

**LAND WEST OF OLD MANOR FARM,
SOUTH OF LOWER ROAD, BEDHAMPTON**

ECOLOGY MITIGATION & ENHANCEMENT STRATEGY

**NOVEMBER 2024
UPDATE**

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1.0 INTRODUCTION

1.1 Background

1.1.1 The site has Planning Permission for up to 43 dwellings, associated landscaping, open space and allotments with access from Lower Road at Land West of Old Manor Farm, South of Lower Road, Bedhampton, Hampshire. A detailed ecological assessment was provided with the Outline Application (see Aluco Ecology, 2021).

1.1.2 Planning permission for the site contains a condition directly related to the site's ecology:

5. Prior to the commencement of development, a site-wide ecological mitigation and enhancement strategy and timetable, including measures to secure at least 10% biodiversity net gain, shall be submitted to and approved in writing by the Local Planning Authority. This strategy shall be in conformity with the outline ecological mitigation, compensation and enhancement measures detailed within the Ecological Assessment (Aluco, September 2021) and any submitted landscape, drainage and lighting strategies. All ecological mitigation, compensation and enhancement measures, including those for common swift, shall be implemented in accordance with the approved details and approved timetable and shall be maintained for the lifetime of the development in a condition suited to their intended function.

1.1.3 A detailed scheme for the site has been developed, and this is reproduced at **Figure 1** below. This document provides updated survey, updated Biodiversity Net Gain Assessment, mitigation method statements for protected and notable habitats and species during construction, and draft management prescriptions and habitat creation for new habitats in public open space, providing necessary information for the planning condition.

1.1.4 Measures relating to updated nutrient neutrality calculations and payments to avoid impacts on the Solent designated sites are provided elsewhere.

1.1.5 This report updates the July 2024 submission with additional bird and bee brick mitigation options on the proposed dwellings.

2.0 DETAILS OF DEVELOPMENT

2.1 Introduction

- 2.1.1 **Figure 1** below shows the detailed Masterplan. The development is for 43 dwellings. The proposed development footprint and the open and green space provision is broadly the same area as that from the approved Outline Plans.

2.2 Biophysical Changes associated with the Development Scheme

Pre-Construction Site Clearance

- 2.2.1 Existing vegetation within the construction zone will be required to be removed and the ground re-profiled within the development area.

Construction

- 2.2.2 The construction of the development has the potential to affect protected species and ecological features, some of which are afforded protection under the legislation and policy outlined in Section 1 above. The following sections provide details for each relevant protected species group, to ensure that pre-construction works follows best practice and protected species are taken into account.
- 2.2.3 A detailed Landscape Strategy has been prepared for the site (see Terra Firma, 2024). This provides for formal and informal habitat creation and landscaping both around the main development footprint and new public open space habitats south of the main development area. This has been informed by the ecology mitigation and prescriptions.

Operation

- 2.2.4 The retained public open space areas of the site are designed to fulfil a multi-purpose role of biodiversity gain, landscaping and public open space. Additional planting has been provided in the Landscape Plans (Terra Firma, 2024).





Figure 1b: Masterplan (Thrive Architects, 2024)

3.0 UPDATE BASELINE ASSESSMENT

3.1 Previous Survey Work

Legislation

- 3.1.1 A number of species are protected under legislation and policy; namely the Conservation of Habitats & Species Regulations 2017 (as amended) in relation to the European protected species (eg bats, dormouse, great crested newts) and the Wildlife & Countryside Act 1981 (as amended) and Countryside & Rights of Way Act (CROW) 2000 for protected species and the designation and protection of SSSIs (**Technical Appendix 1**). The Protection of Badgers Act 1992 gives protection to Badgers *Meles meles*.

Summary of Previous Survey

- 3.1.2 Aluco Ecology has undertaken ecological survey work on the site for all protected species groups (see Aluco Ecology 2014, 2021 & 2022). Phase 2 survey work for all protected species groups was undertaken in spring-autumn 2021, and wintering birds during winter 2021-22. The results have identified the following ecological features potentially affected by the works and construction area and are therefore covered in this mitigation statement:

- Vegetation and habitats, including habitats within the construction zone to be impacted arable farmland/ruderal, as well as retained boundary woody vegetation;
- Nesting birds are present on site;
- Wintering bird survey work has been undertaken between 2014-2022 and is reported in Aluco Ecology, 2022;
- Seven bat species; Common & Soprano Pipistrelle *Pipistrellus pipistrellus* & *P. pygmaeus*, Serotine *Eptesicus serotinus*, Myotis Bat *Myotis* sp. considered likely to be Natterer's Bat *M. nattereri* and Whiskered type Bat *M. cf. mystacinus/brandtii* including, Long-eared Bat *Plecotus cf. auritus* and Noctule Bat *Nyctalus noctula* have been recorded foraging and commuting around the site and local area, but with low overall activity on site, associated with boundary vegetation off site that is to be retained, and with all but the Pipistrelle species only recorded rarely.;
- Badgers *Meles meles* may be present in the wider area, but no direct evidence was noted on site, Fox *Vulpes vulpes* and Hedgehog *Erinaceus europaeus* has been recorded;
- Populations of a single species of reptile, Slow Worm *Anguis fragilis*, in low numbers has been recorded on site boundaries.

3.2 Update Survey

Introduction

- 3.2.1 Survey work has been undertaken in 2023/24, with site visits set out in **Table 1** below. Survey was undertaken to update and to inspect potential for changes in habitats, using the methodology in **Technical Appendix 2**. In addition, ground nesting bird survey work was undertaken during July 2023, and a Great Crested Newt eDNA survey undertaken in April 2024.

Table 1: Survey Visits 2023-24

Date	Survey
17/07/2023	Nesting bird survey for site investigations
18/07/2023	Nesting bird survey for site investigations
19/07/2023	Nesting bird survey for site investigations
04/03/2024	Walkover survey
18/03/2024	Walkover survey
01/05/2024	Walkover survey & BNG baseline re-assessment
07/05/2024	Great Crested Newt eDNA survey
09/07/2024	Walkover Survey & BNG baseline re-assessment

Vegetation & Habitats

- 3.2.2 The habitats on site are broadly similar to those from the previous survey work (Aluco Ecology, 2021). The arable field has not been cropped in the last couple of years. In summer 2023 it comprised a tall ruderal crop dominated by Bristly Oxtongue *Helminthotheca echioides*, Thistles *Cirsium arvense* & *C. vulgare*, Common Ragwort *Jacobaea vulgaris*, Willowherbs *Epilobium* ssp., Scentless Mayweed *Tripleurospermum inodorum*, Barren Brome *Bromus sterilis*, False Oat Grass *Arrhenatherum elatius* Yorkshire Fog *Holcus lanatus*, and a few other common species previously recorded. This was topped at the end of winter 2024, but no cropping in spring 2024, with ruderal habitats regrowing. The northern and western arable margins with the offsite woodland habitats have a thin grassland strip with Wood False Brome *Brachypodium sylvaticum*, Nettles *Urtica dioica*, and Bramble *Rubus fruticosus* agg. and a few other common species as previously recorded.
- 3.2.3 A new native species hedgerow has been recently planted along the eastern boundary of the site with the new development to the east. This is mostly off site, but includes a small section where the two sites adjoin. It includes a species rich native mix with Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna*, Field Maple *Acer campestre*, Blackthorn *Prunus spinosa* and Honeysuckle *Lonicera periclymenum*.
- 3.2.4 Two areas of recently seeded grassland as part of new open space on the existing new development are present in the links between the main site and through the new

- development to Lower Road. The descriptions are based on the wider grasslands that the links run through. The northern link is a species poor grassland dominated by Rye Grass *Lolium perenne*, with some Field Horsetail *Equisetum arvense* and a few other species rare in the sward, including Red Clover *Trifolium pratense*, Hop Trefoil *Trifolium campestre*, and Yellow Rattle *Rhinanthus minor* agg. A short section is starting to be invaded by Bramble scrub on the edge of the site.
- 3.2.5 The southern link is a wild flower seed mix grassland with Red Clover, Ribwort Plantain *Plantago lanceolata*, Black Medick *Medicago lupulina*, Scentless Mayweed *Tripleurospermum inodorum*, Birds-foot Trefoil *Lotus corniculatus*, Hedge Bedstraw *Galium mollugo*, Selfheal *Prunella vulgaris*, Wild Carrot *Daucus carota*, Hop Trefoil, Kidney Vetch *Anthyllis vulneraria*, Red Fescue *Festuca rubra* agg., Cocks-foot *Dactylis glomerata*, Meadow Grass *Poa* sp. The grassland is still developing and retains a high annual component (particularly Scentless Mayweed) but also a few annual seed mix species such as Cornflower *Centaurea cyanus* and bare ground (30-40% in some parts). On this basis it is assessed as a developing modified grassland, but it could eventually develop into a neutral grassland with suitable management. The southern grassland had been recently mown on 09 July 2024. Cuttings appear to have been removed.
- 3.2.6 Overall, the habitats outlined in the original ecological assessment remain similar, and these assessments remain valid.
- 3.2.7 Update photos of the site from 2023-24 survey work are provided at **Technical Appendix 3**.

Birds

- 3.2.8 A pair of Skylark *Alauda arvensis* bred on site in 2023, with fledged young present in July 2023. Survey work in May 2024 has also recorded a pair of Skylark. Two late winter visits recorded flyover Mediterranean Gull and Black-headed Gull, and no waterfowl. The previous waterfowl survey is two years old, and the site visits in 2023 & 2024 confirm no changes in habitat for birds since the previous survey work. The conclusions of the previous survey work are therefore considered to still be valid.

Bats

- 3.2.9 The update walkover survey work in 2024 has reconsidered habitats for bats on site. The area proposed to be developed is well buffered from the woodland boundaries, which will remain unimpacted with new semi-natural habitats, including woody habitats, damp grassland and wetland features. This combined with the detailed survey data from 2021, and no significant change in habitats for bats on site since the previous survey mean the conclusions of the previous survey work remain valid.

Other Mammals

- 3.2.10 Survey work in May 2024 included an update walkover survey for evidence of Badger use of the site. There was no evidence of any active Setts on site. The results are similar

to previous survey work. Hedgehog *Erinaceus europaeus* and Fox *Vulpes vulpes* have also been recorded on site.

Reptiles

- 3.2.11 The walkover survey work in 2024 considered habitats for reptiles on site. The habitats present are similar to previous survey work, which recorded a low population of Slow Worm *Anguis fragilis*, restricted to the wooded northern and north western boundaries of the site.

Amphibians

- 3.2.12 The walkover survey work in 2024 re-considered habitats for amphibians on site. The habitats present are similar to previous survey work, being mostly restricted to edge habitat to woodland on the western and northern boundaries. A review of off-site waterbodies highlighted a new SUDs feature in the development west of the site. This feature was dry in July 2023, but with a wet winter in 2024, it held 50cm+ depth of water in May 2024 and July 2024. Although potential for Great Crested Newt *Triturus cristatus* presence was considered low on account of a lack of local waterbodies to colonise from, an eDNA survey was undertaken on 07 May 2024. The survey analysis was negative for Great Crested Newt DNA (see **Technical Appendix 4**).

Invertebrates

- 3.2.13 Habitats for invertebrates have not changed significantly since previous survey work.

3.3 Update Assessment of Impacts

- 3.3.1 Given the update survey results and that there are no significant changes in evaluation of habitats, the previous ecology impact assessment remains valid and therefore the mitigation measures recommended in the ecological survey work to date (Aluco Ecology, 2021 & 2022) to ensure that the scheme complies with relevant legislation and policy (as summarised in **Technical Appendix 1**), are set out in detail in the sections below.

4.0 CONSTRUCTION MITIGATION MEASURES

4.1 Introduction

- 4.1.1 The following construction method statements have been developed to ensure that the ecological receptors set out in the assessment (Aluco Ecology, 2021) are considered and protected during the construction phase of the development. This relates to habitats and vegetation, birds, mammals, and reptiles and amphibians.
- 4.1.2 In addition to the method statements outlined below, a Construction Environmental Management Plan (CEMP) is to be prepared as part of the development, which addresses potential for indirect pollution on and off site, including potential pathways to designated sites.
- 4.1.3 A nutrient neutrality assessment was undertaken as part of the outline planning permission and is to be updated for the current application.

4.2 Vegetation and Habitats

Potential Risks

- 4.2.1 The construction has the potential to provide the following risks to vegetation and habitats:
- Direct damage to any retained habitats, woody vegetation and hedgerows, through construction activities such as tracking of machines and damage to habitat;
 - Direct damage to habitats associated with retained hedges and trees, including grassland edges and tree line, through construction activities such as tracking of machines and damage to habitat;
 - Indirect pollution events on retained habitats through surface water run off pollution, siltation, dust and airborne pollution and littering.
- 4.2.2 The following sections below provide detailed mitigation for ensuring that the vegetation and habitats on site are protected during the construction phase and that risks outlined above are addressed through the process to provide suitable avoidance, reduction and offsetting measures and safe biodiversity protection zones.

Retained Vegetation – Protection Areas

- 4.2.3 The boundary woodland edge and scrub with additional grassland edge vegetation buffers are to be retained as part of the scheme. These boundaries will be marked to the edge of the works area and protective fencing to relevant building standards will be erected at the edge of the works/retained habitat areas to ensure that habitats are retained in situ during construction. The grassland edge habitat at the base of these habitats is important to

reptiles and will be retained in situ as part of the reptile mitigations strategy, and protected by the site fencing.

- 4.2.4 There should be no storage of materials, or equipment, or use of the retained hedge/boundary on the site by any construction activities.

Indirect Pollution Potential

- 4.2.5 Potential for indirect impacts to retained habitats and adjacent habitats should be avoided through best practice pollution prevention measures in construction. Best practice pollution prevention guidelines to be followed during the construction phase are set out in Government guidelines for best practice (see [Gov.UK](https://www.gov.uk)).

Construction Area

- 4.2.6 The habitats over the construction area are to be removed according to protected species mitigation statements below. This includes:
- All woody vegetation within the construction zone, including recently planted section of hedge,
 - Tall ruderal vegetation and grassland areas within the construction zone;

4.3 Mitigation Method Statement for Birds

Introduction

- 4.3.1 All birds and their nests are protected from harm under Section 1 of the Wildlife and Countryside Act 1981 (as amended) (see **Technical Appendix 1**). A strategy is provided below to ensure that the construction of the proposed development does not affect any nesting birds.

Potential Risks

- 4.3.2 The construction of this phase of the development has the potential to provide the following risks to birds:
- Direct damage to retained trees and hedgerows that may be used as nesting bird habitat through construction activities such as tracking of machines and damage to habitat;
 - Damage to habitats associated with retained hedges and trees, including rough grassland edges and ditches within hedgerows through construction activities such as tracking of machines and damage to habitat.
 - Potential for disturbance to off-site non-breeding waterfowl assemblage
- 4.3.3 The following sections below provide detailed mitigation for ensuring that the nesting birds and habitats on site are protected during the construction phase and that risks

outlined above are addressed through the process to provide suitable avoidance, reduction and offsetting measures.

Mitigation for Nesting Birds

4.3.4 All woody habitat not to be retained on site will be removed outside the nesting bird season where possible (which is considered to be early March-August). Vegetation clearance will be undertaken in the following way:

- In areas where reptiles may be present all vegetation will be cleared to just above ground level (c10-15cm) to remove nesting bird habitat but not disturb the ground;
- There is potential for ground nesting birds in the tall ruderal vegetation on site, and a pair of Skylark have been recorded in the last two years on site. Measures should be undertaken to ensure that vegetation within the works area is not allowed to develop into suitable ground nesting bird habitat in the spring/summer. These should include tilling of the ground to ensure it remains bare during the construction process. Pre-construction survey effort of any new works area may be required during the nesting bird season to check there are no ground nesting birds that may be impacted. Where ground nesting birds are present, a suitable buffer zone will be provided with advice from the suitably qualified ecologist, with no access to construction until nesting has been completed by the birds in question;
- Vegetation clearance will be undertaken with supervision from an ecologist if considered necessary, via an agreed method statement;
- It may be possible to sensitively undertake small amounts of vegetation works during the nesting bird season where such vegetation is able to be checked by a suitably qualified ecologist to determine no nesting birds are impacted.

Protection of Retained Habitats & Habitat Creation

4.3.5 Measures outlined above in relation to retained habitats should ensure that the habitats outside the works area is protected via fencing to ensure that construction activities do not impact on the features.

4.3.6 New habitats (see **Figure 4**) will provide opportunities for a number of bird species in the longer term, with new woody vegetation planting, grassland to be provided in public open space.

Noise Disturbance to Non-breeding Waterfowl Off-site

4.3.7 Given the separation of the site by Railway line and A27, both generating noise thought to be in excess of the usual residential construction methods (for example no piling etc) winter construction works are not thought to impact on SPA or SPA support sites.

4.4 Mitigation Method Statement For Bats

Introduction

- 4.4.1 All bats and their roosts are protected from harm under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Habitat Regulations 2017 (as amended) (see **Technical Appendix 1**). A number of bat species have been recorded foraging and commuting on site. No buildings or trees are present on site to provide potential for roosting bats. The site is within the wider Bechstein's Bat *Myotis bechsteinii* zone in Havant Borough, however no evidence of use by the species has been noted in detailed survey, and the development proposals will buffer the main bat habitats on site and provide new mixed habitats for bats (see **Figure 4**).

Potential Risks

- 4.4.2 The construction of this phase of the development has the potential to provide the following risks to bats:
- Potential for indirect impacts on retained habitat used by foraging and commuting bats;
 - Potential impacts from lighting on retained trees or off-site buildings, and foraging/commuting routes.
- 4.4.3 The following sections below provide detailed mitigation for ensuring that the bat populations and habitats on site are protected during the construction phase and that risks outlined above are addressed through the process to provide suitable avoidance, reduction and offsetting measures and safe biodiversity protection zones.

Foraging and Commuting Habitat

- 4.4.4 The design of the development allows for retained boundary woody vegetation and woodland edge, and open space habitats to develop to provide enhanced links through the site.
- 4.4.5 The provision of new woody planting and less intensive maintenance of parts of the open space grasslands will provide additional semi-natural habitats for commuting and foraging in the local area. New mosaics of grassland and wetland features in the SUDs will provide new foraging opportunities in the medium to long term.

Lighting

- 4.4.6 Street lighting has the potential to impact on bat foraging and mitigation guidelines have been developed (see ILP & BCT, 2023). Design and location of lighting within the new scheme will consider the following:
- Identify key points in the landscape where artificial light at night disrupts spatial connectivity of dark areas, and reduce or remove lighting in these areas if

possible. On the site this would include boundaries, particularly the woodland edge, that will need to be retained as a dark corridor. Location of bat boxes/roost features will also need to be in a dark zone;

- Maintain and create unlit 'dark corridors' between habitat patches where possible.
- Avoid use of, and remove where possible, lamps that waste light by emitting vertically or horizontally – ensure that lighting is designed with minimum spill and is downward facing and directional and that retained hedges and trees are not lit.
- Reduce as much as possible the intensities of light emitted from lamps
- Avoid use of white and blue light wherever possible. The broader the spectrum of light that a lamp produces, the wider the range of organisms it is likely to affect.
- Avoid use of lamps that emit in the ultraviolet (UV) range. UV light is not seen by humans but many animals see UV and it may disrupt their natural behaviour.

4.4.7 A detailed lighting strategy is to be prepared. This will consider the location of main bat commuting and foraging habitat around the scheme, i.e. principally around the woody boundaries of the site. The aim has been to reduce and preventing light spill into these habitats. Regard will also be had to the location of bat mitigation and lighting. It is proposed that street lighting on the site will be all bollard lighting (similar to the scheme immediately to the east) and this will therefore ensure that the provisions above are adhered to.

4.5 Mitigation Method Statements for Other Mammals

Introduction

4.5.1 Badgers and their Setts are protected from harm and disturbance under the Protection of Badgers Act 1992 (see **Technical Appendix 1**). No active Badger Setts have been recorded, and an update walkover survey was undertaken in May and July 2024. Other mammals including Fox and Hedgehog are present in the zone of influence and have been recorded using the site on occasion.

Potential Risks

4.5.2 The construction of this phase of the development has the potential to provide the following risks to terrestrial mammals:

- Direct damage to retained habitats that may be used by mammals;
- Damage to habitats associated with retained woody vegetation, including rough grassland edges through construction activities such as tracking of machines and damage to habitat;
- Potential indirect impacts through disturbance, and pollution events.

- 4.5.3 The following sections below provide mitigation for ensuring that the habitats of protected mammal species on site are protected during the construction phase and that risks outlined above are addressed through the process to provide suitable avoidance, reduction and offsetting measures and safe biodiversity protection zones.

Minimising secondary impacts to Mammals

- 4.5.4 It is expected that mammals may travel through the site during construction and therefore the following measures should be implemented to reduce the risk of secondary impacts to badgers:

- trenches in excess of one metre in depth should be covered or secured and a means of escape provided for any animal that does fall in (a suitable escape can be provided by wooden planks placed at a 45 degree angle);
- any temporarily exposed open pipe system should be capped in such a way as to prevent Badgers gaining access;
- chemicals and fuels should be stored carefully and as far away from setts and badger paths as possible, and in accordance with the Code of Construction Practice; and
- any security lighting (if required) should be directed away from any sett/fox earth protection zones.

- 4.5.5 To facilitate these measures, contractors and subcontractors should be made aware of the location of any setts and protection zones as part of environmental site induction courses.

Potential for Fox Earths

- 4.5.6 Foxes are present in the local area, although no Fox earths have been recorded on site. Where active Fox Earths are located within the construction zone or within 20m of it and likely to be significantly impacted, then the following guidelines will apply:

- Potential Fox Earths will be checked regularly for signs of use;
- Holes will be part, then fully soft blocked and monitored for a period of up to two weeks;
- Where monitoring and discouragement of use is applied successfully and no evidence of further use is made, the holes will be destructively searched;
- Where there is continued use of holes, the installation of one-way gates will be necessary with a further period of monitoring;
- Exclusion of Foxes from holes will only take place outside the breeding period (ie closure can occur during June – Jan depending upon local circumstances).

Hedgehog

- 4.5.7 Hedgehog *Erinaceus europaeus* have been recorded on site. Any pre-construction vegetation clearance where Hedgehogs may be present should have regard to their

potential presence and be carried out sensitively. This can be combined with reptile mitigation work set out below.

4.6 Mitigation Method Statement: Reptiles & Amphibians

Introduction

4.6.1 All reptiles are protected under the Wildlife & Countryside Act 1981 (as amended) (see **Technical Appendix 1**). The following strategy has been devised in order to follow best practice guidance (HGBI, 1998, Froglife, 1999).

4.6.2 Survey work has recorded a low population of Slow Worm on site, primarily around the tree-lined northern and north western boundary, with field boundaries containing very small amounts of suitable edge habitat for reptiles. No amphibians were recorded on the survey.

Potential Risks

4.6.3 The construction of this phase of the development has the potential to provide the following risks to reptiles & amphibians:

- Direct damage to reptiles through construction activities such as tracking of machines and damage to habitat;
- Damage to habitats associated with retained hedges and trees, including grassland edges through construction activities such as tracking of machines and damage to habitat;
- Potential indirect impacts on retained habitats.

4.6.4 The following sections below provide detailed mitigation for ensuring that reptiles & amphibians on site are protected during the construction phase and that risks outlined above are addressed through the process to provide suitable avoidance, reduction and offsetting measures and safe biodiversity protection zones.

Retained Habitats

4.6.5 The majority of the reptile habitat on site is to be retained as buffer to the site boundaries. This will be managed as a tall grassland and invading scrub habitat (see below).

Mitigation Strategy

4.6.6 Only a very small amount of potential reptile habitat is to be impacted in the south west corner of the field, where a new SUDS feature is to be located, and northern boundary, where formal landscaping is to be planted. A local translocation strategy has been devised to ensure that the development does not harm reptiles/amphibians. The strategy ensures that reptiles are protected in the long term:

- The main aim is to retain reptile populations within the local area, and within retained habitat on the site, including public open space area;
- Retained areas will be enhanced through provision of new reptile habitat in long term management of open space habitats;
- The public open space is shown on landscape plans, reproduced as **Figure 4**;
- Prior to construction commencing, phases of the construction zone will be subject to a destructive search to the methods set out below, to ensure that reptiles are not harmed;
- Any amphibians present within the works area will also be encountered and translocated in a similar manner.

4.6.7 The construction zone includes a small area of grassland edge habitat where new SUDS features are to be created at the western boundary, and a very thin ruderal/grassy edge to the northern boundary, where new formal planting is proposed. The translocation will be undertaken according to the following strategy:

- The existing vegetation within the works area should be cut short regularly (but having regard to ground nesting birds) to ensure that the construction zone does not develop suitable reptile habitat;
- Given that the impacts on site are very localised and populations of Slow Worm are low, reptile translocation is not recommended, and habitat manipulation (phased vegetation works) followed by a supervised destructive search is suitable to push reptiles out of the works area and into suitable retained habitat that is adjacent;
- The areas of potential reptile habitat within the construction zone of the site will be sensitively trimmed to c10cm using hand tools, careful not to harm reptiles potentially present. Where trees and bushes are also to be removed, due regard will be given to the mitigation strategy for nesting birds and other mammals;
- The cut area will be left for 24 hours minimum. Prior to works consideration will be given by the suitably qualified ecologist as to whether a second cut is recommended;
- A destructive search of the works area suitable reptile habitat will be undertaken, with a directional vegetation clearance and soil stripping under supervision by a suitably qualified ecologist;
- The reptile strategy will be undertaken outside of the hibernation period and during late March/April-October, depending upon weather conditions and other factors. Where potential reptile habitat is contained within the works area outside this period, no construction works will be undertaken in this habitat during this period.
- The reptile strategy will be detailed to conform to any mitigation requirements for other protected species.

5.0 HABITAT ENHANCEMENTS, CREATION & MANAGEMENT

5.1 Introduction

- 5.1.1 This section sets out habitat enhancements built into the scheme for biodiversity mitigation and enhancements. It includes reference to a statutory Biodiversity Net Gain (BNG) assessment, where enhancements include enhanced and created habitats in open space on site. This has been developed in conjunction with landscape and hydrological disciplines.

5.2 Habitat Enhancement and Creation

Retained & Created Habitats – Public Open Space

- 5.2.1 One of the principal features of the ecological mitigation and enhancements are provision of informal public open space totalling over 2ha. This includes provision a number of habitats of value to biodiversity. These are set out in detail in the landscape plan (Terra Firma, 2024) and include:

- Retained boundary buffer habitats that will include some planting of mixed native scrub – see below (tall grassland and invading Bramble scrub);
- Wildflower grassland habitat. This should be seeded in either autumn or spring. Emorsgate EM1-3 or EM5 mix or similar agreed with the suitably qualified ecologist. Adding Yellow Rattle *Rhinanthus minor* into the seed mix will reduce grass vigour. Yellow Rattle must be seeded in the autumn for germination. Management in the longer term will be of a hay cut (1-3 times a year depending upon growth rates – late summer, late autumn and if considered necessary, early spring) with cuttings removed. To keep a neat look at the edge eg close to the residential development area. a c1m edge can be regularly mown along outer boundaries;
- Tall grassland habitat. This habitat will be allowed to develop from existing edge grassland in retained open space areas, or created from wildflower grassland in open space areas within the construction zone. This will comprise tussocky grassland edges that can be allowed to develop with some limited woody infiltration from suckering woody species and bramble, to create a grassland edge habitat to the hedges and native species woody areas of scrub/woodland. This will be managed in the longer term through ensuring that tall grassland habitat is retained in extent through cutting of the woody encroachment. This habitat will form a mosaic with the mixed native scrub on the site boundaries and edges of hedgerows and wildflower areas where there is woody vegetation. Management for the scrub and wildflower grassland habitats will need to ensure that an element of tall grassland is retained;
- Native scrub planting. The majority of new scrub habitats are to be around the site/open space boundaries. A scrub mix includes Hawthorn *Crataegus*

monogyna, Blackthorn *Prunus spinosa*, Hazel *Corylus avellana*, Grey Willow *Salix caprea*, Dog-rose *Rosa canina*, Field-rose *Rosa arvensis*, Honeysuckle *Lonicera periclymenum*, and Bramble *Rubus fruticosus agg.*;

- Native and non-native tree planting. These will comprise a number of native species shrubs and trees (see Terra Firma, 2024 Landscape plans for details). The management of these will be to allow for maturing then low intensity/sensitive cutting to allow fruiting and habitat to develop for wildlife, in a regime similar to the retained hedges above. Grassland edge habitat around shrubs will be allowed to develop;
- SUDS damp grassland/wetland features. These will also be seeded with a native species damp grassland seed mix. Part of the SUDs can be left as bare ground habitat to allow natural colonisation. A part of the SUDS has also been designed to retain water throughout most/all of the year as a pond feature;
- Hedgerows. A native species hedgerow mix is proposed including Hawthorn, Blackthorn, Field Maple, Hazel, Holly and Honeysuckle. This should be planted in a double row and allowed to develop into a mature hedge feature.

5.3 Mitigation and Enhancements for Protected and Notable Species

Birds

- 5.3.1 A total of 26 built in swift bricks will be provided within the scheme and locations are shown at the **Figure 5**. The exact locations to be agreed with the suitably qualified ecologist during construction. The boxes to include a brick with cavity designed to be used as a Swift nest site, or can be used by other bird species, examples are provided in **Technical Appendix 5**.

Bats

- 5.3.2 A total of 6 bat roosting structures will be erected on site (see **Figure 5**), using Schwegler or inbuilt designs (examples frequently used are provided in **Technical Appendix 5**). Boxes/tiles and bricks should be located on site by the suitably qualified ecologist to ensure that they are placed in suitable locations.

Hedgehog

- 5.3.3 All fences to new gardens should allow gaps or provide 'hedgehog highways' to allow continued access through the site. The gap in the fencing should be as a minimum 13cm x 13cm. Some suppliers provide fencing with 'hedgehog highway' gaps pre-built in.

Herpetofauna

- 5.3.4 New habitats comprising extended areas of tall uncut grassland edge will be allowed to develop from existing grasslands and new seeded grasslands in the public open space part of the site, which is where the existing population of Slow Worm were recorded. The habitats to be created and managed within the public open space will be subject to a management plan (with ecology management recommendations set out below).

- 5.3.5 Management prescriptions for reptile edge tall grassland and other habitats is designed to ensure that ongoing management of public open space has regard to reptiles present within the site.

Invertebrates

- 5.3.6 Opportunities exist to create new habitats in public open space for invertebrates and habitat creation and management measures for the open space include prescriptions that will provide habitats for invertebrate populations to develop and colonise on site. In addition 11 bee bricks will be installed on new buildings where cladding makes swift nest bricks less likely to be utilised, see **Figure 5**.

5.4 Management Prescriptions for Habitats

- 5.4.1 **Figure 2** shows the development masterplan, and detailed landscaping plans for the public open space are reproduced at **Figure 4**. As part of the operational phase of the development a management plan will be required to ensure that open space habitats are managed appropriately. In terms of the BNG requirements, habitats that provide the biodiversity gain should be maintained favourably for a minimum of 30 years.

- 5.4.2 The management strategy should build in the following habitat prescriptions, so that habitats outlined above and detailed on the landscape plan are managed to benefit biodiversity):

(1) Tall (uncut) Grassland Edge Habitat

Management will include annual or every second year cutting of encroaching woody vegetation (eg Bramble) to maintain an area of grasslands that are left uncut to form tussocky grassland edges. This will allow existing rough grassland habitats to develop into more complete habitats around the edges of the site, particularly the scrub habitats proposed.

Target = To retain and enhance tall grassland edge habitat to woody and other features, to provide important suitable habitats for birds, small mammals, foraging bats, reptiles, amphibians and invertebrates.

Upper Limit = Cutting of encroaching scrub either annually or every second year, to ensure a rough grassland edge is retained at the edges of the boundaries/woody habitat. Scrub encroachment (eg Brambles) can feature in this habitat type, but should not be more than 30% of area.

Lower Limit = No cutting of grasslands within designated rough grassland areas (in the mosaic of tall grassland/mixed native scrub).

(2) Hay Meadow Grassland

Once established, hay meadow should be managed through cutting in the late summer/early autumn annually. Cuttings to lay on ground for 1-2 days and then collected. This should be undertaken during dry periods. A second cut can be undertaken in late autumn (Oct). Where grass growth is vigorous a further early spring cut (cf. March) can be taken. After every 5-7 years the open areas of the meadow can be scarified lightly following the early autumn cut, to keep an open element to the sward. This should be considered in ongoing management.

Target = To manage wild flower meadows to allow flowering of herbaceous and grass species, followed by traditional hay cut maintenance to allow seeds to drop and maintain meadow habitat.

Upper Limit = Cutting up to three times annually late summer, late autumn and early spring. Cuttings should lay on ground and then be removed 1-2 days later. Compost can take place on site in compost pile, if suitable discrete location can be located. Scrub encroachment (eg Brambles) and uncut tall grassland should feature in this habitat type, but should not be more than 10% of area.

Lower Limit = Cutting of grassland once per year in late summer, cuttings to be removed as above.

Additional management points:

- *Ensure varied sward height (combine with habitat tall grassland below) 20% less than 7cm and 20% more*
- *Ensure cover of bare ground is between 1-5%*
- *Reduce cover of species indicative of suboptimal condition (Creeping & Spear Thistle, Curled & Broad-leaved Dock, Nettle, Creeping Buttercup, Greater Plantain, White Clover, and Cow Parsley)*
- *Ensure no species in Sch. 9 WCA are within habitat*
- *Avoid damage by machinery when cutting (eg avoid cutting in wet conditions)*

(3) Mixed woody Scrub Vegetation

Woody vegetation should be managed to allow flowering and fruiting of shrubs/trees through lower intensity cutting. For new native species planting in open space the establishment of new woody planting should ideally allow for grasses to develop at the base of the planting rather than spraying to create a natural woody habitat with associated grassland edge rather than over managed bare base. Where possible, once established, guards should be removed for natural growth.

Target = To manage all woody habitat on site (retained hedgerows/boundary vegetation, and new native planted) to flower/fruit with cutting to take place outside the bird nesting

season and in late winter, with limits of cutting below taken into account. Ensure a tall grassland element is present within this habitat type.

Upper Limit = Cutting no more than 15% of the resource annually once mature and established. Cutting should be on long term rotation. Regard can be had to encroachment into formal areas.

Lower Limit = Cut every second late winter (Jan-Feb). No less than 20% of this area should be tall grassland edge, glade or ride habitat.

Additional management points:

- *Ensure the mix of species is represented, with one species no more than 75% of habitat to provide a mixed scrub habitat;*
- *Ensure management maintains a mixed age range from seedlings, saplings, young shrubs and mature shrubs;*
- *Ensure invasive non-native species and those listed on Schedule 9 of the Wildlife & Countryside Act are not present;*
- ***Maintain well developed semi-natural edge to the scrub with the tall grassland habitats, and/or a mosaic of scrub and tall grassland habitats;***
- *Enhance scrub habitats by providing clearings, glades and rides to provide micro habitats and sheltered edges.*

(4) Species Rich Native Hedgerow Management

To allow for natural style hedge with cutting on a reduced rotation. Ongoing hedgerow management to be relaxed with trimming once every two to three years, staggered, to encourage flowering and fruiting and thereby provide greater abundance of foraging resources for wildlife, including birds and invertebrates. Trimming should be carried out in late winter to prolong habitat resources during winter but prior to the commencement of the bird nesting season.

Target= To provide a reduced management hedgerow network in open space.

Limits = Additional management points:

- *Ensure hedge is >1.5m wide and high;*
- *Ensure gap at base of hedge is less than <0.5m high – remove tree guards as soon as possible to help with this;*
- *Ensure any gaps in hedge are replanted;*
- *Ensure tall grassland margin is maintained as edge habitat*
- *Spot pull high nutrient dominating species such as Nettle, Docks and Cleavers*
- *Remove any invasive and non-native species (eg those on Sch 9 of WCA)*
- *Avoid damage to hedge through heavy cutting, and remove any rubbish that accumulates from urbanisation*

(5) SUDS Features

To allow a semi-natural damp grassland and wetland feature to develop in the SUDS areas on site. Management of aquatic habitats should be reduced to provide structure around wetland features and allow a natural profile. Over the longer term, some management may be necessary to retain wetland function and diversity of habitats if certain species dominate. An element of open water has been designed to be present in the SUDS.

Target = A varied vegetation structure for wildlife features as well as providing SUDS capabilities. This should be through varied habitats, native species, and plants of a wetland habitat.

Limits = Additional management points:

- *Ensure vegetation structure is varied, a single structural habitat component of vegetation type should not account for more than 80% of habitat;*
- *Ensure habitat provides a diverse range of native plant species for wetlands of benefit to wildlife;*
- *Control of invasive non-native species and those listed on Schedule 9 of the Wildlife & Countryside Act;*
- *Management to aim to create a semi-natural habitat with wetland plant species that are not invasive and are native locally.*

6.0 BIODIVERSITY NET GAIN ASSESSMENT

6.1 Introduction

6.1.1 A Biodiversity Net Gain assessment has been undertaken to provide information on proposed biodiversity mitigation and enhancement measures that can be put in place for the development proposals.

6.1.2 The Environment Act 2021 (as amended) provides legislation relating to biodiversity net gain for development. The updated National Planning Policy Framework (NPPF) states (paragraph 174) that:

“Planning Policies and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.”

6.2 Methodology

6.2.1 The statutory Biodiversity Metric Calculation Tool has been used to determine a quantifiable number of biodiversity units produced during the operational stage of a project. The post-construction/operational value is compared to the baseline biodiversity (pre-construction) value to determine if the proposals will result in a net gain or net loss in biodiversity.

6.2.2 The assessment has been undertaken by Aluco Ecology Ltd, with a site visit on 01 May and 09 July 2024 to classify habitats according to the UKHab criteria (UKHab Ltd, 2023). The matrix assessment is provided as an excel accompanying this report.

6.2.3 Baseline habitats are described above, and summarised below in relation to definitions given in UK Hab and the BNG matrix. Proposed habitats are set out in Section 5 below, and a summary of the matrix results is provided in Section 6.

6.3 Headline Results

6.3.1 The Matrix has provided the following headline results:

On-site base line	Habitat units	7.63
	Hedgerow units	0.44
	Watercourse units	0.00
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	9.93
	Hedgerow units	3.47
	Watercourse units	0.00
On-site net change (units & percentage)	Habitat units	2.30
	Hedgerow units	3.03
	Watercourse units	0.00
Off-site base line	Habitat units	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Off-site net change (units & percentage)	Habitat units	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.30
	Hedgerow units	3.03
	Watercourse units	0.00
Spatial risk multiplier (SRM) deductions	Habitat units	0.00
	Hedgerow units	0.00
	Watercourse units	0.00
FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.30
	Hedgerow units	3.03
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	30.08%
	Hedgerow units	688.74%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

6.4 Habitat Degradation

- 6.4.1 When assessing the baseline condition of the site, regard was had to potential habitat degradation from actions that may have occurred to habitats after January 2020. In this case, a description of any potential degradation, and consideration of impacts on baseline habitats is considered in the condition assessment of baseline habitats in the metric and discussed below.

6.5 Irreplaceable Habitats

- 6.5.1 Baseline assessment of the site has considered whether there are irreplaceable habitats on site. No irreplaceable habitats are present on the site.

6.6 Baseline Metric Assessment

- 6.6.1 The following baseline habitats are present on site (see **Figure 3**):
- Tall Forbs (a tall ruderal vegetation from recent non-arable production). This habitat is establishing over a cessation in arable production over the last couple of years and is dominated by tall invasive species such as Bristly Oxtongue, Creeping Thistle and Common Ragwort. It passes 1 criterion in condition assessment.
 - Built Linear Features (links through existing new development east of site).
 - Modified Grassland (edge of woodland and links through existing new development). This habitat type is split into three areas based on condition assessment. The grassland edging the woodland on site is assessed as good condition and passes 5 to 6 criteria, the grassland strip in the new development by the SUDS feature is moderate condition and passes 5 criteria; and the grassland strip in the new development northern link is assessed as poor condition as it fails criteria 1 on species richness, but otherwise passes 5 criteria.
 - Introduced Shrubs (planting around existing new development car park).
 - Species Rich Hedgerow. This is a recently planted hedge, between the new development and the main area of site to the east. It is assessed as poor condition.

6.7 Retained, Created & Enhanced Habitats

- 6.7.1 The following measures are incorporated into the scheme design to help ensure that the project provides biodiversity gain. These are detailed in the Proposed Landscape Plan (Terra Firma, 2024) for the site (see **Figure 4**), which represents the created habitats post intervention plan for the biodiversity net gain assessment:
- Modified Grassland. Part of the open space management will be creation of semi-natural meadow habitat. As a precaution this habitat has been set as a

modified grassland on account of its creation over arable land. However, with suitable management it should be able to develop as a neutral grassland habitat. The management prescriptions set out above will allow for a good condition habitat to develop.

- Modified Grassland. The remainder of the grasslands in the open space are to be a formal amenity grassland. These are managed with regular cutting and have been set as poor condition as a result.
- Mixed Native Scrub – this habitat will be developed over retained grassland/tall forb edge habitat and will be allowed to develop as a mosaic of scrub and tall grassland. The habitat prescriptions outlined above for native scrub and tall grassland will allow this habitat to achieve good condition with suitable management.
- A total 83 trees and 17 fruit trees are proposed to be planted within the red line boundary and are assessed as small trees for the matrix assessment. Tree species are detailed in the Landscape Plans (Terra Firma, 2024).
- Species Rich Hedgerow. A total of 5 woody species and management prescriptions set out above will allow this habitat to develop as moderate to good condition.
- A number of formal vegetated habitats are also provided around the scheme including vegetated garden (as the gardens are not yet designed, the garden space has been split 60% vegetated 40% non-vegetated for the assessment); formal introduced shrubs, ornamental hedging, and pleached line of trees.

6.8 Management

- 6.8.1 The habitat creation and management measures set out in the BNG assessment and outline management prescriptions set out above, will need to be included in a detailed management plan, and this can be subject to a suitably worded condition as part of a Planning Permission.

7.0 SUMMARY

- 7.1 Update survey work, evaluation and assessment in has been undertaken to accompany the reserved matters application. The assessment has shown broadly similar ecological features and impacts as previous survey work, with no significant changes to the ecological baseline. Therefore, a detailed ecology mitigation strategy has been devised and amended where necessary to ensure that biodiversity features are protected during construction of the approved scheme and that there are long term measures to maintain and enhance biodiversity in a built scheme and during operation. An outline timetable of works is provided at **Table 1** below.
- 7.2 A Biodiversity Net Gain assessment using the statutory Biodiversity Metric has provided a >10% gain where the measures proposed above and on the landscape plans are implemented in full.





Figure 4a: Proposed Habitats (Landscape Plan – Terra Firma, 2024)





SUMMARY TIMETABLE

A timetable showing main construction mitigation work periods for ecology during a year is provided below at **Table 3** (but see method statements for detail).

Table 3: Summary of Anticipated Protected Species Mitigation Timescales During Construction

2024 =	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
Vegetation																					
Protect retained vegetation with fencing																					
Planting of new habitats in POS																					
Nesting Birds																					
Principal Cutting of woody vegetation period																					
Vegetation manipulation of potential ground nesting bird habitat																					
Erect Bird Boxes – when relevant property is built																					
Bat Mitigation																					
Erect Bat Boxes – when relevant property is built																					
Badgers & Foxes																					
Ongoing site monitoring for Badger Fox																					
Fox earth exclusion measures																					
Reptiles																					
Grass cutting/manipulation																					
Monitor reptiles																					
Translocation																					
Destructive Search																					

8.0 REFERENCES

Aluco Ecology (2021) Land West Of Old Manor Farm, South Of Lower Road, Bedhampton Ecological Assessment September 2021

Aluco Ecology (2022) Winter Waterfowl Survey, Land at Lower Road, Bedhampton, Havant March 2022

BCT & ILP (2023) Guidance Note 08/18 Bats and Artificial Lighting in the UK, Bats and the Built Environment Series

Edgar, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth

Froglife, 1999. Froglife Advice Sheet 10. Reptile Survey. An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife, Halesworth, Suffolk.

Gov.UK (2024) Standing Advice for Protected Species and Habitats

Herpetofauna Groups of the British Isles (HGBI) Guidelines (1998) "Evaluating Local Mitigation/Translocation Programmes: Maintaining Best Practice and Lawful Standards." HGBI Advisory notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth, personal collection.

Terra Firma (2024) Landscape General Arrangement Drawings No. 2255-TFC-00-00-DR-L-1001 to 1005

UKHab Ltd (2023) The UK Habitat Classification User Manual Version 2 at <http://www.ukhab.org/>

Technical Appendix 1
Wildlife & Countryside Act
Habitats Regulations and Schedule 2 Species
Natural Environment & Rural Communities Act 2006

WILDLIFE & COUNTRYSIDE ACT 1981 (AS AMENDED)

The Wildlife and Countryside Act 1981 (as amended) (WCA) is the principle legislation in Britain for the protection and conservation of our wildlife and its habitats of national importance. The legislation adopts a habitat and species based approach to nature conservation. Habitats and some species are protected in designated Sites of Special Scientific Interest (SSSI). Other species are afforded some protection from harm or disturbance by way of inclusion in either Section 1 (birds), Schedule 1 (specially protected birds), Schedule 5 (specially protected animals) or Schedule 8 (specially protected plants).

Protection Afforded to SSSIs

The presence of an SSSI on or near to a development is a material consideration, and this is discussed further in planning policy (see National Planning Policy Framework)

Law Relating to Protected Species

The WCA provides protection to such species in Part 1 of the Act. These sections provide protection from intentionally:

- killing, injuring or taking any wild bird or taking, damaging or destroying the nest or eggs of a wild bird
- disturbing any wild bird in Schedule 1 whilst building, on or near a nest, or disturbing dependant young of such birds
- damaging, destroying or obstructing access to any structure or place of shelter or protection of a schedule 5 animal, or disturbs any such animal whilst it is occupying a structure or place it uses for that purpose
- killing, injuring or taking any animal listed in Schedule 5
- Having in possession or control any live or dead wild bird or egg, or any wild animal in Schedule 5, or trading in any animal under Schedule 5.
- Damage to plants listed in Schedule 8 or uprooting of wild plants unless an authorised person.

Exemption and licences for development can be obtained in certain circumstances. Protected species are also a material consideration in planning applications.

Disturbance & Recklessness

The Countryside and Rights of Way Act 2000 (CRoW Act 2000) adds to protected species legislation in the WCA. The lesser test of 'Recklessness' is added to the protection from disturbance in three circumstances. These are:

- disturbance to Schedule 1 birds and their nests, eggs and dependant young,
- disturbance to Schedule 5 animals in their place of shelter/protection, and
- disturbance to the places of shelter/protection of Schedule 5 animals.

This addition means that any person who deliberately takes an unacceptable risk or fails to notice an obvious risk is falls under the Section irrespective of intention. The CRoW Act also provides greater protection to SSSIs from operations (and non operations) of owners, occupiers and third party users of the SSSI.

For further information see: <https://www.legislation.gov.uk/ukpga/1981/69>

HABITAT REGULATIONS 2017

General

The Conservation of Habitats and Species Regulations 2017 ('The Habitat Regulations') consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

European Protected Species

Species listed under Annex II of the Habitats Directive were formally afforded protection by the Habitat Regulations. European protected species include the great crested newt, dormice and all species of bats. The provision relating to wild animal offences is reproduced below:

Protection of certain wild animals: offences

43.—(1) A person who—

- (a) deliberately captures, injures or kills any wild animal of a European protected species,
 - (b) deliberately disturbs wild animals of any such species,
 - (c) deliberately takes or destroys the eggs of such an animal, or
 - (d) damages or destroys a breeding site or resting place of such an animal,
- is guilty of an offence.

(2) For the purposes of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely—

- (a) to impair their ability—
 - (i) to survive, to breed or reproduce, or to rear or nurture their young; or

- (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate;
or
- (b) to affect significantly the local distribution or abundance of the species to which they belong.
- (3) It is an offence for any person—
 - (a) to be in possession of, or to control,
 - (b) to transport,
 - (c) to sell or exchange, or
 - (d) to offer for sale or exchange,anything to which this paragraph applies.
- (4) Paragraph (3) applies to—
 - (a) any live or dead animal or part of an animal—
 - (i) which has been taken from the wild, and
 - (ii) which is of a species or subspecies listed in Annex IV(a) to the Habitats Directive;
 - and
 - (b) anything derived from such an animal or any part of such an animal.
- (5) Paragraphs (1) and (3) apply regardless of the stage of the life of the animal in question.
- (6) Unless the contrary is shown, in any proceedings for an offence under paragraph (1) the animal in question is presumed to have been a wild animal.
- (7) In any proceedings for an offence under paragraph (3), where it is alleged that an animal or a part of an animal was taken from the wild, it is presumed, unless the contrary is shown, that that animal or part of an animal was taken from the wild.
- (8) A person guilty of an offence under this regulation is liable on summary conviction to imprisonment for a term not exceeding six months or to a fine, or to both.
- (9) Guidance as to the application of the offences in paragraph (1)(b) or (d) in relation to particular species of animals or particular activities may be published by—
 - (a) the appropriate authority; or
 - (b) the appropriate nature conservation body, with the approval of the appropriate authority.
- (10) In proceedings for an offence under paragraph (1)(b) or (d), a court must take into account any relevant guidance published under paragraph (9).
- (11) In deciding upon the sentence for a person convicted of an offence under paragraph (1)(d), the court must in particular have regard to whether that person could reasonably have avoided the damage to or destruction of the breeding site or resting place concerned.

Section 44 provides certain defences to the above.

The granting of a licence under Part 5 Section 55 of the Habitat Regulations

In order to carry out a lawful operation (e.g. development work which has full planning permission) that may result in any of the offences above, it is necessary to obtain a licence from Natural England to allow the operation to proceed.

However, in accordance with the requirements of the Habitats Regulations, a licence can only be issued after the following conditions have been satisfied:

- that there is no satisfactory alternative, and

- that the action authorized will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- that the action is required in preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;

Full planning permission is required to apply for a Natural England licence (where such a consent is necessary for the work to be carried out). In addition, a method statement which details the survey results, methodology of work to be undertaken, mitigation and compensation measures, must be submitted to Natural England with the licence application.

Plans and Projects & Designated Sites

The Regulations provide procedure whereby designated SAC or SPA and other European Protected Sites are afforded protection from plans and projects that may be likely to have a significant effect on the Features for which these sites are designated. Where a significant effect is considered likely in combination with other projects an appropriate assessment is required to be undertaken. Details of this procedure can be found at Part 6 of the Act onwards, see link below.

For Full details of the 2017 Habitat Regulations see:

http://www.legislation.gov.uk/ukxi/2017/1012/pdfs/ukxi_20171012_en.pdf

NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

This Act places a specific duty to conserve biodiversity on all public bodies, including Local Planning Authorities. In order to aid with this process Section 41 of the Act requires the Secretary of State to publish lists of living organisms and habitats which are of principal importance for the purpose of conserving biodiversity. These are the national Biodiversity Action Plan (BAP) lists, and BAP projects are also undertaken at a County, Borough or District level.

For further information see: <https://www.legislation.gov.uk/ukpga/2006/16/part/3>

ENVIRONMENT ACT 2021

Royal Assent 9 November 2021

The Environment Act 2021 has recently received Royal Assent and will introduce a number of nature conservation initiatives. These include Biodiversity Net Gain assessments. The following measures are part of the Act (see www.gov.uk, 2021):

- Strengthened biodiversity duty;
- Biodiversity net gain to ensure developments deliver at least 10% increase in biodiversity;
- Local Nature Recovery Strategies to support a Nature Recovery Network;
- Duty upon Local Authorities to consult on street tree felling;
- Strengthen woodland protection enforcement measures;
- Conservation Covenants;
- Protected Site Strategies and Species Conservation Strategies to support the design and delivery of strategic approaches to deliver better outcomes for nature;

- Prohibit larger UK businesses from using commodities associated with wide-scale deforestation;
- Requires regulated businesses to establish a system of due diligence for each regulated commodity used in their supply chain, requires regulated businesses to report on their due diligence, introduces a due diligence enforcement system;
- Long-term targets to improve air quality, biodiversity, water, and waste reduction and resource efficiency;
- A target to halt the decline of nature by 2030;
- Environmental Improvement Plans, including interim targets;
- A cycle of environmental monitoring and reporting;
- Environmental Principles embedded in domestic policy making;
- Office for Environmental Protection to uphold environmental law;
- Air and Water pollution measures.

For further information see:

https://www.legislation.gov.uk/ukpga/2021/30/pdfs/ukpga_20210030_en.pdf

Biodiversity Net Gain under the Environment Act

Mandatory biodiversity net gain in England is likely to become law in 2023 (through amendments to the Town & Country Planning Act). The key measures include (see eg www.gov.uk & www.local.gov.uk):

- Minimum 10% gain required using Biodiversity Metric;
- Habitat secured for at least 30 years via obligations/ conservation covenant;
- Habitat can be delivered on-site, off-site or via statutory biodiversity credits;
- Creation of a national register for net gain delivery sites;
- Continued use of mitigation hierarchy - avoid, reduce, off-set (mitigation and compensation);
- Will apply to Nationally Significant Infrastructure Projects (NSIPs)
- Will not apply to marine development;
- Works alongside existing legal environmental and wildlife protections.

Technical Appendix 2

Ecological Appraisal Methodology

Introduction

The methodology for this appraisal is based on the Guidelines for Ecological Impact Assessment (EcIA) in the United Kingdom published by the Chartered Institute of Ecology and Environmental Management (IEEM June 2006, CIEEM 2016). Regardless of whether a statutory Environmental Impact Assessment is required, these guidelines provide a robust framework for ecological assessment at any scale.

Desk Study

The first stage of the appraisal is a desk study of the proposed development site and associated Zone of Influence. This provides background information on the site and local environment so as to more effectively target field survey and further desk research.

The Multi Agency Geographical Information for the Countryside (MAGIC) database is searched for information regarding nationally or internationally designated sites within proximity of the development site.

The National Biodiversity Network (NBN) data base is searched to provide background information on local protected species records. The NBN provides access to a substantial volume of biodiversity data for the UK. Although rarely site specific, it does provide valuable background information on the local occurrence of protected species.

Where appropriate, the local environmental/biological records centre is consulted to provide information regarding locally identified sites and records of protected and/or notable species within the zone of influence of the proposed development.

Site Survey Methodology

The aims of the survey are to record land-use and broad vegetation types present on the site and in the surrounding areas, and to evaluate the habitats and vegetation communities ecological value along with the potential to support protected species, species of principal importance, and any other notable species.

Where relevant, habitat immediately adjacent to the site is also assessed as this can have a bearing on the possible presence of protected species on the site and the ecology of adjacent areas can be affected by development nearby.

Habitats and Vegetation

Habitats and vegetation communities are recorded on a broad scale by visually noting contrasting land uses, vegetation zones and landscape features, such as hedgerows and trees. Dominant plant species are recorded in each of the areas identified, as are any notable plant species, such as protected species and habitats or notifiable weeds.

Protected Species

Many plant and animal species are legally protected in the UK. Some, such as bats, badger, water vole and great crested-newt are commonly encountered on development sites.

Case law has established (Regina vs. The Cornwall County Council ex parte Hardy 2001) that “It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted.

For the most regularly encountered protected species, a brief summary of methods follows:

Bats

Bats use buildings and trees for roosting and breeding, and so the potential for any of these features on site to support bats was considered, as was the sites potential for providing bat foraging habitat. An Appraisal survey will consider potential features that could support a Bat roost, and this may include external inspections of the trees and buildings on site. The Appraisal survey will also consider bat habitats in relation to foraging and commuting potential, with semi-natural vegetation features considered and evaluated.

Where an inspection is undertaken this will look for the presence of bats as well as signs of their presence such as Bat droppings, e.g. within cavities and buildings; Staining at potential roost access points; Lack of bat evidence cannot be taken to mean the lack of use by bats because of a number of potential limitations:

- Signs of bats can be easily washed off by wind or rain;
- Droppings are hard to see where rubble and other floor debris may obscure them;
- Low numbers of droppings can easily be missed especially where they may become damp and deteriorate;
- Evidence of bats may not be apparent where bats roost out of view, such as in tree cavities etc.

Badgers

An initial inspection is undertaken during the Appraisal survey for evidence of the presence of Badgers *Meles meles*, in particular Badger setts, on or near to the site. The Appraisal will search for presence of Badger foraging activity and territorial behaviour. Such signs include foraging trails, foraging scrapes in short grass, which are commonly known as 'snuffle holes' (shallow scrapes in soft ground or even turf rolling created by foraging for ground-dwelling invertebrates such as worms and grubs), footprints, hairs caught under fences, sett entrances, and latrine sites.

Dormice

The Appraisal survey will consider the potential for presence of Dormouse on or near the site, principally through habitat suitability, combined with data on occurrence within the area from the data search. Where suitable habitat occurs, further survey for feeding signs on hazel nuts where Hazel occurs, and searches for arboreal nests. If a site is considered suitable, further Phase 2 survey work may be required.

Other Mammals

Consideration is also given in an Appraisal survey to the potential for habitats to support other legally protected mammals, and those of nature conservation significance. Where waterbodies and watercourses occur on or near to the site, the potential presence of species including Water Vole *Arvicola amphibious* and Otter *Lutra lutra* are considered. Depending upon the geographic location consideration is also given to species such as Red Squirrel.

Breeding Birds

Any notable bird species seen during the Appraisal survey are recorded. The type and quality of breeding, foraging and roosting habitats available for birds is also considered and interpreted with particular reference to protected or notable bird species, and birds of conservation concern.

Consideration is given to any features which could support nesting birds, including buildings and other structures, and areas of vegetation that may be affected by a development.

Reptiles

Any areas of habitat considered suitable for supporting reptiles are noted (for example, areas of rough grassland and scrub, banks, burrows, and rubble piles, compost heaps). If a site is considered suitable, further Phase 2 survey is usually required if an impact from the development or project is considered likely.

Great Crested Newt

An Appraisal Survey considers habitat suitability, through the occurrence of suitable ponds and/or terrestrial habitat, and this will be combined with knowledge on their distribution from biological records for the area. If a site is considered suitable, further Phase 2 survey is usually required if an impact from the development or project is considered likely.

Invertebrates

A very small proportion of invertebrates are afforded legal protection under the Wildlife and Countryside Act 1981 (as amended), although a relatively high number of invertebrates are included within the UK and local BAPs, and many more species are identified as being Nationally Scarce. Most invertebrates require specialist knowledge in order to identify them, although some groups, including butterflies and dragonflies, can be readily identified by generalists. Therefore, apart from recording any species of these readily identifiable groups, an Appraisal Survey concentrates on recording the presence of any key habitats of nature conservation importance considered suitable for supporting more scarce and restricted invertebrates, for example bare ground, dead wood and botanically rich habitats.

Survey Constraints and Limitations

An Appraisal survey is carried out during a brief window of time. Therefore the survey can only provide a snapshot of the range of plants and animals that might be present. However, professional judgement is used to interpret the habitat features recorded, and their likely value for supporting protected and notable species, including species of principal importance. Survey was restricted through land access as it is unusual to have a landowner owning land surrounding that which is being surveyed.

Assessment Guidelines

Introduction

The IEEM guidelines (2006) and updated in 2016 (CIEEM, 2016) provide three principal reasons for an ecological feature being valued and therefore included: biodiversity value, social/community value, and economic value.

The evaluation and assessment undertaken assigns one of a number of value labels based on a geographic scale as follows:

- International
- National
- Regional
- County
- District
- Local (Parish)
- Within the zone of influence

Value is determined with reference to the following factors:

- level of designation (sites) or biodiversity-based protection (legal and policy);
- biodiversity value (e.g. inclusion in Biodiversity Action Plans, rarity, position in ecosystem, assemblages and communities, size and diversity);
- social and economic value;
- legal issues (eg protected sites).

All impacts of the scheme on features of local importance or greater are assessed in the impact assessment stage

Assessment of Likely Impacts

The ecological impact assessment methodology used is based on the following considerations.

Characterisation of Likely Impacts

The potential impacts identified as a result of the proposals are characterised according to the following parameters:

- Positive or negative
- Magnitude (and extent if not synonymous)
- Duration
- Reversibility
- Timing and frequency

Significance of Impact

A significant impact on a valued ecological feature (whether negative or positive) is defined in CIEEM's guidelines as an impact on the integrity of a defined site or ecosystem, and/or the

conservation status of habitats or species within a given geographical area. These terms are defined below.

Integrity

Integrity is defined as follows. *‘The integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified.’* A site or ecosystem that achieves this is considered to be at favourable conservation status.

Conservation Status

For habitats, conservation status is determined by the sum of the influences acting on the habitat and its typical species, which may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area.

For species, conservation status is determined by the sum of the influences acting on the species, which may affect the long-term distribution and abundance of its populations within a given geographical area.

Impact Prediction

For guidance as to whether an impact is likely to result in an adverse effect on the integrity or conservation status of a feature, reference has been made to the conservation objectives for that feature where they are available, for example in habitat and species action plans. Otherwise professional judgement has been made based on available information.

The confidence in the prediction that an activity will give rise to a significant adverse impact on a valued ecological feature is given based on a four point scale:

- Certain (or near-certain);
- Probable;
- Unlikely; and
- Extremely unlikely

Drawing Assessment Together

The above factors – value, integrity and conservations status of the feature, prediction and characterisation of the impact and overall significance of the impact is brought together in the final assessment. This is done without additional mitigation measures that may be proposed. An impact is then summarised as significant or not.

Mitigation, Compensation and Enhancement

Where impacts are characterised as significant mitigation or compensation may be offered to prevent, reduce or offset such impacts. In addition enhancement measures may be built into a scheme to ensure that the scheme is compliant with the proactive measures outlined in the latest Government policy on nature conservation (National Planning Policy Framework).

Technical Appendix 3

Update Survey Photos 2023-24



Tall Ruderal habitats developing over arable field (July 2024)



Tall Ruderal habitats developing over arable field (July 2024)



Boundary woodland strip (July 2023)



Southern boundary woody strip with railway (July 2023)



Recently created SUDS feature east of site (July 2023)



Recently created SUDs feature east of site (April 2024)



New grasslands east of site in recently developed area (July 2024)



New Hedge on boundary between new development and site

Technical Appendix 4

Great Crested Newt eDNA Methodology

Great Crested Newt eDNA Survey Methodology and Results

Introduction

In March 2014 Natural England approved a new survey methodology for detecting presence/absence of Great Crested Newt in a waterbody, using environmental DNA (eDNA), and testing for the presence of eDNA of newts in water samples. This survey method has been devised through scientific research by the Freshwater Habitats Trust (FHT). Natural England issued a press release to confirm that they will accept eDNA sample results as suitable presence/absence data on a waterbody where these samples have been undertaken in accordance with the FHT technical advice note for applying the test, and analysed by an approved Laboratory.

Water Sample Collection Methodology

Collection of water samples are undertaken according to the methodologies provided in supplied test sample kits from the approved laboratory, and in accordance with the guidelines set out in the technical advice note prepared by the Freshwater Habitats Trust (Biggs et al, 2014). This includes the following methods set out in the box reproduced below from the FHT guidance note. The samples are returned to the laboratory using the methods stipulated by the laboratory.

References

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

DEFRA:

<http://randd.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18650&FromSearch=Y&Publisher=1&SearchText=wc1067&SortString=ProjectCode&SortOrder=Asc&Paging=10#Description>

Natural England Press Release:

<http://www.naturalengland.org.uk/ourwork/regulation/wildlife/gcn-eDNA-feature.aspx>

3.2 Field water sample collection protocol

The field sampling protocol should follow the steps outlined below. Gloves should be worn at all times during the sampling process, replacing the gloves between sample collection from the pond and pipetting into the sterile sub-sample tubes. Samples should be collected without entering the water, i.e. the surveyor stands only on the pond bank or muddy pond edges. This prevents disturbance of the substrate and may limit cross-contamination.

Stages of field sampling protocol

- Step 1 Identify where 20 samples will be taken from the pond. The location of sub-samples should be spaced as evenly as possible around the pond margin, and if possible targeted to areas where there is vegetation which may be being used as egg laying substrate and open water areas which newts may be using for displaying.
- Step 2 Open the sterile Whirl-Pak bag by tearing off the clear plastic strip c 1cm from the top (along the perforated line), then pulling the tabs. The bag will stand-up by itself.
- Step 3 Collect 20 samples of 30 mL of pond water from around the pond (see 1 above) using the ladle (fill the ladle), and empty each sample into the Whirl-Pak bag. At the end the Whirl-Pak bag should be just under half full (600 mL).

NOTE: Before each ladle sample is taken, the pond water column should be mixed by gently using the ladle to stir the water from the surface to close to the pond bottom without disturbing the sediment on the bed of the pond. It is advisable not to sample very shallow water (less than 5-10 cm deep).
- Step 4 Once 20 samples have been taken, close the bag securely using the top tabs and shake the Whirl-Pak bag for 10 seconds. This mixes any DNA across the whole water sample.
- Step 5 Put on a new pair of gloves to keep the next stage as uncontaminated as possible.
- Step 6 Using the clear plastic pipette provided take c15 mL of water from the Whirl-Pak bag and pipette into a sterile tube containing 35 mL of ethanol to preserve the eDNA sample (i.e. fill tube to the 50 mL mark). Close the tube ensuring the cap is tight.
- Step 7 Shake the tube vigorously for 10 seconds to mix the sample and preservative. This is essential to prevent DNA degradation. Repeat for each of the 6 conical tubes in the kit. Before taking each sample, stir the water in the bag to homogenize the sample - this is because the DNA will constantly sink to the bottom.
- Step 8 Empty the remaining water from the Whirl-Pak bag back into the pond.
- Step 9 The box of preserved sub-samples is then returned at ambient temperature immediately for analysis. If batches of samples are collected and stored prior to analysis they should be refrigerated at 2-4° C. Kits can be stored for up to one month in a refrigerator before analysis. It is not necessary to freeze samples. Freezing may damage storage bottles, which can lead to leaking during transit, and also unnecessarily increases costs by requiring refrigerated transport. The length of time eDNA samples are stored in a refrigerator prior to analysis should be recorded and passed on to the analysing laboratory. Use an appropriate labelling system to ensure that the kits are supplied with a unique reference number.

Lab Summary Results 2024 Survey

Folio No:	970-2024	 SureScreen Scientifics
Purchase Order:	BED01	
Contact:	Aluco Ecology Ltd	
Issue Date:	09.05.2024	

GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
3961	Lower Road, Bedhampton	SU7001406046	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Daisy Chambers

Approved by: Lauryn Jewkes

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Technical Appendix 5

Bat & Bird Box Mitigation Examples

Examples of Bird Nesting Opportunities for buildings

Swift Nesting Brick –

It needs to be positioned near Apex or high up – position advised by ecologist.

Design shown is from Ibstock Bricks.

<https://www.ibstockbrick.co.uk/kevington/eco-products/>

see also:

<https://www.hampshireswifts.co.uk/post/when-is-an-s-brick-an-eaves-s-brick>

<https://www.rspb.org.uk/globalassets/downloads/documents/conservation--sustainability/help-swifts/swift-bricks.pdf>



Examples of Bat Bricks/Mitigation for buildings

Schwegler Bat Roost Unit 2FR

This Tube system meets the characteristic behavioural requirements of the types of bats that inhabit buildings. Made with Schwegler wood-concrete, the design maintains excellent climatic conditions inside the roost unit allowing the animals to either hang onto the wooden rear or onto the wood-concrete front. The box, once installed is maintenance free and self cleaning.

The roost unit can be installed within any external walls (brick, block or panelling) either flush or beneath the wall surface (with suitable entrance ramp extension)



Dimensions: height 47.5 x
width 20 x depth 12.5 cm,
Entrance: width 15 x height 2
cm, Weight: ca. 9,8 kg

Within Brick, can also be
placed within cavity with only
entrance visible



Bee Brick example:

<https://www.nhbs.com/bee-brick>

Hedgehog Highways:

<https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>