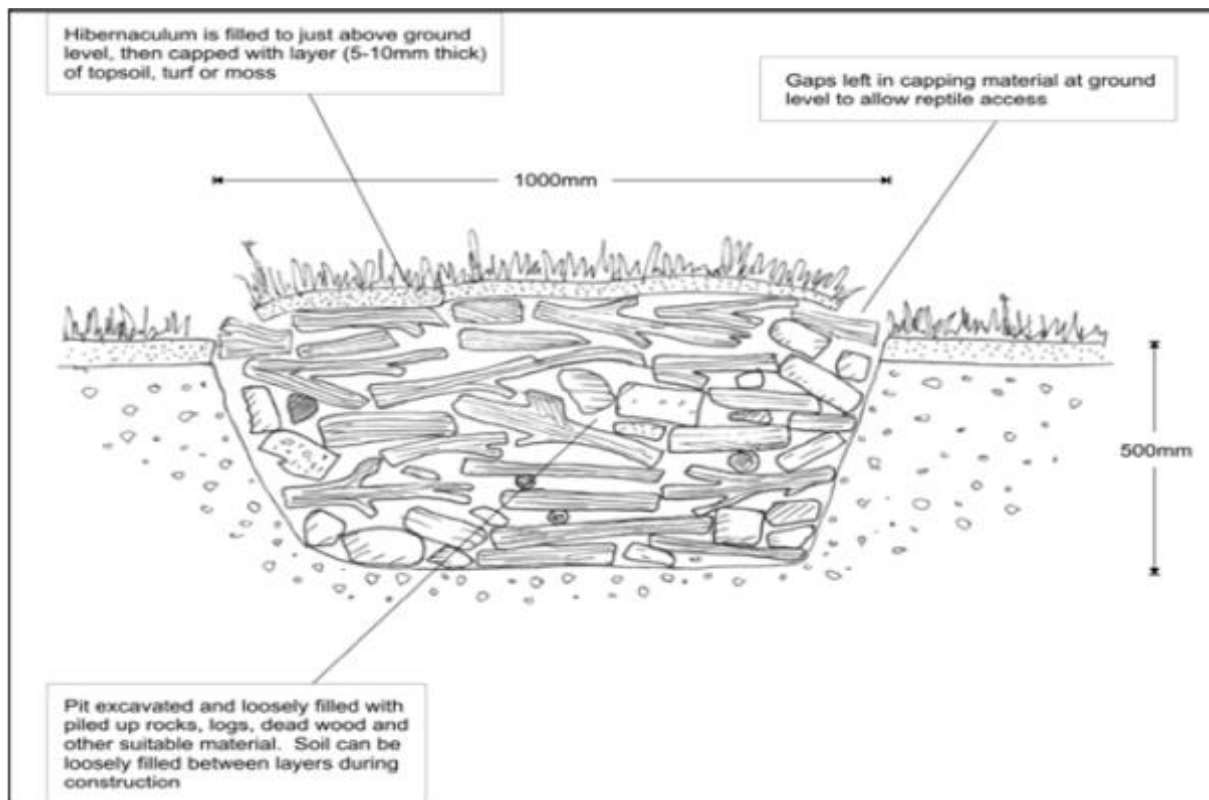


Figure 6. Illustration on how to build a reptile hibernaculum. Image taken from the 'Reptile Habitat Management Guidelines' by Herefordshire Amphibian and Reptile Team and the Herefordshire Nature Trust.



11.3 Hedgehog Highways

The existing wooden board fence and any new fencing within the site or at its boundaries must have 'hedgehog highways' incorporated within the fence lines to allow hedgehogs to safely forage and commute between gardens and the wider landscape (see Figure 7). Hedgehog highways are simple to incorporate, consisting of holes approximately 13cm by 13cm at the base of the fence. Plaques can be installed adjacent to the hole to easily identify the features so that they are maintained in perpetuity.



Figure 7. Left – Hedgehog Highway Sign. Right – Eco Hedgehog Hole Fence Plate.

11.4 Invertebrates

As the log piles and dead tree on the site may be used by stag beetles, *Lucanus cervus*, removal of these features will lead to likely negative impact on stag beetles at the local level.

Therefore, where possible the dead tree should be retained. If this is not possible, log piles should be placed in the understory of the mature tree line where they should remain undisturbed in perpetuity. This will also create further hibernacula for reptiles and amphibians.

11.5 Invasive Species

Cherry laurel, Portuguese laurel, bamboo and azalea species are present on the site as well as a number of ornamental species. Though, none of these are listed under Schedule 9 of the Wildlife and Countryside Act, they are non-native and can be invasive. The invasive and non-native species at the site may spread further along the tree lines bordering the site and into nearby woodland parcels, which will have a likely negative impact at a local level.

As such, these species should be removed with caution and disposed of correctly to ensure no further spread within or outside the site. With the implementation of these measures, the proposed development would have a certain positive impact at a local level through the removal of invasive species and prevention of their spread.



11.6 Habitat Enhancements

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme could include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and will create a biodiversity net gain through the development.

Within the garden space of the new property, it will be beneficial to create an area or border planted with species from the RHS Plants for Pollinators³. This could include a mixture of the species listed below which will be suitable for the loamy, seasonably wet soil underlying the site. This area will create good food source for bees, as well as creating an attractive and colourful feature in the garden space:

- greater knapweed *Centaurea scabiosa*
- common knapweed *Centaurea nigra*
- meadow crane's-bill *Geranium pratense*
- field scabious *Knautia arvensis*
- Devil's-bit scabious *Succisa pratensis*
- greater musk mallow *Malva alcea*
- common cowslip *Primula officianalis*
- ragged-robin *Lychnis flos-cuculi*
- yarrow *Achillea millefolium*.

Fruit trees should be planted to replace the apple trees lost as a result of the development. A ratio of three to one is ideal, but given the small size of the site, this is unrealistic, and therefore, at least two should be included within the soft landscaping for the proposed development. This could include the species listed below and will enhance the site for breeding birds, foraging bats and invertebrates:

- apple *Malus x domestica*
- crab apple *Malus sylvestris*
- pear *Pyrus communis*
- Plymouth Pear *Pyrus cordata*
- plum *Prunus domestica*
- cherry plum *Prunus cerasifera*.

The mature tree line on the southern boundary has a sparse understory in places. Therefore, to replace the removed cherry laurel and Portuguese laurel, as well as replace and create further nesting bird habitat on the site, supplementary planting of native trees is recommended along this tree line. Given the arrival of ash dieback, no ash trees should be planted at any time on the site. This planting could include a mixture of the following species:

- guelder rose *Viburnum opulus*,

³ RHS (05/08/2019) RHS Plants for Pollinators - British Wildflowers,
<https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/plants-for-pollinators-wildflowers.pdf>.



- hawthorn,
- field maple,
- hazel,
- pedunculate oak *Quercus robur*,
- wild cherry *Prunus avium*,
- dogwood; and
- blackthorn *Prunus spinosa*.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



APPENDIX 1 - Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the Directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain the favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the Directive (for example Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austropotamobius pallipes*). Together with ‘Special Areas of Conservation’ (SACs), SPAs form a network across Europe of protected areas known as the ‘Natura 2000 sites’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Muscardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2017, as amended (the “Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites, now known as National Site Network sites under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, receive the highest level of protection under the Regulations which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects’ to the conservation objectives are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb wild animals of such species;
- deliberately take or destroy their eggs (where relevant);
- damage or destroy a *breeding or resting place* of such an animal;
- possess, control, sell or exchange any live or dead animal or plant, of such species;
- deliberately pick, collect, cut, uproot or destroy a wild plant of such species.



The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the ‘three derogation tests’) are met:

- a licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e));
- a licence can be granted if “there are no satisfactory alternatives” to the proposed action;
- a licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- take, damage or destroy the nest of any wild bird while it is in use or being built
- take or destroy the egg of any wild bird
- disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrus w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).



Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006) created the statutory nature conservation body Natural England, and places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.

Protection of Badgers Act (1992)

The Badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a Badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a badger sett; or
- to disturb a badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting [REDACTED]

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2024)⁴ sets out the Government's view on how planners Must balance nature conservation with development and helps ensure that Government meets

⁴ HM Government (2024). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf



its biodiversity commitments with regard to the operation of the planning system.

Paragraph 179b, which states that council policies should “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*”

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)⁵. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- minimising impacts on existing biodiversity and habitats;
- providing net gains in biodiversity and habitats, wherever possible;
- establishing coherent ecological networks that are more resilient to current and future pressures.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK’s response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government’s response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade.

Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK’s leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the ‘Red’, ‘Amber’ and ‘Green’ lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every five years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2021 (Stanbury et al, 2021), which provides an up to date assessment of the conservation status of birds in the UK.

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⁵ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



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APPENDIX 2 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust⁶ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist

⁶ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



and lighting professional determine there is a likely significant effect upon key bat habitat and features;

- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- lighting spectra: peak wavelength >550nm
- colour temperature: <2700k (warm)
- reduction in light intensity
- minimal UV emitted
- upward light ratio of 0% and good optical control.

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