



Landscape and Ecological Management Plan

Wolves Lane Horticultural Centre, Wolves Lane, Wood Green, London, N22 5JD

Practice Architecture

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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 was instructed by Practice Architecture to undertake a Landscape and Ecological Management Plan (LEMP) for a development at Wolves Lane Horticultural Centre, Wolves Lane, Wood Green, London, N22 5JD (hereafter referred to as “the site”).

The site has been subject to previous ecological assessment by Arbtech Consulting Limited, comprising the following:

- A Preliminary Ecological Appraisal and Preliminary Roost Assessment (Arbtech Consulting Ltd. 2020); and
- A Biodiversity Net Gain Assessment (Arbtech Consulting Ltd. 2023).

1.2 Project Description

The assessment was required to inform a planning application which details a development comprising the demolition of existing buildings and subsequent construction of new horticultural facilities including new buildings, landscaping, and associated infrastructure (hereafter referred to as “the proposed development”). The proposed development plan and landscaping typology plan are provided in **Appendices 1 & 2**.

1.3 Site Context

The site is located at National Grid Reference TQ3136091237 and has an area of 0.403ha. The site is characterised by a horticultural centre which includes large green houses and other ancillary buildings alongside adjacent landscaping and vegetation. Habitats recorded on site include buildings, hardstanding, scattered scrub, amenity grassland, introduced shrubs, and scattered trees. The site is located within a highly urbanised location in north London and is enclosed by dense residential development to the north, Wolves Lane to the East, White Hart Lane recreational ground to the south, and St. Thomas More School to the west. A site location plan is provided in **Appendix 3**.

1.4 Scope of This Report

The aims of this LEMP are to provide mitigation prescriptions to ensure the protection of existing ecological features and biodiversity that may be present on and directly adjacent to the site during construction and to provide enhancements to ensure the prolonged value of the site to biodiversity post-development. Furthermore, this LEMP provides management prescriptions to ensure the effective installation of new landscaping and that target habitat conditions of relevance to the Biodiversity Net Gain Assessment are achieved over a 30-year term, the requirement of which is stipulated through the Environment Act 2021.

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 PEA and PRA undertaken in October 2020 (Arbtech Consulting Ltd. 2020).

2.1 Habitats recorded on Site

The site is characterised by a horticultural centre which includes large green houses and other ancillary buildings alongside adjacent landscaping and vegetation.

Habitats recorded on site include:

- Buildings;
- Hardstanding;
- Scattered scrub (within the parkland/ scattered trees adjacent to the south site boundary);
- Amenity grassland (within the parkland/ scattered trees adjacent to the east site boundary);
- Introduced shrubs; and
- Scattered trees.

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, albeit limited:

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

No significant impacts are anticipated pertaining to any other protected and/ or notable species.

Nesting birds

Due to the small size of the site and limited extent of habitats present, the site is not considered suitable to support a significant population of protected and/or notable population of breeding birds. However, habitats recorded on site are assessed to provide nesting opportunities for common species of breeding birds in the form of ornamental planting, scattered scrub, and scattered trees, albeit limited.

Badgers

Habitats recorded on and directly adjacent to the site are assessed to provide suitable foraging and commuting opportunities for badgers in the form of scattered scrub, amenity grassland, and ornamental planting, albeit limited. Although no badger setts were recorded within 30m of the development area, there is access to the site from adjacent green areas for badgers and thus the future presence of badgers on site for transient periods cannot be discounted.

Hedgehogs

Habitats recorded on and directly adjacent to the site are assessed to provide suitable foraging, commuting, and refuge opportunities for hedgehogs in the form of scattered scrub, amenity grassland, and ornamental planting, albeit limited. Although no evidence indicating the presence of hedgehogs was recorded during the site survey, there is access to the site from adjacent green areas for hedgehogs and thus the future presence of hedgehogs on site for transient periods cannot be discounted.

Reptiles

Habitats recorded on and directly adjacent to the site are assessed to provide foraging, commuting, and refuge/ hibernation opportunities for reptiles. Foraging and commuting opportunities are present in the form of scattered scrub which includes tall ruderal vegetation. The density of this vegetation is also suitable for refuge and there is potential connectivity for reptiles to disperse to the site from adjacent green areas. However, the site is located in a highly urban location and any reptiles present in the wider landscape would represent a remnant population, which reduces the potential presence of reptiles locally. Although considered unlikely, the presence of reptiles on site cannot be discounted.

2.3 Scope for Mitigation

Above, the site provides suitable opportunities to support protected and/ or notable species including common nesting birds, badgers, hedgehogs, and reptiles. Although the site is not assessed to represent a significant resource for these species in the context of the wider landscape, their presence of transient periods cannot be discounted. As such, mitigation is considered necessary to reduce potential impacts to these species to an acceptable level during development activity.

2.3 Proposed Enhancements

There is scope to provide ecological enhancement of the site through the provision of species-specific enhancements and the creation of new high value habitats through effective landscaping. Species-specific enhancements proposed for the site include the installation of bat boxes, bird boxes, insect refugia, and reptile refugia. Furthermore, the landscape proposals (see **Appendices 1 & 2**) include the installation of high value habitats that will further enhance the site for biodiversity.

Prescriptions with regards to the appropriate installation and management of species-specific enhancements and new landscaping are detailed below.

3.0 Landscape and Ecological 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.
Precautionary Methods of Working – Badgers and Hedgehogs	No evidence indicating the presence of badgers or hedgehogs was recorded within the development area during the site survey. However, a disused badger sett was recorded within the wider site and there is suitable connectivity between the site and adjacent green areas of badgers and hedgehogs. The presence of these species foraging and/ or commuting on site for transient periods can therefore not be discounted. The following precautionary working methods will be implemented to prevent harm to these species during construction: • A pre-commencement check of the site for the presence of badgers and hedgehogs will be undertaken no more than 24 hours prior to the commencement of works. The pre-commencements checks will be undertaken by a suitably qualified ecologist and include a search for evidence indicating the presence of either species, including evidence indicating foraging and commuting behaviour in addition to sett building and refuge. Should any evidence be recorded indicating the presence of badgers or hedgehogs within habitats to be impacted by the works, an ecologist should be contacted for advice on how to progress the development in accordance with legislation and planning policy.

	- 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. - 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	Tree, scrub, and ornamental planting 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 suitably qualified ecologist no more than 24 hours prior to the commencement of vegetation clearance work. All active nests will need to be retained until the young have fledged.
Precautionary Methods of Working – Reptiles	<i>Ecological Clerk of Works</i> A suitably 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 comprising the areas of scrub and tall ruderal vegetation. The EcOW will complete a toolbox talk to contractors immediately prior to vegetation clearance works to highlight the potential presence of reptiles 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 comprising scrub and tall ruderal vegetation, is required to prevent causing injury or death to reptiles potentially present during development works. Vegetation clearance works must take place outside of the hibernation period for reptiles, which is typically between November and February. Reptiles 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 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 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 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, the affected areas will then be managed as bare ground or very short vegetation (<100mm) which is unsuitable to support reptiles 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 retained habitat sections on site. This will enhance the retained habitats for reptiles whilst ensuring the cleared sections of the site remain unsuitable to support this species during construction.

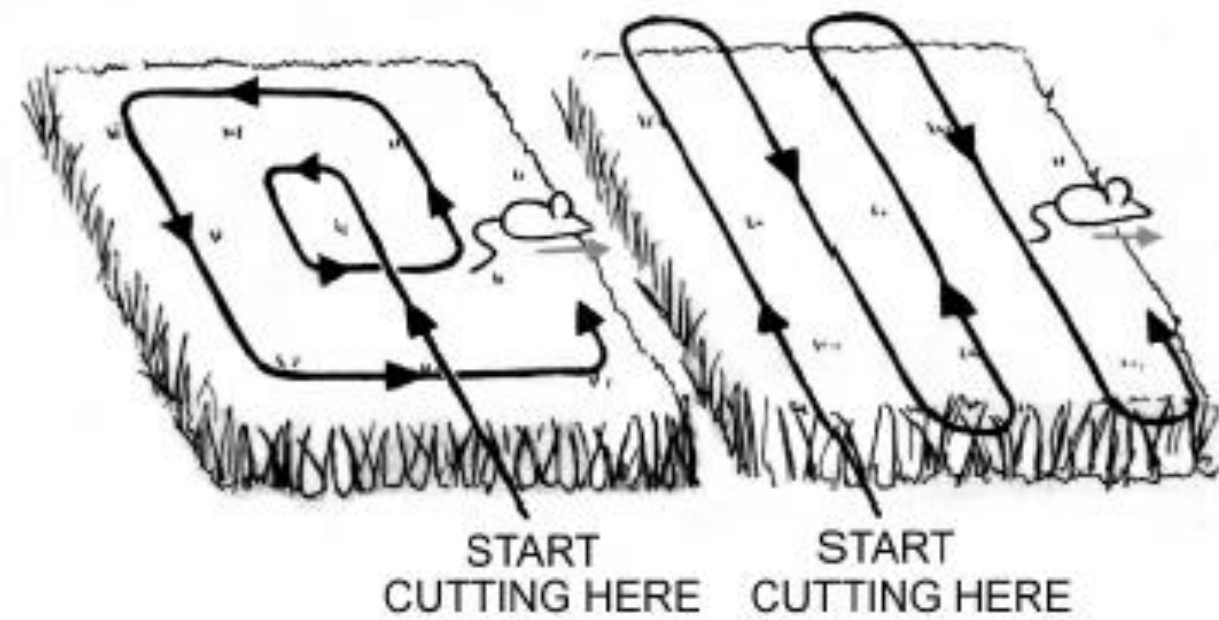


Figure 1: A schematic representation of vegetation cutting patterns as best to eliminate terrestrial opportunities for reptiles.

3.2 Provision of New Landscaping and Species-Specific Enhancements

Enhancement of the site and subsequent management prescriptions to ensure the ongoing biodiversity value of the site post-construction are detailed in **Table 2** below.

Table 2: Enhancement Prescriptions

Ecological receptor	Specification
Pond creation	Overview: A pond measuring 0.0019ha will be created on site, as shown as landscape type P9 on the landscape plans provided in Appendix 1 & 2. Objectives: • To create a pond of moderate condition in accordance with the BNG Assessment; • 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>

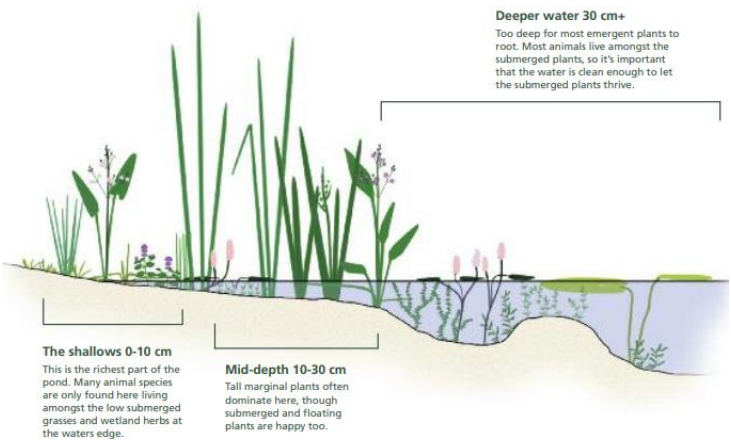


Figure 2: A schematic representation of pond characteristics that provide the best opportunities for biodiversity. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

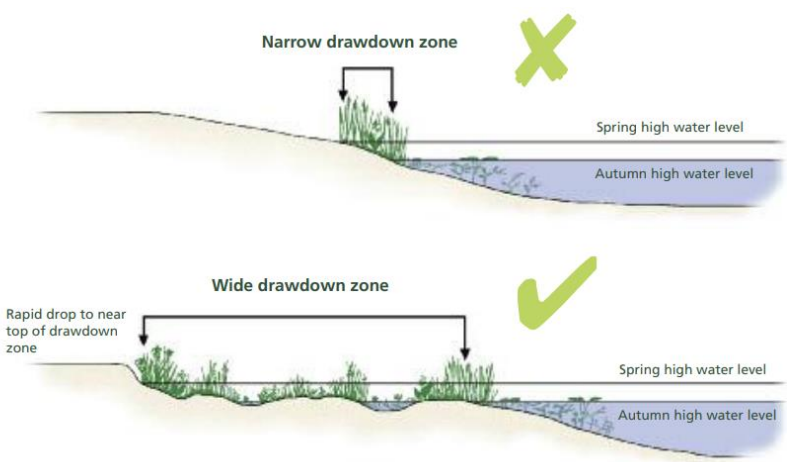


Figure 3: A schematic representation of an optimal pond drawdown zone. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

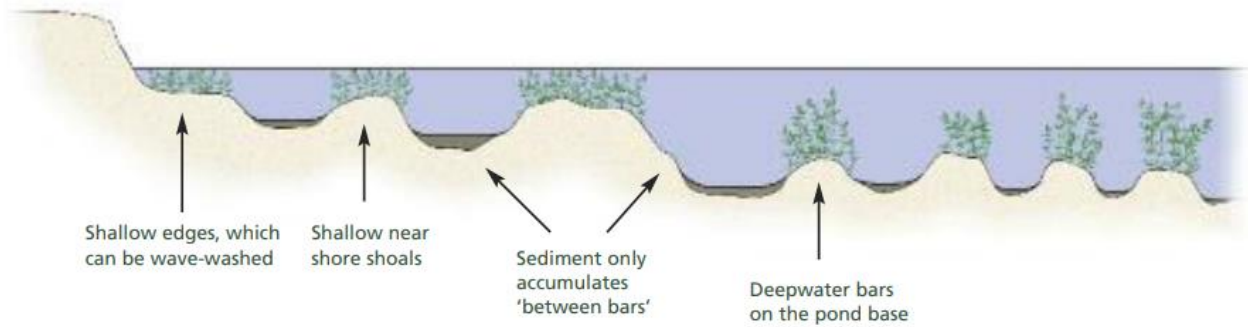


Figure 4: A schematic representation of the value of internal shoals/ islands that prevent domination of sediment accumulation. Reproduced from the *Pond Creation Tool Kit Sheet 4: Pond Design* guidance document.

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 over a minimum 30-year term:

Table 2.1: Pond management prescriptions			
Management	Detail	Rationale	BNG condition criteria compliance
Weed growth should be cut back regularly upon the banks and amongst emergence	Twice annually in early March/ and in Autumn	Encourages establishment of good perennial ground cover and prevents colonisation of non-native	6, & 9

	vegetation. When removing vegetation, do not focus on one plant community but evenly remove from all to maintain a suitable habitat and species diversity. Keep approximately 90% of the water surface free of dense macrophyte coverage. Remove plant detritus and litter. Remove non-native or other unwanted plants and dispose. Where possible rinse the removed plants and replace water in the pond. Should the pond freeze over a hole in the ice should be created. Never artificially stock with fish.	species. Twice annually in early March/ and in Autumn Check annually in Autumn Check annually in Autumn Check annually in Autumn Check annually in Winter At all times	Ensure not just one habitat within the pond is removed at the same time To prevent significant duckweed and other filamentous algae coverage; amphibians use open water for breeding display. Prevents organic matter and litter building up and preventing exposure to sunlight. Prevents organic matter building up Puts back wildlife in pond living within the removed plants Allows air breathing wildlife to gain oxygen Fish predate amphibians and their young.	3, 6, & 8 1, 3, & 6 1 & 8 6 n/a 7
Wildflower grassland creation	Overview: Areas of wildflower grassland covering a combined area of 0.008ha will be created on site, as shown as landscape type P2 on the landscape plans provided in Appendix 1 & 2. Objectives: - To create a neutral grassland of good condition in accordance with the BNG Assessment; - To create a successful and species rich wildflower grassland that will provide habitat for pollinating invertebrate species, that will in turn, provide foraging opportunities for notable species groups including bats, birds, badgers, and hedgehogs. - Ensure a healthy species diverse sward is maintained; - Ensure that a natural appearance is retained by utilising a seed mix alongside allowing native species of local provenance to recolonise from the seedbank;			

- Employ techniques that use organic fertilizers and minimise the use of chemicals wherever possible.

Creation Method:

- **Ground preparation**

The location of the proposed wildflower meadow creation currently comprises areas of dense vegetation and areas of hardstanding. For areas of ground currently covered by vegetation, any existing weeds should be removed through repeated cultivation and the land subsequently ploughed/ turned to bury all remaining vegetation. For areas of ground currently covered by hardstanding, the hard surface will need to be broken up and removed leaving exposed bare earth suitable for seeding. Once the land has been ploughed/ turned or cleared to bare earth, the soil should be rolled or stamped to produce a firm surface ready for seeding. It is noted that the underlying soil substrate is expected to contain a high clay content in places. Clay is generally unworkable when very wet or very dry and autumn sowings may therefore not be possible. It is often better to dig or plough the soil in the autumn, allow winter frosts to break down the clods, and prepare a seedbed in the spring.

- **Seeding**

To be undertaken in the spring between April and May. The following seed rates are recommended:

40 kg/ha of a wildflower and grass seed mix.

Inclusion of yellow rattle *Rhinanthus minor* in the seed mix will help suppress vigorous grass growth that may suppress the success of wildflowers within the sward.

- **Bedding in of seed:**

After sowing, seeds will be 'bedded' in by trampling or light rolling.

- **Seed mix:**

A combination of two seed mixes is proposed. Specifically, a 50/50 mix of Emorsgate General Purpose Seed Mix EM2 and Emorsgate Mixture for Clay Soils EM4 are proposed to be utilised. This combination of seed mixes will help create a minimum of 9 species per m² of grassland and retain a species composition consistent with the UKHabs definition of other neutral grassland. This is a pre-requisite to achieving a grassland of good condition in accordance with the BNG Assessment. The proposed seed mix combination includes numerous grassland and wildflower species suitable for neutral and clay dominated soils. Notably, the species mix includes yellow rattle which is known to suppress dominant grass species which will allow existing grasses within the seed bank to colonise whilst preventing dominance and thus increasing species diversity per m². For exact specifications, please refer to: <https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/standard-general-purpose-meadow-mixture/> and <https://wildseed.co.uk/product/mixtures/complete-mixtures/meadow-mixtures-for-specific-soils/meadow-mixture-for-clay-soils/>

Recommended management prescriptions over a minimum 30-year term:**Table 2.2:** Wildflower meadow creation management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
Cut meadow twice annually	Late March / early April and– late August/ early Sept	This ensures the meadow does not grow excessively long and become rank but allows wildflowers to set seed and invertebrates to breed. This will also allow a diverse sward of varying lengths to naturally occur in accordance with growth characteristics of each species. Cutting twice annually will also prevent encroachment of scrub and bracken.	1, 2, 5, & 6.
Cut grass as to provide a heterogeneous habitat structure aiming to maintain at least 20% of grass <7cm and 20% >7cm. As such, each cutting phase must cut 20% of the area to ground level, 60% of the area to 15cm, and the remainder to 30cm. These areas must be rotated each year to maintain a diverse sward.	Late March / early April and– late August/ early Sept	To retain a diverse sward whilst limiting impacts to protected species potentially present at ground level and ensuring the natural germination of seeds.	2
Turn and dry the cut grass over 3-5 days before	Post cut	This allows the seeds to drop encouraging species diversity	1, 2, & 6.

	removing arisings off Site Do not apply chemical fertilisers	At all times.	and invertebrates to relocate unharmed. The use of chemical fertilisers will encourage vigorous grasses and weeds to grow or cause large areas of bare ground due to inhospitable growing conditions,	3
Tree and shrub planting	Overview: Multiple areas of proposed landscaping will be created through new tree and shrub planting including: - The creation of 0.0395ha of mixed scrub, as shown as landscape types P1, P10, and P12 on the landscape plans provided in Appendix 1 & 2. The landscape types comprise the proposed wildlife garden understorey planting using Emorsgate Hedgerow Mixture EH1, the proposed planting areas comprising edible shrubs, and the planting of willow species that can be intermittently harvested for basketry. - The creation of 0.0176ha of Rain Garden, as shown as landscape type P6 on the landscape plans provided in Appendix 1 & 2. - The creation of 0.003ha of introduced shrubs, as covered by landscape type B5 on the landscape plans provided in Appendix 1 & 2. - The creation of urban trees covering 0.1456ha. Objectives: - To create mixed scrub of poor condition in accordance with the BNG Assessment. - To create a rain garden of good condition in accordance with the BNG Assessment. - It is noted that introduced shrubs condition is predetermined as N/A and thus there is no target condition in accordance with the BNG Assessment. - To plant native trees and shrubs that will provide pollinating, foraging, and refuge opportunities for protected and/ or notable species groups including amphibians, 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.			

	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	3	n/a
	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	1 & 3	n/a
	Do not apply chemical fertilisers	At all times.	The use of chemical fertilisers will encourage vigorous grasses and weeds to grow	1	4
	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.	1	6
	Removal of spent flowers from perennial plants should be removed through 'deadheading'	Twice annually, late spring and in the Autumn.	Allows plants to place more energy into re-growth.	1	n/a
	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.	1	n/a
	Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.	1	1
Native Hedgerow Planting	Overview: It is proposed to create 0.098km of native hedgerow, as shown as landscape type P11 on the landscape plans provided in Appendix 1 & 2.				

	Objectives: • To create native hedgerows of moderate condition in accordance with the BNG Assessment. • To create dense hedgerows that will provide foraging, commuting, and refugia opportunities for notable species groups including bats, birds, badgers, and hedgehogs. • To ensure native species only are planted. • 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 prescriptions over a minimum 30-year period: <table><tr><th colspan="4">Table 2.4: hedgerow planting management prescriptions.</th></tr><tr><th>Management</th><th>When</th><th>Rationale</th><th>BNG condition criteria compliance</th></tr><tr><td>At the end of each growing season all plant failures are to be 100% replaced</td><td>When required; checked annually in Autumn.</td><td>To maintain amenity and wildlife value.</td><td>B1 & B2</td></tr></table>	Table 2.4: hedgerow planting management prescriptions.				Management	When	Rationale	BNG condition criteria compliance	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.	B1 & B2
Table 2.4: hedgerow planting management prescriptions.													
Management	When	Rationale	BNG condition criteria compliance										
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.	B1 & B2										

	If required, provision of stakes and guards. Guards to be left on for a minimum of 5 years	N/A	Protect from damage	A1 & A2
	Stakes should be checked and any broken or damaged stakes during this time would be removed (as above) and replaced with ties re-fixed	When required; checked annually in Autumn.	Maintain protection	D2
	Remove weeds	When required; checked twice annually in early spring and in Autumn.	Reduce competition for resources nutrients etc.by weeds	D1
	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	D1
	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.	A1 & A2
	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.	A1, A2, B1, & B2
	Check and replace any plant failures once a year	For the first 5 years	To ensure no gaps form.	A1, A2, B1, & B2
	Once the hedgerow reaches an average height of 1.5m or above along the hedgerow length, this height or above must be retained.	To be checked annually once hedgerow reaches 1.5m in height.	To ensure the hedgerow is not maintained at a low level of worse value to biodiversity.	A1
	Once the hedgerow reaches an average width of 1.5m or above along the hedgerow length, this width or above must be retained.	To be checked annually once hedgerow reaches 1.5m in width.	To ensure the hedgerow is not maintained at a thin density of worse value to biodiversity.	A2

Reedbed creation	Overview: It is proposed to create 0.008km of reedbed, as shown as landscape type P8 on the landscape plans provided in Appendix 1 & 2. Objectives: • To create reedbeds of moderate condition in accordance with the BNG Assessment. • To create a dense reedbed that will provide foraging, commuting, and refugia opportunities for notable species groups including bats, birds, and invertebrates. • 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. • To create a reedbed in accordance with guidance provided by the Royal Society of the Protection of Birds (RSPB) as detailed within the following document: Bringing Reedbeds to Life: Creating and Managing Reedbeds for Wildlife (RSPB 2014). • To create a reedbed that provides the following approximate habitat proportions in accordance with RSPB guidance: 1) around 25-30% open water; 2) around 40-50% of reeds to be wet year-round; 3) 10-15% drier reed. • To ensure there are permanently wet open water sections in accordance with RSPB guidance that are approximately 1-1.5m in depth during the summer and 1.5-2m in depth during the winter. Thought should be given to allowing the addition and removal of water when required; water can be added from a clean water source and water removal could comprise the drainage of water into the adjacent SUDS Basin. Creation Method: • Ground preparation The water level should be just above soil surface prior to planting. Where good water level control is already established, limited ground preparation is required as the existing water levels will discourage most terrestrial plant species and subsequently limit competition significantly. It is therefore recommended that the desired ground water level is achieved prior to planting. Should the desired water level not currently be present, the removal of current vegetation coverage and subsequent turning of topsoil should be undertaken prior to raising water levels. • Planting It is recommended that pre-germinated seedlings are planted for improved chances of effective colonisation. Seedlings are best planted at a density of 1-4 seedlings/ m². Seedlings should be planted by hand in holes approximately three times as wide as the supplied pot. • Timing
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Seedling planting should be undertaken during the late spring/ summer in May or June to enhance chances of successful establishment.

Recommended management prescriptions over a minimum 30-year period:

Table 2.4: hedgerow planting management prescriptions.

Management	When	Rationale	BNG condition criteria compliance
At the end of each growing season all plant failures are to be 100% replaced	When required; checked annually in Autumn.	To ensure effective colonisation and to maintain competitive dominance.	4, 5, & 6
To manage water levels to ensure water levels are higher in winter and lower during the summer	When required; checked twice annually, in July and January.	To help prevent significant accumulation of litter that could provide a substrate for undesirable terrestrial vegetation	3
To cut the reedbed using hand tools only.	Annually during the winter in January.	To aid the generation of new shoots whilst allowing existing plants to regenerate. Winter cutting helps ensure competitive dominance and will not impact nesting birds potentially present.	4, 5, & 6

Sustainable Drainage Feature

Overview:

It is proposed to create a sustainable Urban Drainage Feature in the form of a SuDs Basin and adjacent vegetation covering 0.0226ha, as shown as landscape types P3, P4, and P7 on the landscape plans provided in **Appendix 1 & 2**.

Objectives:

- To create a sustainable urban drainage feature of moderate condition in accordance with the BNG Assessment.
- To provide a landscape feature that will allow the management of water levels on site that will both aid with water drainage and will the management of adjacent habitats to benefit wildlife.

	Creation Method: It is recommended that the SuDs Basin is installed in accordance with current industry standard best practice guidelines published by the Construction Industry Research and Information Association (CIRIA). Specifically, the SuDS basin should be installed as set out in CIRIA guidance document: The SuDs Manual (2015). Recommended management prescriptions over a minimum 30-year period: It is noted that management of the SuDS basin required to achieve a moderate condition in accordance with the BNG assessment is predominantly associated with management of adjacent vegetation. The management of vegetation already detailed in this table is suitable for achieving a moderate condition for the SuDS Basin. No further management is recommended. Note the CIRIA guidance should be referred to for management relating to the structural elements of the SuDS basin and its function for managing surface water on site.
Provision of bat boxes	Two bat boxes will be installed on site onto the retained mature willow tree adjacent to the southeast site boundary. The recommended locations are shown on the plan in Appendix 4. Details of the bat boxes recommended for the site 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 Woodstone Bat Boxes are recommended, as shown in Figure 5. This bat box type is suitable to support a range of species including noctule bats <i>Nyctalus noctule</i>, common pipistrelle <i>Pipistrellus pipistrellus</i>, and soprano pipistrelles <i>Pipistrellus pygmaeus</i>, all of which are tolerant to urban environments and are most likely to be present in the local area. • Bat boxes will be positioned 3-5m above ground level facing in a south, southeast, or southwest direction with a clear flight path to and from the entrance, away from artificial light and facing vegetated habitats.



Figure 5: Vivara Pro Woodstone Bat Box (image credit: <https://www.nhbs.com/vivara-pro-woodstone-bat-box>)]

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 on site onto retained mature retained cherry trees located adjacent to the east site boundary. The recommended locations are shown on the plan in **Appendix 4**. Details of the bird boxes recommended for the site 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.

	• 2No.Woodstone Nest Box – with 28mm entrance holes are recommended, as shown in Figure 6. The bird box type is suitable to attract tree sparrows <i>Passer montanus</i>, blue tits <i>Cyanistes caeruleus</i>, coal tits <i>Periparus ater</i>, great tits <i>Parus major</i>, and crested tits <i>Lophophanes cristatus</i>, all of which are likely to be present in the local area. • Bird boxes will be positioned approximately 3m above ground level facing a northerly elevation where they will be sheltered from prevailing wind, rain and strong sunlight.  Figure 6: Woodstone Nest Box (image credit arkwildlife.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.
Reptile Hibernacula creation	Two hibernacula will be created using natural materials such as logs collected from the site, stone, vegetation arisings, and earth (see Figure 7) to enhance the site for reptiles post-development. The hibernaculum will be installed within wildflower grassland in the south of the site creation as shown on the plan in Appendix 4 .

	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 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. Hibernaculum on free-draining ground 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 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.
Provision of insect boxes	Two insect boxes will be installed on site to enhance the site for invertebrates post-development. The NHBS Insect Tower is considered suitable for the site as shown on Figure 8. The proposed locations of the insect towers are shown on then plan in Appendix 4.



Figure 8: The NHBS Insect Tower (<https://www.nhbs.com/insect-tower>)

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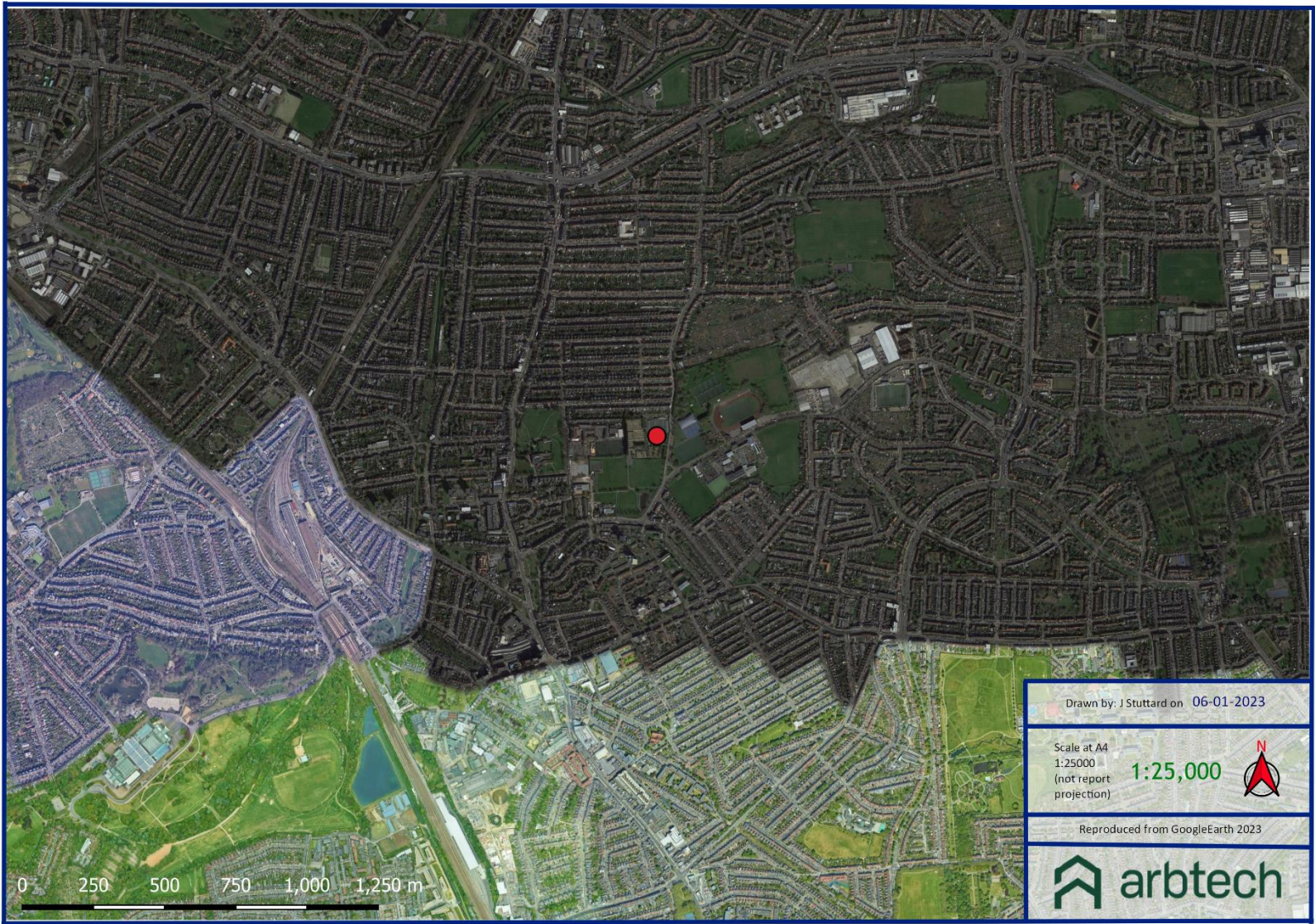
Appendix 1: Overview Landscape Plan



Appendix 2: Landscape Typology Plan



Appendix 3: Site Location Plan



Appendix 4: Species-Specific Enhancement Plan



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.
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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 plants listed on Schedule 5 of the Conservation of 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.

LOCAL PLANNING POLICY

Enfield Core Strategy 2010

Policy 36: "Biodiversity" States:

"The Council will seek to protect, enhance, restore or add to biodiversity interests within the Borough, including parks, playing fields and other sports spaces, green corridors, waterways, sites, habitats and species identified at a european, national, London or local level as being of importance for nature conservation by:

- Continuing to protect, restore, and enhance sites, habitats and species identified for their biodiversity importance at the national, London, or borough level. The Development Management Document will set out criteria to assess development proposals that are likely to have an adverse ecological impact;*
- Requiring improvements to biodiversity provision, with priority given to areas of deficiency identified in the Enfield Open Space Study and proposals which assist in achieving Biodiversity Action Plan objectives;*
- Reviewing the schedule of Sites of Importance for Nature Conservation in light of the findings of GLA survey of the Borough and other appropriate evidence, in order to set out a hierarchy of locally important sites in the Development Management Document; and*
- Preparing a Local Biodiversity Action Plan to set out the Borough's actions and objectives with regard to biodiversity, and to contribute towards the UK and London Biodiversity Action Plan targets and objectives."*

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.