



Landscape and Ecological Management Plan

13A North Common Road, Uxbridge, London, UB8 1PD

Hitesh Parmer

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Guidelines

This assessment has been designed to meet:

- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and 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. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited were commissioned by Hitesh Parmer to produce a Landscape and Ecology Management Plan (LEMP) for a proposed development at 13A North Common Road, Uxbridge, London, UB8 1PD (hereafter referred to as “the site”).

The site has been subject to previous ecological assessment, comprising:

- A Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) in June 2022 (Astute Ecology Ltd. 2022).

1.2 Project Description

The planning application pertaining to the site (London Borough of Hillingdon Council Reference: 74738/APP/2023/844) describes the development as: Erection of 2 x two storey, 3-bedroom detached dwellings with associated parking and amenity space (hereafter referred to as the proposed development). A plan showing the proposed development is provided in **Appendix 1**.

1.3 Site Context

The site is located at National Grid Reference TQ 05963 85178 and has an area of approximately 0.25ha. In the PEA (Astute Ecology Ltd. 2022), the site is described as a detached house with driveway and small lawn to the front (south), with access around the east side to a rear garden where lawns, sheds and a greenhouse are present. Adjacent to the rear garden are two ponds surrounded by dense vegetation. The site is enclosed by a mix of fencing and hedges and there are a number of mature trees on the boundary. The site is bordered by residential gardens and houses on all aspects. The driveway leads to a single-track access road that connects to North Common Road. A site location plan is provided in **Appendix 2**.

1.4 Scope of This Report

Following the submission of planning application 74738/APP/2023/844, London Borough of Hillingdon Council have granted planning with Condition 13 stating:

“The ecological enhancement, management and mitigation measures outlined in section 6 of the submitted ecology survey (Ref: Astute, June 2022) shall be carried out, adhered to and where appropriate maintained thereafter. Additionally, prior to any works of construction, demolition or reconfiguration of the site’s ponds, an ecological enhancement plan shall be submitted to and approved in writing by the Local Planning Authority. The plan shall demonstrate that the proposal would result in a net gain in biodiversity at the site. Thereafter the plan shall be carried out and maintained thereafter.”

The aims of this LEMP are to provide ecological mitigation and enhancement prescriptions to ensure ecological receptors recorded during previous ecological assessments are suitably protected and that viable enhancements are provided to ensure the ongoing value of the site to biodiversity post-construction. As such, this report aims to provide sufficient detail to satisfy condition 13.

2.0 Ecological Baseline Conditions Relevant to This Report

The baseline ecological conditions of relevance to this report were determined as a result of the previous ecological assessments undertaken at the site including the PEA and PRA (Astute Ecology Ltd. 2022).

2.1 Habitats Recorded on Site

The site is characterised by a residential property with associated garden areas and access. Habitats recorded on site include:

- Amenity grassland
- Short perennial
- Dense Scrub
- Species-poor hedgerow
- Trees and Shrubs
- Introduced shrub
- Building
- Hard standing

2.2. Value to Protected/Notable Species

Given the type and extent of habitats recorded and the assessed connectivity between the site and the wider landscape, the site was assessed to provide opportunities for the following protected and/ or notable species:

- Amphibians;
- Bats;
- Badgers;
- Common species of nesting birds;
- Hedgehogs; and
- Reptiles.

The site is not considered suitable to support any other protected and/ notable species.

Amphibians

The ponds on and around the site were subject to Habitat Suitability Index (HSI) assessments which returned a score of average for pond 2 and a score of excellent for pond 3. Pond 1 was completely dry and has been for several years evidenced in previous ecological reports and was thus not subject to the HSI assessment. Following this, DNA analysis was conducted on pond 2 and returned a negative result for great crested newts. Pond 3 which was located 125m from the site was not subject to DNA analysis due to the distance from the site and the fact that it is separated by a main road meaning that even if with a confirmed historical population of GCN, it is considered unlikely that GCN could inhabit the site from this pond.

On site terrestrial habitat for foraging, commuting and hibernating great crested newts was limited with small parcels of scattered scrub, woodland understory and hedgerow understory.

Bats

All trees on site are proposed to be retained in accordance with the proposed development plans in addition to holding negligible potential for roosting bats and the building was assessed as having negligible potential for bats. As a result, no impacts to roosting bats are anticipated.

The site is assessed to provide foraging and commuting opportunities for bats in the form of the ponds, dense scrub, trees, and hedgerows. These habitats are likely to provide micro-climatic conditions that will attract invertebrates providing foraging opportunities for bats.

Badgers

No evidence of badgers was recorded on site during the initial survey, but the site does offer limited sett building and foraging habitat in the form of scattered scrub and woodland. The bank adjacent to the pond is also favourable to badgers as a potential sett building location.

Nesting birds

The presence of scrub, woodland and hedgerow on site is favourable habitat to many common garden bird species. No nesting birds were discovered on site at the time of the survey.

Hedgehogs

Habitats recorded on site are assessed to provide refuge, foraging, and commuting opportunities for hedgehogs in the form of dense scrub, trees, and hedgerows. Refuge building opportunities are most prevalent within woodland pockets, scattered scrub, and at the base of hedgerows where there is enhanced topographical structure and additional cover. However, no evidence indicating the presence of hedgehogs was recorded during the site survey.

Reptiles

Habitats recorded on site are considered suitable to provide limited refuge, foraging, and commuting opportunities for reptiles. Refuge opportunities are most prevalent within the hedgerows and scrub, where dense vegetation provides effective cover from predation. Furthermore, the presence of the ponds on site provides aquatic opportunities for reptiles which enhances the value of the site for species that typically utilise water bodies during the life cycle such as grass snakes (*Natrix natrix*).

2.3 Scope for Mitigation and Enhancement

Habitats on site are assessed to provide opportunities for amphibians, foraging and commuting bats, badgers, hedgehogs, nesting birds, and reptiles. Although the site is not assessed to represent a significant resource for these species in the context of the wider landscape, there is suitable connectivity to the site for these species and their presence for transient periods cannot be discounted. It is therefore assessed that mitigation and enhancement appropriate to the scale of the development targeting these species groups will prevent any significant impacts occurring during construction whilst providing viable ecological enhancement post-development.

3.0 Landscape and Ecology Management Plan

3.1 Mitigation

Mitigation prescriptions to reduce adverse impacts to existing ecological features and biodiversity as identified through previous ecological assessment are detailed in **Table 1** below.

Table 1: Mitigation Prescriptions

Mitigation	Specification
Persons Responsible and Lines of Communication	It is recommended that a Development Biodiversity Champion is selected for the construction phase of the development. The Biodiversity Champion should be someone with significant influence during construction, such as the contract or project manager. The Development Biodiversity Champion is responsible for ensuring all actions outlined in this LEMP are implemented. Any queries with regards to the mitigation and enhancement prescriptions should be addressed to the project ecologist and communication should be retained between the Development Biodiversity Champion and project ecologist throughout the project. The project ecologist's contact details are located on the title page of this report. It is recommended that the Biodiversity Champion informs the project ecologist of the commencement of enhancement installation works and provides updates where necessary. Once the ecological enhancements have been installed, a Post-Development Biodiversity Champion should be allocated who has influence on site once the development is complete, such as a long-term maintenance contractor. The Post-Development Biodiversity Champion will be responsible for ensuring all recommended management is undertaken and any associated remedial measures are completed where necessary.
Post-development site visit by a Qualified Ecologist	A post-development site visit by a qualified ecologist will be undertaken to confirm the successful installation of the biodiversity enhancements and proposed soft landscaping. A short report will be produced detailing the results of the site visit and any remediation recommendations, if necessary.
Wildlife Sensitive Lighting Strategy	Any proposed external lighting will be installed in accordance with current guidance issued by the Bat Conservation Trust and Institute of Lighting Professionals: <i>Guidance Note 08/23: Bats and Artificial lighting in the UK</i> (BCT & ILP 2023). The below strategy utilises light prescriptions detailed within this guidance to limit impacts of artificial lighting on bats and other light sensitive species potentially utilising retained habitats on and directly adjacent to the site including badgers and hedgehogs. In particular, the lighting strategy seeks to influence the lighting design so that impacts can be avoided to key habitats of value including: • The species-specific habitat enhancements detailed below, predominantly the bird and bat boxes. • Newly proposed landscaping including new hedgerows, trees, and a pond. • Retained habitats on and directly adjacent to the site such

	The following lighting design prescriptions are considered suitable for the type and scale of the Development to minimise the impacts of artificial lighting on site or within the public realm on bats and other light sensitive species. Lighting design prescriptions recommended for the Site comprise: • Reducing the operating time of any installed public realm lighting and levels of illuminance provided via: Part-night operation. Turning off lights between certain hours, for example between midnight and 06:00. The use of motion sensors will be avoided to ensure no unnecessary light spill occurs during night-time hours. Where the use of motion sensors cannot be avoided, lights must be set to be turned on for no longer than 1 minute. • Avoiding light spill via: The use of directional lighting by using luminaires with rear shields and an upwards lighting ratio of zero; and Consideration to the height and spacing between lighting columns where practicable. Examples include stud LED or footpath lighting. • Light type: Use of lamps that minimise UV emissions or use UV filters to reduce the attractiveness of the lamp to invertebrates; Use high-pressure sodium or LED lamps, ideally warm white as this has a low relative attractiveness of invertebrates; Installing lighting systems that deliver no greater than a 3lux average illuminance, with a maximum horizontal illuminance of 0.6 uniformity (subject to appropriate maintenance factors); and The use of landscaping as to block light spill where appropriate.
Precautionary methods of working – badgers and hedgehogs	No evidence indicating the presence of badgers or hedgehogs was recorded on site during the site survey. However, the presence of these species foraging and/ or commuting on site for transient periods cannot be discounted. The following precautionary working methods will therefore be adhered to during construction: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which mammals could use. It is noted that the recommended lighting strategy to reduce impacts to bats will also benefit badgers and hedgehogs. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.
Precautionary methods of working – Nesting birds	All tree, hedgerow and scrub removal works should be undertaken outside the core breeding bird season, which is typically between 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken by a qualified ecologist prior to the commencement of work. All active nests will need to be retained until the young have fledged.

Precautionary methods of working – Reptiles and common amphibians	<i>Ecological Clerk of Works</i> A qualified ecologist will be present on site to act as an ecological clerk of works (ECoW) during the clearance of vegetation of value to reptiles and amphibians. The ECoW will complete a toolbox talk to contractors immediately prior to vegetation clearance works to highlight the potential presence of reptiles and amphibians and to outline indicators of their presence. <i>Pre-development vegetation clearance</i> Precautionary methods of working when removing vegetated habitats of value to reptiles and amphibians including ponds, scrub and grassland, is required to prevent causing injury or death to these species' groups during development works. Vegetation clearance works must take place outside of the typical hibernation period for reptiles and amphibians, which is typically between November and February. Reptiles and amphibians are mostly torpid during this timeframe and are thus most vulnerable to injury or death. Undertaking vegetation clearance works during their active period, typically between March and September, will allow individuals to disperse unperturbed to adjacent retained habitats. Vegetation removal will comprise a phased cutting method in addition to cutting in systematic patterns. The phased cutting method will be undertaken in two stages; the first cut will remove all vegetation to approximately 200-300mm from ground level and the second cut will be to ground level/ bare ground. Reptiles and amphibians are most likely to be present at or just below ground level; the phased technique allows any individuals present at this vegetation level to disperse. The systematic vegetation cutting must be applied to both cutting phases and comprises cutting systematically towards areas of retained habitat to encourage any individual reptiles and amphibians to retreat to retained habitat unharmed. This method also prevents the creation of habitat islands during the second cutting phase which has potential to trap reptiles and amphibians in isolated pockets of habitat and thus increase the potential for injury or death during works. A suitable systematic cutting technique is exemplified below on Figure 1. Once the sensitive vegetation clearance has been completed, this area will then be managed as bare ground or very short vegetation (<100mm) which is unsuitable to support reptiles and amphibians for prolonged periods and is likely prevent individuals from recolonising this section of the site prior to works. All vegetation arisings created from the cutting will be removed from the area; the arisings will be used to create new hibernacula within the
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retained habitat sections on site. This will enhance the retained habitats for reptiles and amphibians whilst ensuring the cleared sections of the site remain unsuitable to support this species during construction.

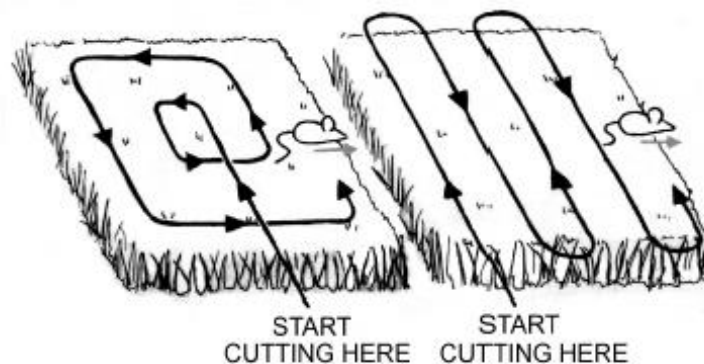


Figure 1: A schematic representation of vegetation cutting patterns as best to eliminate terrestrial opportunities for reptiles and amphibians.

Pollution prevention

Overview

Pollution resulting from increased levels of noise, dust, and water runoff during construction have potential to pollute retained habitats and could deter protected and/ or notable species from using the site and/ or damage the ecological value of existing landscape features. To limit impacts of pollution resulting from the construction phase of the development, construction works must be completed in accordance with current Pollution prevention guidelines detailed within the following guidance documents:

- *PPG5: Working in, near, or over water courses* (Environment Agency 2014)
- *PPG6: Working at Construction and Demolition Sites* (Environment Agency 2014)

Considering these documents, the below mitigation prescriptions are considered suitable to mitigate impacts of pollution during the construction phase of the development. The Development Biodiversity Champion will be responsible for ensuring the below mitigation recommendations are undertaken successfully during the works.

Materials Storage and water run-off:

It is recommended that the site manager ensures that:

- No stockpiles are created on exposed ground areas and ensure that all materials and chemicals are stored securely and safely on site in accordance with current Control of Substances Hazardous to Health (COSHH) regulations (HSE 2002).
- Stockpiles are located within the development area only and on level ground to prevent any accidental run-off and as far from retained waterbodies as is practicable.
- Contaminated materials, chemicals, and other hazardous substances must be stored on an impermeable surface, in a bunded area, within the development area only as per current containment system guidelines (CIRIA 2014).
- All chemicals and hazardous substances must be stored away from areas where there is heightened risk of damage from impact or collision such as areas of intense vehicle and pedestrian movement.
- All chemicals and hazardous substances must be labelled, and their containers effectively sealed when not in use. Such container must be inspected regularly and fit for purpose.
- Any damaged or old containers must be replaced in line with the duty of care requirements. Note such containers may be considered hazardous waste and their disposal must be undertaken appropriately.
- Staff are trained in use of spill kits and emergency procedures.
- Ensure there is a designated 'responsible person' on site at all times.
- Lock storage facilities when not in use.

Airborne particle suppression:

It is recommended that the site manager ensures that:

- Effective water suppression is used during construction operations. Handheld sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.
- Bag and remove any biological debris or damp down such material before demolition.
- Carry out regular site inspections to monitor compliance.
- Ensure all vehicles switch off engines when stationary.
- Avoid the use of petrol- or diesel-powered generators and use mains electricity or battery power where possible.
- Only use cutting, grinding, or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction.
- Ensure an adequate water supply on the site for effective dust/ particulate matter suppression/ mitigation, using non-potable water where possible and appropriate.
- Use enclosed chutes and conveyors and covered skips.

Implementation of the Waste Hierarchy:

	The site manager must ensure that all construction activity is completed in accordance with the Waste Hierarchy (Defra 2011) in an attempt to reduce the amount of waste produced during the construction phase of the development. As such, the construction phase must be completed in accordance with the below core principles: <i>In the first instance:</i> • Re-use products and materials where possible. • Recycle and compost material resources where possible. • Attempt to recover energy from waste. <i>Where none of the above options offer an appropriate solution, waste disposal is the final option:</i> • Only transfer controlled waste to an “authorised person” (Waste Collection Authority, the holder of an Environmental Permit, Registered Water Carrier or Waste Disposal Authority). • Ensure that non-hazardous waste is transferred under a Waste Transfer Note which must be retained for two years. • Hazardous waste is moved under a waste consignment note that provides a clear description of the waste material. The consignment note must be retained for three years. • The waste is the responsibility of the company until it has been fully recovered or finally disposed of. Noise: The site manager must ensure that noise levels are kept to a minimum in accordance with best practice as defined in the Control of Pollution Act 1974 to avoid unacceptable levels of noise and vibrations. Further guidance can be found in British Standard 5228-1:2009. Such measures applicable to the proposed development primarily include agreed working hours limiting night work, using the quietest equipment and plant available, shutting down equipment when not in use, and completing deliveries during working hours only. Most notably, prescriptions as to limit noise of plant machinery as detailed within Table B.1 within the code of practice for noise control (British Standards Institution, 2014) is likely to have the most significant impact during construction activity. Table B.1 is provided in Appendix 4.
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3.2 Enhancement

Ecological enhancement of the site is proposed through the installation of habitats through new landscaping and the provision of species-specific enhancements including roost/ nest boxes and refugia. Details on the installation and subsequent management of new habitats and species-specific enhancement measures are detailed below in **Table 2** and illustrated on the plan in **Appendix 3**.

Table 2: Enhancement

Ecological Enhancement	Specification
Wildlife pond creation	Overview: A pond measuring 0.006ha will be created on site as shown on the proposed development plans provided in Appendix 1. Objectives: • To replace the pond that is being removed in the development with a pond a greater ecological value. • To develop habitat suitable to support a range of protected and/ or notable species including; aquatic and terrestrial invertebrates, amphibians, and reptiles. • To create a pond in accordance with current guidance provided by the Freshwater Habitat Trust as detailed within the following documents: <i>Pond Creation Tool Kit Sheet 4: Pond Design</i>¹ and <i>Creating Ponds for Amphibian and Reptiles</i>². To achieve this, the following core structural principals will be adhered to for pond creation. Figures 2, 3, and 4 below exemplify the benefits of these key structural principles. a. Ensure that almost all pond slopes are shallow, less than 1:5 (12°) and preferably less than 1:20 (3°); b. Create underwater bars and shoals to benefit aquatic plants; c. Ensure a clean water supply; d. Create variable pond depths; e. Plant submerged and emergent vegetation; f. Ensure an absence of fish; and g. Attempt to deter Water fowl from utilising ponds.

¹ <https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/pond-design.pdf>

² <https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Amphibians- Common-Toad-Great-Crested-Newt-and-Grass-Snake -new-logo.pdf>

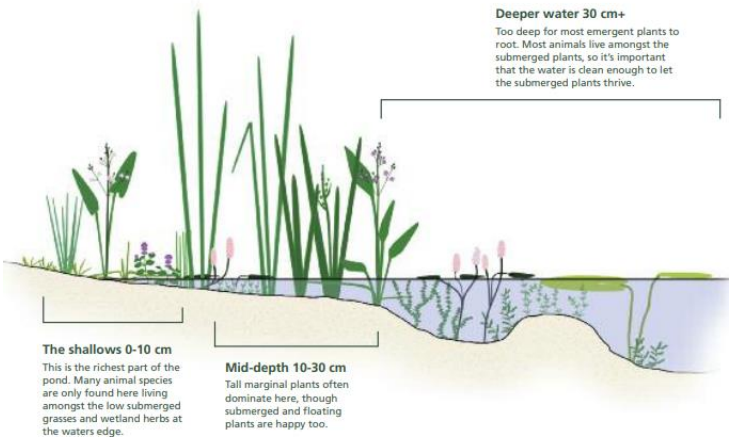


Figure 2: A schematic representation of pond characteristics that provide the best opportunities for biodiversity. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

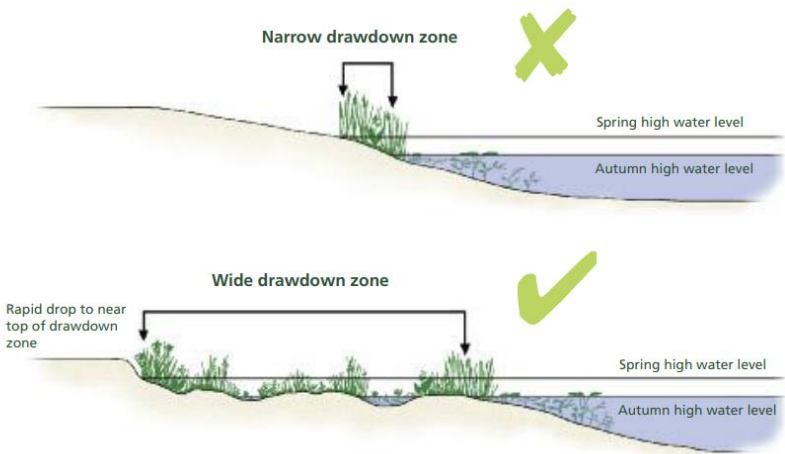


Figure 3: A schematic representation of an optimal pond drawdown zone. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

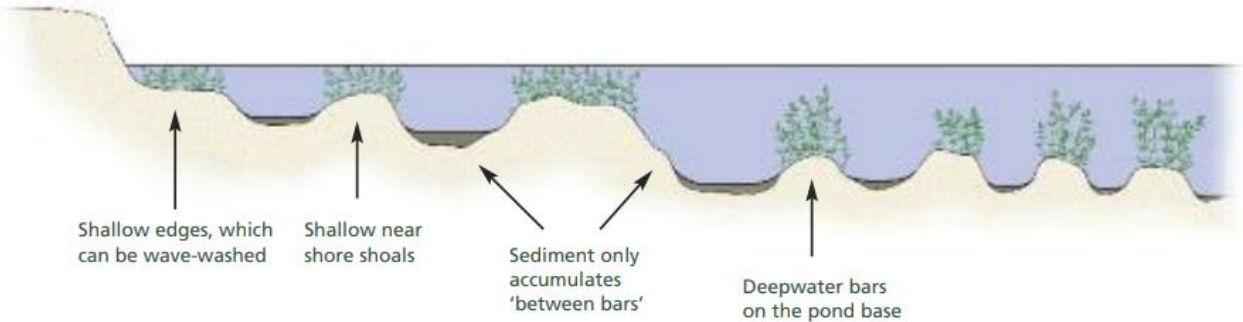


Figure 4: A schematic representation of the value of internal shoals/ islands that prevent domination of sediment accumulation. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

Creation Method:

- Should the underlying ground be loamy and subsequently free draining, a pond liner permeable to vegetation growth should be used to ensure effective water retention;
- The initial shape of the pond should be dug out using suitable machinery for the size of the pond, such as a small digger.
- More refined alterations to the pond structure should then be created using more refined tools; this is best done using hand tools.
- Once the shape and structural diversity of the pond has been established the pond should be planted with emergent vegetation and subsequently filled with water using a clean water source.

Management Prescriptions:

Table 2.1: Pond management prescriptions

Management	Detail	Rationale
Weed growth should be cut back regularly upon the banks and amongst emergence vegetation.	Twice annually in early March/ and in Autumn	Encourages establishment of good perennial ground cover and prevent colonisation of non-native species.
When removing vegetation, do	Twice annually in	Ensure not just one habitat within the

	not focus on one plant community but evenly remove from all to maintain a suitable habitat and species diversity.	early March/ and in Autumn	pond is removed at the same time
	Keep approximately 90% of the water surface free of dense macrophyte coverage.	Check annually in Autumn	To prevent significant duckweed and other filamentous algae coverage; amphibians use open water for breeding display.
	Remove plant detritus and litter	Check annually in Autumn	Prevents organic matter and litter building up and preventing exposure to sunlight.
	Remove non-native or other unwanted plants and dispose. Where possible rinse the removed plants and replace water in the pond	Check annually in Autumn	Prevents organic matter building up Puts back wildlife in pond living within the removed plants
	Should the pond freeze over a hole in the ice should be created	Check annually in Winter	Allows air breathing wildlife to gain oxygen
	Never artificially stock with fish	At all times	Fish predate amphibians and their young.
	Never connect newly installed pond to any other water bodies or install artificial drainage outlets.	At all times	To prevent allowing the pond to drain artificially and to reduce potential for fish colonisation
Native Hedgerow Planting	Overview: Approximately 150m of hedgerow will be installed on site as shown on the proposed development plans provided in Appendix 1. Species are not described in the proposed plan, so a mix of the following native species are recommended: • Hawthorn - <i>Crataegus monogyna</i> • Guelder Rose - <i>Viburnum opulus</i> • Blackthorn - <i>Prunus spinosa</i> • Field Maple - <i>Acer campestre</i> • Elder - <i>Sambucus nigra</i> • Holly - <i>Ilex aquifolium</i> • Hazel - <i>Corylus avellana</i>		

Objectives:

- To create a hedgerow to border around the gardens and pond within the new development creating privacy and a natural buffer.
- To create dense hedgerows that will provide foraging, commuting, and refugia opportunities for notable species groups including reptiles, amphibians, bats, birds, badgers, and hedgehogs.
- To ensure that only native species are planted and that at least 5 different woody species are used within every 30m of hedgerow.
- Ensure cultural techniques are employed which use a variety of mulches and organic fertilisers and which minimise the use of chemicals and peat wherever possible.

Creation Method:

- **Ground preparation**

Prepare the ground by digging over a strip approximately 60-90cm (2-3ft) wide and one spit (or spade blade) deep. Soils that become waterlogged in winter may require a permanent drainage system. Alternatively, form the soil into a ridge about 15-20cm (6-8in) high and 50-70cm (20-28in) across to plant into.

- **Planting**

Plants should be positioned set back from hardscaped boundaries to allow space for the hedgerow to develop and mature prior to requiring any significant management/ cutting back. Plant density should focus on achieving a hedgerow width >1m; as such, plants should be planted in a staggered double row approximately 45-60cm apart, where individual plants are planted 90cm apart within each row.

- **Timing**

It is best to prepare the land during the summer ready for planting between November and March. Planting before the new year helps ensure better rooting and subsequent establishment including faster growth.

Recommended management:

Table 2.2: hedgerow planting management prescriptions.

Management	When	Rationale
At the end of each growing season all plant failures are to be 100% replaced	When required	To maintain amenity and wildlife value.
If required, provision of stakes and guards. Guards to be left on	N/A	Protect from damage

	for a minimum of 5 years Stakes should be checked and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed Remove weeds Application of bark mulch at a depth of 50 mm Do not apply chemical fertilisers Apply a light dressing of well-rotted manure Removal of spent flowers from perennial plants should be removed through 'deadheading' Watering should be undertaken before and after planting out and as necessary for the continued thriving of all planting. Check and replace any plant failures once a year	Every six months (for one to two years if plant has grown well. When required When required N/A Annually in the winter Twice annually, late spring and in the Autumn. When required For the first 5 years	Maintain protection Reduce competition for resources nutrients etc.by weeds Reduce competition for resources nutrients etc.by weeds The use of chemical fertilisers will encourage vigorous grasses and weeds to grow Note the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow. Allows plants to place more energy into re-growth. Ensures plants do not dry out and subsequently fail. To ensure no gaps form.
Native tree planting	Overview: 13no. Native trees are proposed to be planted throughout the site as shown on the proposed development plans provided in Appendix 1. Species are not described in the proposed plan, so a mix of the following native species are recommended: • Common Lime - <i>Tilia × europaea</i> • Hornbeam - <i>Carpinus betulus</i> • English Oak - <i>Quercus robur</i> • Silver Birch - <i>Betula pendula</i>		

- Wild Cherry - *Prunus avium*
- Beech - *Fagus sylvatica*

Objectives:

- To plant native trees that will provide pollinating, foraging, and refuge opportunities for protected and/ or notable species groups including badgers, bats, birds, hedgehogs, invertebrates, and reptiles.
- Ensure that good horticultural practice is employed to encourage long-term health and vitality of all trees and shrubs.
- Ensure well-balanced crowns and/ or natural shape by preventing over competition.

Creation Method:

- **Ground preparation and planting**

Each tree should be planted within a hole three times as wide of the supplied pot and of a similar depth. Root balls should be soaked thoroughly in water before planting and root balls should be loosened to expose restricted roots before planting. The planted trees should then be backfilled ensuring there are no air pockets around roots or any roots protruding out of the ground.

- **Timing**

It is best to prepare the land during the summer ready for planting between November and March. Planting trees and shrubs before the new year helps ensure better rooting and subsequent establishment including faster growth during the first growing season.

Recommended management:**Table 2.3** New tree planting management prescriptions

Management	When	Rationale
At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To maintain amenity and wildlife value.
If required, provision of stakes and guards. Guards to be left on for a minimum of 5 years	N/A	Protect from damage
Stakes should be checked and any broken or damaged stakes during	When required; checked annually in Autumn.	Maintain protection

	this time would be removed (as above) and replaced with ties re-fixed		
	Remove weeds	When required; checked twice annually in early spring and in Autumn.	Reduce competition for resources nutrients etc.by weeds
	Application of bark mulch at a depth of 50 mm	Immediately after planting and then when required; checked annually in Autumn.	Reduce competition for resources nutrients etc.by weeds
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow
	Apply a light dressing of well-rotted manure	Annually in the winter	Note the overuse of manure fertilisers will encourage vigorous grasses and weeds to grow.
	Watering should be undertaken before and after planting out and as necessary for the continued thriving of all planting.	When required; provide more water during periods of draught and less water during times of prolonged rain.	Ensures plants do not dry out and subsequently fail.
	Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.
Provision of bat boxes	Two bat boxes will be installed onto new buildings in accordance with the proposed development. The proposed locations are shown on the plan in Appendix 3. Details of the bat boxes to be installed are as follows: - The recommended bat boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to require minimal maintenance and have a lifespan of 25 years plus. 2No. Vivara Pro Low Profile Woodstone Bat Boxes (or similar specification) will be installed, as shown in Figure 5. This bat box type is suitable to support a range of species including noctules <i>Nyctalus noctula</i> and soprano pipistrelles <i>Pipistrellus pygmaeus</i>. These species represent Species of Principal Importance as listed on Schedule 41 of the NERC Act (see Appendix 5). - The bat boxes will be positioned 3-5m above ground level facing a south elevation with a clear flight path to and from the entrance, away from artificial light and facing vegetated habitats.		



Figure 5: Vivara Pro Low Profile Woodstone Bat Box (image credit: <https://www.nhbs.com/equipment?qtview=194583>)

Recommended management:

The proposed bat boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bat boxes will increase the chances of occupation by roosting bats. However, it is recommended that the bat boxes are inspected annually for the first five years outside of the typical active season for bats (May to September inclusive) following installation. Bat boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.

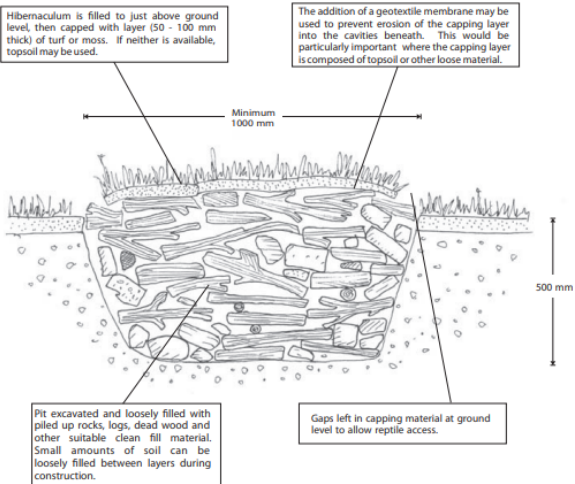
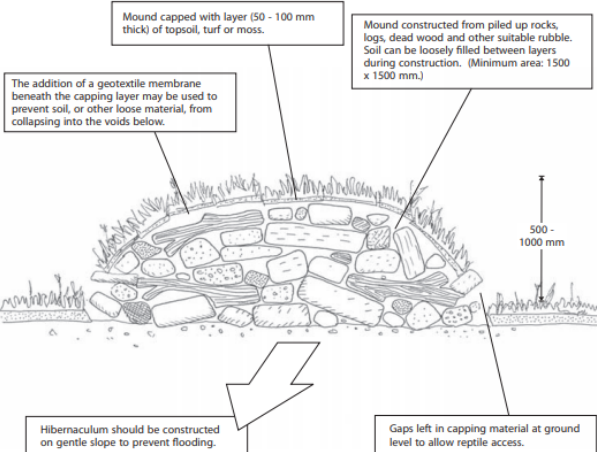
Provision of bird boxes

Two bird boxes will be installed onto buildings in accordance with the proposed development. The proposed locations are shown on the plan in **Appendix 3**. Details of the bat boxes to be installed are as follows:

- The recommended bird boxes will be constructed of woodcrete/ woodstone. Boxes of this construction are known to have minimal maintenance and have a lifespan of 25 years plus.
- 2 No. Schwegler 1B Nest Boxes (or similar specification) will be installed, as shown in **Figure 6**. The bird box type is designed to provide enhanced nesting opportunities for a variety of common garden species.
- The bird boxes will be positioned approximately 3m above ground level facing a northern elevation where they will be sheltered from prevailing wind, rain and strong sunlight.



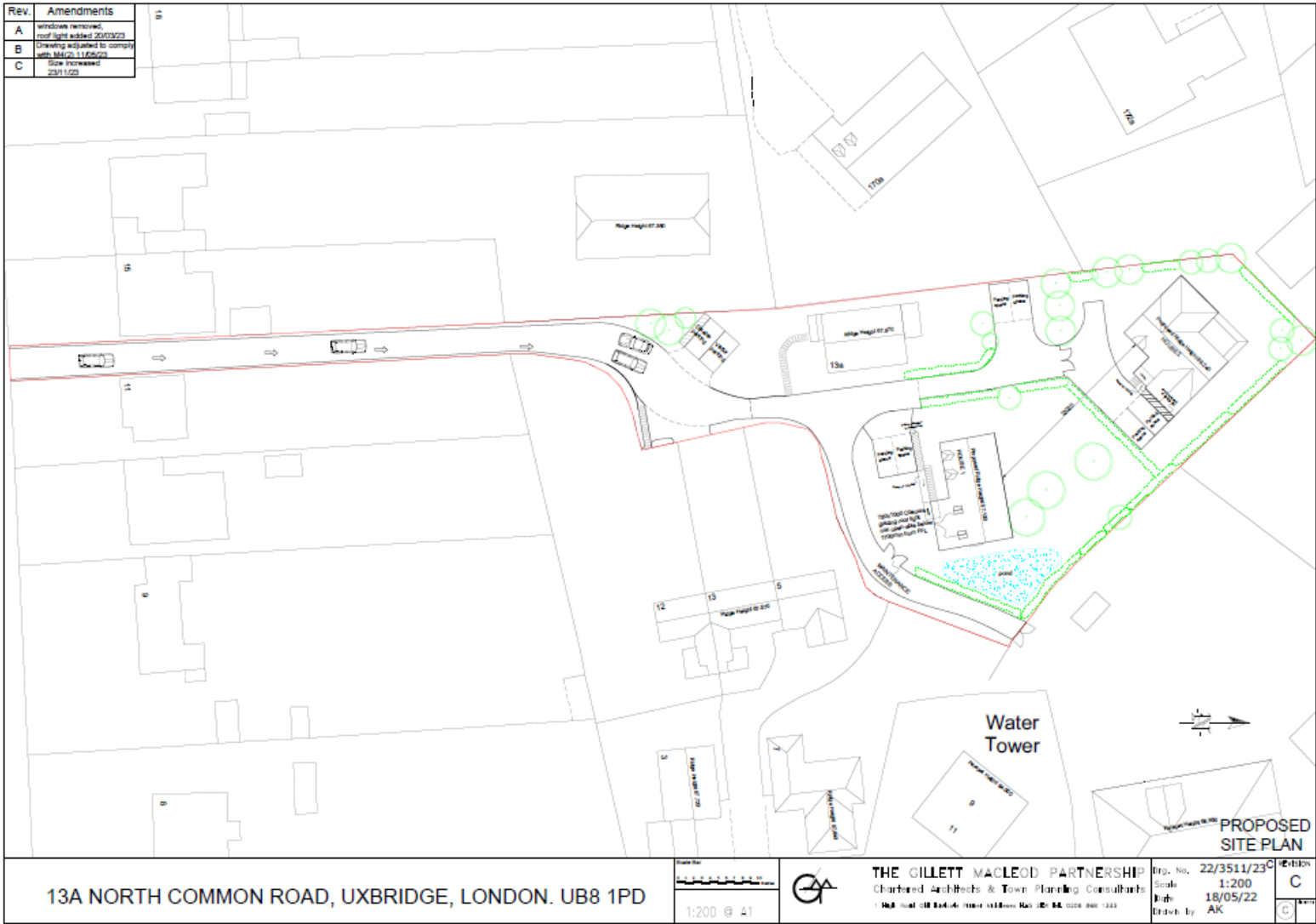
Figure 6: Schwegler 1B Nest Box (image credit wildcare.co.uk)

	Recommended Management: The proposed bird boxes are designed to require no management or maintenance. Furthermore, preventing physical disturbance of bird boxes will increase the chances of occupation by nesting birds. However, it is recommended that the bird boxes are inspected annually for the first five years outside of the typical nesting bird season (March to September inclusive) following installation. Bird boxes must be replaced if they are damaged, removed, or have fallen from their recommended location.
Hibernacula creation	Two hibernacula will be created using natural materials such as logs collected from the site (where possible), stone, vegetation arisings, and earth to provide additional refugia opportunities for amphibians and reptiles post-development. These should be placed in a south facing direction, adjacent to the new pond that is being created. A specification for the construction of the hibernacula is provided on Figure 7 below. The proposed locations of the hibernacula are shown on the plan in Appendix 3. Hibernaculum on free-draining ground Where ground conditions allow, the hibernaculum should be incorporated into a shallow pit. This design is more likely to remain frost-free, and will be less obtrusive and thus unlikely to be subject to interference.  Hibernaculum is filled to just above ground level, then capped with layer (50 - 100 mm thick) of turf or moss. If neither is available, topsoil may be used. The addition of a geotextile membrane may be used to prevent erosion of the capping layer into the cavities beneath. This would be particularly important where the capping layer is composed of topsoil or other loose material. Minimum 1000 mm 500 mm Pit excavated and loosely filled with piled up rocks, logs, dead wood and other suitable clean fill material. Small amounts of soil can be loosely filled between layers during construction. Gaps left in capping material at ground level to allow reptile access. Hibernaculum on impermeable ground Where ground conditions are impermeable, then an 'above-ground' or mounded design should be utilised in order to prevent the hibernaculum from flooding. This design should also be used if it is not possible to excavate a pit for any other reason.  Mound capped with layer (50 - 100 mm thick) of topsoil, turf or moss. The addition of a geotextile membrane beneath the capping layer may be used to prevent soil, or other loose material, from collapsing into the voids below. Mound constructed from piled up rocks, logs, dead wood and other suitable rubble. Soil can be loosely filled between layers during construction. (Minimum area: 1500 x 1500 mm.) 500 - 1000 mm Hibernaculum should be constructed on gentle slope to prevent flooding. Gaps left in capping material at ground level to allow reptile access. Figure 7: A schematic representation of a man-made hibernaculum.

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Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: Ecological Enhancement Plan



Appendix 4: Table B.1 from the code of practice for noise control (British Standards Institution. 2014)

Table B.1 Methods of reducing noise levels from construction plant

Plant	Noise reduction of plant			Alternative plant
	Source of noise	Possible remedies (to be discussed with machine manufacturers)	A-weighted sound reduction dB	
Hammer drive piling equipment	Pneumatic/diesel hammer or steam winch vibrator driver	Enclose hammer head and top of pile in acoustic screen	5 to 10	Bored piling Vibratory system
	Sheet pile	Acoustically dampen sheet steel piles to reduce levels of resonant vibration		Drop hammer completely enclosed in box with opening at top for crane access
	Impact on pile	Use resilient pad (dolly) between pile and hammer head. Packing needs to be kept in good condition		Steel jacket completely enclosing drop hammer with dolly and polystyrene chips fed to impact surface to dissipate energy
	Cranes cables, pile guides and attachments	Careful alignment of pile and rig		Pressed-in piling which generates its driving force from the frictional restraint of other piles
	Power units or base machine	Fix more efficient sound reduction equipment or exhaust. Acoustically dampen panels and covers. When intended by the manufacturer, engine panels need to be kept closed. Use acoustic screens when possible		
Earth-moving plant: • bulldozer • compactor • crane • dump truck • dumper • excavator • grader • loader • scraper	Engine	Fit more efficient exhaust sound reduction equipment Manufacturers' enclosure panels need to be kept closed	5 to 10	Alternative super silenced plant might be available. Consult manufacturers for details

Table B.1 Methods of reducing noise levels from construction plant (*continued*)

Plant	Noise reduction of plant			Alternative plant
	Source of noise	Possible remedies (to be discussed with machine manufacturers)	A-weighted sound reduction dB	
Compressors and generators	Engine Compressor or generator body shell	Fit more efficient sound reduction equipment	Up to 10	Super silenced plant is available. Consult manufacturers for details Electric-powered compressors are available as opposed to diesel or petrol Sound-reduced compressor or generator can be used to supply several pieces of plant. Use centralized generator system
		Acoustically dampen metal casing Manufacturers' enclosure panels need to be kept closed		
	Total machine	Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured	Up to 10	
		Enclose compressor or generator in ventilated acoustic enclosure	Up to 20	
Pneumatic concrete breaker, rock drills and tools	Tool	Fit suitably designed muffler or sound reduction equipment to reduce noise without impairing machine efficiency	Up to 15	Hydraulic and electric tools are available For large areas of concrete, machine designed to break concrete in bending can be used Thermic lance
		Ensure all leaks in air line are sealed		
	Bit	Use dampened bit to eliminate ringing		
	Total machine	Erect acoustic screen between compressor or generator and noise-sensitive area. When possible, line of sight between top of machine and reception point needs to be obscured	Up to 10	
		Enclose breaker or rock drill in portable or fixed acoustic enclosure with suitable ventilation	Up to 20	
Rotary drills, diamond drilling and boring	Drive motor and bit	Use machine inside acoustic shed with adequate ventilation	Up to 15	Thermic lance

Appendix 5: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres” however they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species**The Habitats Directive**

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;

- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992

- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency for any development works liable to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is not possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are liable to affect habitats known to support water voles, the relevant countryside agency must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency (e.g. Natural England) for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
-

Effects on development works:

Works which are liable to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

The white clawed crayfish *Austropotamobius pallipes* receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:

The relevant countryside agency will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency for works which are liable to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site however it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. ***include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;***
2. scientific and educational purposes,
3. ringing or marking
4. conserving wild animals

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.