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**Limes Cottage**  
**Forward Green**  
**Suffolk**

## Preliminary Ecological Appraisal

MR HUGH CUMBERLAND

VERSION 2

Final

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## Executive Summary

BiOME Consulting Ltd was commissioned by Bright Architecture (on behalf of Hugh Cumberland) in July 2023 to undertake a Preliminary Ecological Appraisal (PEA) of a site (Limes Cottage, Forward Green, Suffolk) where the construction of a new detached annex is proposed. The ecology surveys detailed within this report were completed in order to determine the baseline ecological conditions of the site, with particular attention given to the possible presence of protected, controlled or otherwise notable species and/or habitats.

The ecological issues identified during the PEA were:

**Bats:** It was assessed that the trees to be impacted (directly and/or indirectly) offered negligible potential for roosting bats. In the apparently unlikely event that bats are encountered during works, all works must cease and the advice of a Suitably Qualified Ecologist (SQE) sought.

**Great Crested Newt (GCN):** GCN have been identified (through desk study) to be present ca. 120m from the site. The majority of the site is considered unsuitable for GCN given that it is regularly mown amenity grassland. The small area of vegetation proposed for clearance to facilitate access may support low number so of GCN at times. Given the proposals and considering that GCN have been confirmed as present within Pond 3, it is recommended that works in this area are conducted under the auspices of Precautionary Working Method Statement (PWMS) but that no further survey work is considered necessary. This PWMS should detail methods of working to ensure no GCN come to harm.

**Nesting Birds:** Common species of birds will use the areas of the site to be impacted for nesting. The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. If re-development works are proposed for the bird nesting season (March-August inclusive), it will be necessary to appoint SQE to complete a check for active birds' nests. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period, then no such check is necessary.

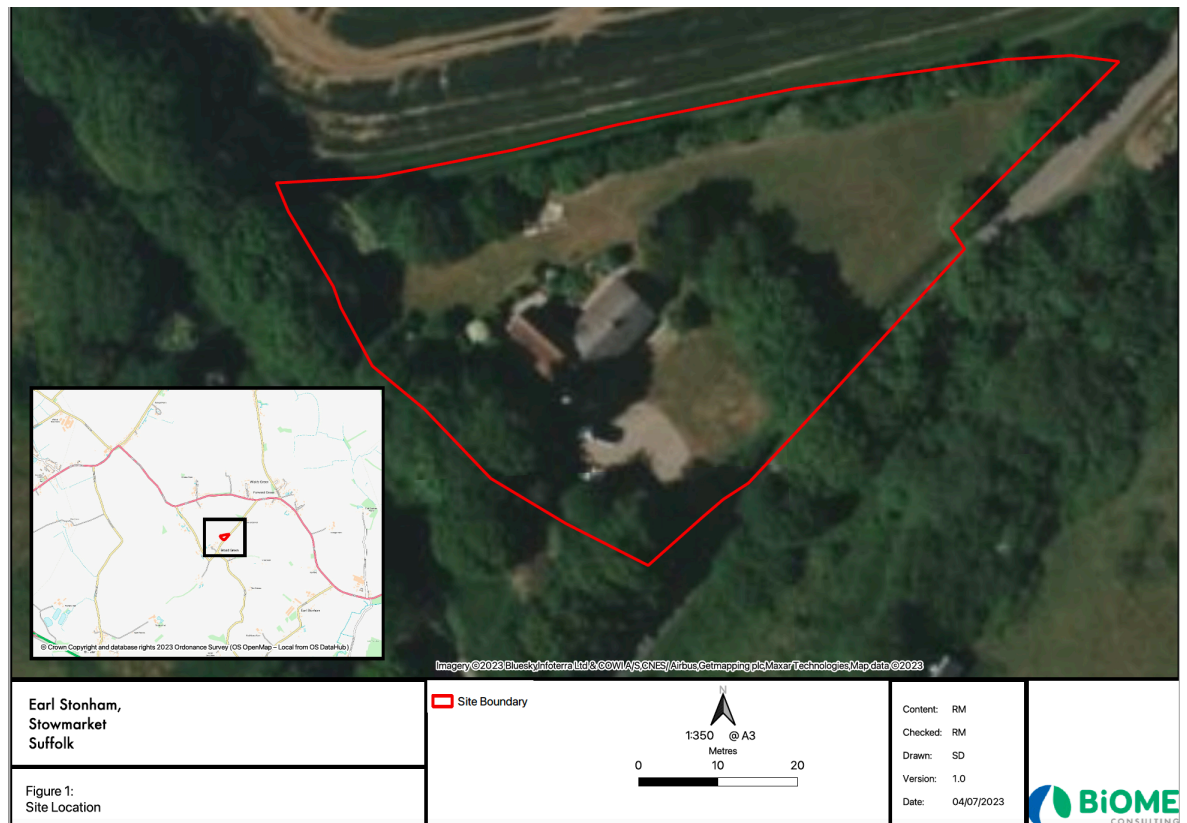
**Report Validity:** The findings of this report are considered valid for up to 18 months from the date of this report. If the project is delayed beyond this period, an updated assessment of potential impacts will be required.

# 1. Introduction

## 1.1. Background

BiOME Consulting Ltd was commissioned by Bright Architecture (on behalf of Hugh Cumberland) in July 2023 to undertake a Preliminary Ecological Appraisal (PEA) to undertake a Preliminary Ecological Appraisal (PEA) of a site (Limes Cottage, Forward Green, Suffolk) where the construction of a new detached annex is proposed (National Grid Reference TM 09227 59434) (**Figure 1**).

**Figure 1.** Site Location



The 'site', located near Stowmarket, Suffolk included an area of lawn proposed as the site for the new detached annex. The wider surrounding habitat were dominated by arable farmland to the north and east with residential dwellings to the southwest and scattered trees.

## 1.2. Development Proposal

It is proposed to construct a new detached annex building to the northeast of the existing house. The proposal also includes an access route from the main drive entrance to the proposed annex which would necessitate vegetation/tree clearance (**Figure 2**).

**Figure 2.** Proposed Plans



The ecology surveys detailed within this report were completed in order to determine the baseline ecological conditions of the site, with particular attention given to the possible presence of protected, controlled or otherwise notable species and/or habitats. The results have been used to identify further ecological work/mitigation/licencing required to enable the proposed works at the site to proceed lawfully.

## 2. Relevant Legislation

### Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

The Habitats Regulations convey special protection to a number of species, which are listed in Schedule 2 of the Regulations and are referred to as European Protected Species (EPS). Those potentially relevant to the Project include:

- All UK resident bat species; and
- Great Crested Newt *Triturus cristatus* (GCN).

Regulation 43 makes it an offence to:

- Deliberately capture, injure or kill any wild animal of a EPS;
- Deliberately disturb wild animals of such a species;
- Deliberately take or destroy the eggs of such a species;
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance in the context of the offences above is disturbance which is likely to impair the ability of the animals to survive, to breed or reproduce, to nurture their young, to hibernate, to migrate; or to affect significantly the local distribution of the species.

Licences can be granted by the relevant Statutory Nature Conservation Organisation (SNCO) for developments (sometime referred to as EPS Licences or Derogation Licences) providing the purposes of the licence is for "*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*".

### Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) provides protection to both EPSs and other species including wild birds, and reptiles.

All wild birds, their nests and eggs are protected, with some rare species afforded extra protection from disturbance during the breeding season (these species are listed in Schedule 1 of the Act). It is illegal to take any wild bird or damage or

destroy the nests and eggs of breeding birds. There are certain exceptions to this in respect of wildfowl, game birds and certain species that may cause damage.

All native reptilian species in the UK are subject to partial protection from intentional or reckless killing or injury only.

The Act also includes provisions for the control of invasive non-native species (INNS). Under these provisions it is an offence to:

- Release or allow to escape into the wild any animal which is not ordinarily resident or a regular visitor to Great Britain or is included in Schedule 9 of the Act.
- Plant or otherwise cause to grow in the wild any plant which is included in Schedule 9 of the Act.

People undertaking works in proximity to invasive non-native plant species should take all reasonable steps and exercise all due diligence to avoid committing an offence.

### **The Invasive Alien Species (Enforcement and Permitting) Order 2019**

The order came into effect on the 1 December 2019 to allow for enforcement of EU Regulations (Regulation (EU) No. 1143/2014 on the prevention and management of the introduction and spread of invasive alien species in England and Wales) also known as the IAS Regulations.

It lists 66 species which are of European Union concern. There are currently 19 species listed in the Order:

- Chinese Mitten Crab *Eriocheir sinensis*
- Red Swamp Crayfish *Procambarus clarkii*
- Crayfish Signal *Pacifastacus leniusculus*
- Spiny Cheek Crayfish *Orconectes limosus*
- Muntjac Deer *Muntiacus reevesi*
- Ruddy Duck *Oxyura jamaicensis*
- Egyptian Goose *Alopochen aegyptiacus*
- Grey Squirrel *Sciurus carolinensis*
- Himalayan Balsam *Impatiens glandulifera*



- Fanwort (otherwise known as Carolina Water Shield) *Cabomba caroliniana*
- Giant Hogweed *Heracleum mantegazzianum*
- Water Hyacinth *Eichhornia crassipes*
- Parrots Feather *Myriophyllum aquaticum*
- Floating Pennywort *Hydrocotyle ranunculoides*
- Floating Water Primrose *Ludwigia peploides*
- Water Primrose *Ludwigia grandiflora*
- Giant Rhubarb *Gunnera tinctoria*
- Curly Waterweed *Lagarosiphon major*
- Nuttall's Waterweed *Elodea nuttallii*

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

The UK Biodiversity Plan (BAP) was a programme designed to help conserve the UK's biodiversity. It led to the production of 436 action plans between 1995 and 1999 to help many of the UK's most threatened species and habitats to recover. A review of the UK BAP priority list in 2007 led to the identification of 1,150 species and 65 habitats that met the BAP criteria at UK level.

Currently 56 Habitats of Principal Importance and 943 Species of Principal Importance are included within Schedule 41 of the NERC Act 2006 and these include species and habitats which were identified in the UK BAP and which continue to be considered to represent the conservation priorities of England in the UK Post-2010 Biodiversity Framework.

### **National Planning Policy Framework (NPPF) 2021**

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications:

*“Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*174 a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);*

*174 b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*

*174 c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*

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

*174 e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*

*174 f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”*

## 3. Methodologies

### 3.1. Desk Study

Details in relation to internationally designated sites within 5km and nationally designated sites with 2km were obtained from [www.magic.gov.uk](http://www.magic.gov.uk). A search was also completed using the same database for the following, within 2km of the site:

- Granted EPS development licences.
- GCN Class Survey Licence returns
- Pond surveys 2017-2019.

Habitats and Species of Principal Importance included within Section 41 of the Natural Environment and Rural Communities (NERC) Act and Local Biodiversity Action Plan (LBAP) priority habitats and species were also reviewed to compare to those habitats and species recorded within the site during the survey or recorded as having potential to be present due to habitat suitability.

Ecological records were obtained from Suffolk Biodiversity Information Service (SBIS) on 3 July 2023. These records included details of statutorily and non-statutorily designated sites and species records within the site and a 2km radius of the approximate central point of the site, as follows:

- statutory nature conservation sites: Site of Species Scientific Interest (SSSI), Special Protection Areas (SPA), Special Areas of Conservation (SAC), Ramsar Sites, National Nature Reserves (NNR) and Local Nature Reserves (LNR);
- non-statutory nature conservation sites: Local Wildlife Site (LWS), County Wildlife Sites (CWS), Wildlife Trust Reserve (WTR) and/or Potential Wildlife Site (PWS); and
- all legally protected species, species of conservation significance and notable species records.

### 3.2. Preliminary Ecological Appraisal Survey

A PEA site survey<sup>1, 2</sup> was undertaken on 5 July 2023 by an experienced ecologist, Richard Moores BSc (Hons) MCIEEM. The survey was completed during suitable weather conditions (sunny/dry). Prior to the completion of the site survey, aerial imagery was reviewed<sup>3</sup> to provide an indication of habitat types present in the area.

During the survey all areas within the site and adjacent areas were walked and habitat types assessed. Signs of protected species, invasive plants (*i.e.* those included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)) and other notable species were also searched for, as well as noting habitats considered to have the potential to support protected species.

The ultimate purpose of this PEA was to identify potentially valuable habitats and plant species assemblages, and to identify the presence and/or potential for protected/controlled species. This report presents an assessment of the ecological significance of the features present and discusses the potential for the site to support legally protected species and/or species of conservation interest which may be impacted by the project.

### 3.3. Bats

#### 3.3.1. Preliminary Ground Level Inspection

Preliminary Ground Level Inspection (PGLI) surveys of all trees in areas where disturbance from the proposed development was possible was completed to determine their potential suitability for roosting bats. This assessment involved the detailed inspection of the exterior of each tree from ground level using binoculars and a high-powered torch to identify and illuminate features that may support roosting bats (Potential Roost Features (PRFs)).

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1 Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London

2 CIEEM (2017) *Guidelines for preliminary ecological appraisal* [online] available at: <https://www.cieem.net/guidance-on-preliminary-ecological-appraisal-gpea-> (accessed 5 July 2023)

3 Google Maps [online] available at: <https://www.google.co.uk/maps> (accessed 4 July 2023)

The potential suitability of the trees to be impacted by the proposed development for roosting bats was assessed in line with relevant guideline<sup>4</sup> and allocated to one of the categories detailed within **Table 1**.

**Table 1.** Guidelines for assessing the potential suitability of proposed development sites for bats

Suitability	Description of Roosting Habitats
<b>Negligible</b>	Negligible habitat features on site likely to be used by roosting bats.
<b>Low</b>	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
<b>Moderate</b>	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
<b>High</b>	A structure/tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
<b>Conformed Roost</b>	Roosting bats observed, or definitive evidence of roosting bats encountered.

### 3.3.2. Foraging and Commuting Habitat

An assessment was made of the suitability of the site and the surrounding landscape to support foraging and/or commuting bats. The assessment was based on the presence of key habitat features such as woodland, scrub, hedgerows, grassland and open water, which are highly attractive to bats. Of potential importance is the presence of unlit (semi)-natural vegetation and habitat linkage between the site and the surrounding landscape.

4 Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London

The quality of bat foraging and commuting habitat has been assessed using the criteria detailed in **Table 2**.

**Table 2.** Valuing bat foraging and commuting habitat

Grading Criteria	Reason
Optimal Quality	Presence of optimal habitat features such as unlit woodland, scrub, hedgerows, grassland and open water with excellent linkage to similar habitats within the wider landscape. Presence of high potential buildings/trees and/or known roosts within immediate landscape. Sites are generally rural in character.
Moderate Quality	Presence of optimal habitat features such as woodland, scrub, hedgerows, grassland and open water with reasonable linkage to similar habitats within the wider landscape. Limiting factors may include size of site.
Low Quality	Presence of some limited habitat features such as scrub or hedgerows, with minimal linkage to suitable habitats within the wider landscape.
Poor Quality	No suitable habitat present or, if present, highly degraded/fragmented. Minimal unlit areas with no linkage to suitable habitat beyond site. Generally urban in character.

### 3.4. Great Crested Newts

The presence of water features within 0.25km (considered to be the typical ranging distance from a breeding pond of the majority of a population of GCN<sup>5</sup> with another study<sup>6</sup> finding that 95% of newt summer refuges are within 63m of breeding ponds) of the site prompted the completion of Habitat Suitability Index (HSI) assessments, which were completed following the PEA.

The HSI for Great Crested Newt (GCN) is a numerical index, between 0 and 1, and provides a measure of habitat suitability. In general, ponds with high HSI scores are more likely to support GCN than those with low scores (**Table 3**). However, the system is not sufficiently precise to conclude that any particular pond with a high score will support GCN, or that any pond with a low score will not do so.

<sup>5</sup> English Nature (2001). Great Crested Newt Mitigation Guidelines

<sup>6</sup> Jehle, R. (2000). The terrestrial summer habitat of radio-tracked Great Crested Newt and Marbled Newts. Herpetological Journal 10: 137-142.

**Table 3.** Predicted presence of GCN based upon HSI results

HSI Score	Pond Suitability	Predicted Occupancy (%)
<0.5	Poor	3
0.5-0.59	Below average	20
0.6-0.69	Average	55
0.7-0.79	Good	79
>0.8	Excellent	93

### 3.5. Limitations

The findings presented in this report represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys can be limited by factors affecting the presence of plants and animals, such as the time of year, migration patterns and behaviour.

Whilst not a full protected species or botanical survey, a PEA allows an experienced ecologist to obtain a sufficient understanding of the ecology of a site in order to either evaluate the conservation importance of the site, and assess the potential for impacts on habitats and species likely to represent a material consideration in planning terms, or to ascertain that further surveys will be required before such an evaluation can be made.

The absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future.

## 4. Results

The results of the desk study (Section 4.1) and the site surveys (Section 4.2) are presented below.

### 4.1. Desk Study

There were no internationally (5km) or nationally (2km) designated sites within the relevant search areas. Two non-statutorily designated sites were present within the 2km search area, details are provided within **Table 4**.

**Table 4.** Designated site details

Site	Approx. distance from site centre/direction	Description
<b>Non-statutorily designated sites (2km)</b>		
Forrold Meadow County Wildlife Site (CWS)	0.87km/NE	This CWS is a 1.52ha species-rich grassland which is a priority habitat with good assemblage of meadow flora. Hedgehog has been recorded here. The site also includes an ancient hedgerow and two ponds. The site provides great habitat opportunities for priority species such as Stag Beetle <i>Lucanus cervus</i> , GCN, Grass Snake <i>Natrix helvetica</i> .
Roadside Nature Reserve (RNR) 70 CWS	0.91km/SE	This CWS is a 0.44ha is also designated as a RNR Reserve for its assemblage of Yellow Vetchling <i>Lathyrus aphaca</i> , Pyramidal Orchid <i>Anacamptis pyramidalis</i> .

Taking into account the nature of the proposals, the site and the location/qualifying features of the identified designated site, no impacts in relation to designated sites are anticipated and no further works are required. Designated sites are not considered further within this report.

### 4.2. PEA Site Survey

#### 4.2.1 Habitats

The location of the proposed annex was regularly mown amenity grassland (Photograph 1).



**Photograph 1. Site – looking northeast**



Dominated by common grasses, higher plants in the sward were relatively few but included Bristly Oxtongue *Helminthotheca echioides*, White Clover *Trifolium repens*, Field Bindweed *Convolvulus arvensis*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense*, Self-heal *Prunella vulgaris*, Daisy *Bellis perennis*, and Cat's-ear *Hypochaeris radicata*.

The northern boundary of the site comprised a hedgerow with Dogwoods *Cornus* spp., and Hazel *Corylus avellana*. The southern boundary comprised a post and rail fence.

The proposed access route will require clearance of a section of vegetation that runs along a shallow, dry ditch (**Photograph 2**).



**Photograph 2. Vegetation proposed for clearance to facilitate access**



Species in this area included Field Maple *Acer campestre*, Hazel, and fruit trees.

#### 4.2.2 Species

##### 4.2.2.1 Bats

#### Desk Study

SBIS returned records of the following bat species within 2km:

- 🦇 Unidentified bat *Chiroptera* –two records, the closest recorded 1.03km/N of the site.
- 🦇 Brown Long-eared Bat *Plecotus auritus* – two records, the closest record was 1.05km/N of the site.

- Unidentified Long-eared Bat species *Plecotus* – one record located 0.66km/NE.
- Noctule *Nyctalus noctula* – one record, location was provided with four-digit grid reference and therefore exact location could not be determined.
- Common Pipistrelle *Pipistrellus pipistrellus* - one record, location was provided with four-digit grid reference and therefore exact location could not be determined.
- Soprano Pipistrelle *Pipistrellus pygmaeus* – one record, location was provided with four-digit grid reference and therefore exact location could not be determined.
- Unidentified pipistrelle *Pipistrellus* spp. – three records, the closest recorded 0.66km/N from the site.
- Serotine Bat *Eptesicus serotinus* – one record, location was provided with four-digit grid reference and therefore exact location could not be determined.

No records of any granted EPS licences in relation to bats within 2km were available on MAGIC.

### Preliminary Ground Level Inspection (PGLI)

All trees to be impacted were immature and without features of potential value to roosting bats. As such, these trees were assessed to be of **NEGLIGIBLE** potential value to roosting bats (Table 1).

### Foraging and Commuting Habitat

The site was assessed to be of **LOW** quality (Table 2) for foraging/commuting bats due to its small size and habits present.

#### 4.2.2.2 Badger

SBIS returned one record of Badger within 2km.

No evidence of Badger was present within the site/adjacent areas and no further survey work is considered necessary. However, mitigation to ensure no Badgers (or other ground-dwelling mammals), come to harm is proposed.

#### 4.2.1.1. Other Section 41 Mammals

SBIS returned 56 records of Hedgehogs *Erinaceus europaeus*, two records of Brown Hare *Lepus europaeus*, two records of Water Vole *Arvicola amphibius*, 13 records of Harvest Mouse *Micromys minutus* and one record of Otter *Lutra lutra*.

It is highly likely that Hedgehogs and Brown Hares are occasionally present within the site. Optimal habitats for other Section 41 mammal species are absent from areas to be impacted and immediate surrounding area. The small area of vegetation to be cleared was checked for Hazel Dormouse *Muscardianus avellanarius* evidence and none was recorded; this area of Suffolk is outside the known range of this species. Taking into account the abundance of similar habitats in the vicinity, the potential for adverse impacts to Hedgehog, Brown Hare, or any other Section 41 mammal species within the site as a consequence of the proposed works, is considered highly unlikely. No further work in relation to other Section 41 mammals is considered necessary. Section 41 mammals are not considered further within this report.

#### 4.2.2.3 Amphibians

No records of granted EPS development licences in relation to GCN or GCN class licence returns were returned from MAGIC within 2km of the site.

Seven ponds were shown as present on Ordnance Survey mapping within 0.25km of the site (considered to be the typical ranging distance from a breeding pond for the majority of a population of GCN<sup>7</sup>) (Figure 3).

GCN typically have a maximum routine migratory range of 250m from breeding waterbodies during their terrestrial phase<sup>8</sup> and further studies suggest that 95% of newt summer refuges are within 63m of breeding ponds<sup>9</sup>.

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<sup>7</sup> English Nature (2001). *Great Crested Newt Mitigation Guidelines*

<sup>8</sup> Cresswell, W. & Warren, ER. (2004). An assessment of the efficiency of capture techniques and the value of different habitats for the Great Crested Newt *Triturus cristatus*. English Nature report

<sup>9</sup> Jehle, R. (2000). The terrestrial summer habitat of radio-tracked Great Crested Newt *Triturus cristatus* and Marbled Newts *T. marmoratus*. *Herpetological Journal* 10: 137-142.

**Figure 3. Ponds with 0.25km**




Two records of GCN were returned from SBIS, the closest recorded at Pond 3 located ca.120m northwest of the site in 2021.

SBIS returned two records of Smooth Newt *Lissotriton vulgaris*, one record of Common Toad *Bufo bufo*, three records of Common Frog *Rana temporaria*.


Pond 1 was found to be a ditch, that was dry at the time of the survey, and is reported (site owners pers.comm) to be dry every summer. Pond 7 was also dry and appeared to have been dry for a long time. Ponds 4 and 5 were on private land and therefore not accessible. Ponds 2, 3 and 6 were accessible and were subject to HSI assessment (Tables 5, 6 & 7).




**Table 5.** HSI result for Pond 2

Pond 2 - HSI		Photograph
Geographic Location	A	
Surface Area (m <sup>2</sup> )	600	
Desiccation Rate	Never	
Water Quality	Moderate	
Shading (% of margin)	65	
Waterfowl	Minor	
Fish	Possible	
Ponds within 1 km	10+	
Terrestrial Habitat Quality	Good	
Macrophyte Cover in Pond (%)	5	
<b>Pond 1 HSI Score</b>	<b>0.76 ('Good' Suitability)</b>	
Notes	None	

**Table 6.** HSI result for Pond 3

Pond 3 - HSI		Photograph
Geographic Location	A	
Surface Area (m <sup>2</sup> )	100	
Desiccation Rate	Never	
Water Quality	Moderate	
Shading (% of margin)	60	
Waterfowl	Absent	
Fish	Absent	
Ponds within 1 km	10+	
Terrestrial Habitat Quality	Good	
Macrophyte Cover in Pond (%)	30	
<b>Pond 1 HSI Score</b>	<b>0.75 ('Good' Suitability)</b>	
Notes	GCN record from this pond in 2021	

**Table 7. HSI result for Pond 6**

Pond 6 - HSI		Photograph
Geographic Location	A	
Surface Area (m <sup>2</sup> )	56	
Desiccation Rate	Sometimes	
Water Quality	Moderate	
Shading (% of margin)	5	
Waterfowl	Absent	
Fish	Absent	
Ponds within 1 km	10+	
Terrestrial Habitat Quality	Good	
Macrophyte Cover in Pond (%)	10	
<b>Pond 1 HSI Score</b>	<b>0.66 ('Average' Suitability)</b>	
Notes	None	

The majority of the site is considered unsuitable for GCN given that it is regularly mown amenity grassland. The small area of vegetation proposed for clearance to facilitate access may support low numbers of GCN at times. Given the proposals and considering that GCN have been confirmed as present within Pond 3, it is recommended that works in this area are conducted under the auspices of Precautionary Working Method Statement (PWMS) but that no further survey work is considered necessary.

#### 4.2.2.4 Reptiles

Habitats favoured by reptiles tend to be sunny, well-drained and often south-facing. Typical habitats include grass and heather heathland, chalk downland, coppiced woodland, sand dunes, disused allotments, suburban wasteland, road/railway embankments, golf course roughs, rough grassland, open woodland and woodland edge, immature plantation forestry, sea cliffs, moorland, disused quarries, non-intensive farmland and wild gardens. In addition, Grass Snakes *Natrix helvetica* favour damp habitats<sup>10</sup>.

SBIS did not returned any reptile records and the areas of the site to be impacted are considered unsuitable for any reptiles. No further survey work is considered necessary but in the unlikely event that any reptiles are disturbed during works must cease and the advice of a Suitably Qualified Ecologist (SQE) should be sought.

#### 4.2.2.5 Birds

SBIS returned numerous records of a range of bird species including 23 Schedule 1 species (Table 8).

**Table 8.** Desk study records of Schedule 1 birds

English Name	Scientific Name	No. of records
Barn Owl	<i>Tyto alba</i>	23
Black Redstart	<i>Phoenicurus ochruros</i>	2
Brambling	<i>Fringilla montifringilla</i>	3
Crossbill	<i>Loxia curvirostra</i>	2
Fieldfare	<i>Turdus pilaris</i>	14
Firecrest	<i>Regulus ignicapilla</i>	1
Garganey	<i>Spatula querquedula</i>	1
Green Sandpiper	<i>Tringa ochropus</i>	2
Greylag Goose	<i>Anser anser</i>	4
Gyr Falcon	<i>Falco rusticolus</i>	1
Hobby	<i>Falco subbuteo</i>	5
Honey-buzzard	<i>Pernis apivorus</i>	1
Kingfisher	<i>Alcedo atthis</i>	7
Little Ringed Plover	<i>Charadrius dubius</i>	1

10 Froglife (1999). *Froglife Advice Sheet 10; Reptile Survey. An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*



English Name	Scientific Name	No. of records
Marsh Harrier	<i>Circus aeruginosus</i>	2
Mediterranean Gull	<i>Ichthyaetus melanocephalus</i>	1
Merlin	<i>Falco columbarius</i>	1
Peregrine	<i>Falco peregrinus</i>	2
Pintail	<i>Anas acuta</i>	1
Red Kite	<i>Milvus milvus</i>	7
Redwing	<i>Turdus iliacus</i>	10
Whimbrel	<i>Numenius phaeopus</i>	1
White-tailed Eagle	<i>Haliaeetus albicilla</i>	1

Table 9 summarises bird species were recorded during the site survey.

**Table 9.** Birds observed during PEA site survey

English Name	Scientific Name	Comments
Robin	<i>Erithacus rubecula</i>	Two in garden
Blue Tit	<i>Cyanistes caeruleus</i>	Several in area
Woodpigeon	<i>Columba palumbus</i>	Several in area
Yellowhammer	<i>Emberiza citronella</i>	One singing in hedge to east
Goldfinch	<i>Carduelis carduelis</i>	Family party in area
Chiffchaff	<i>Phylloscopus colybita</i>	Family party in area
Blackcap	<i>Sylvia atricapilla</i>	Family party in area
Wren	<i>Troglodytes troglodytes</i>	Two in area
Duncock	<i>Prunella modularis</i>	Two in area

The areas of the site to be impacted and areas where disturbance could occur are considered unsuitable for nesting by any Schedule 1 species.

The areas of the site to be impacted are likely to be used by common species of nesting birds. No further survey work in relation to breeding/nesting birds is required. However, mitigation is required (Section 5).

#### 4.2.2.6 Invertebrates

SBIS returned records of two invertebrate species including one Schedule 5 species; Stag Beetle *Lucanus cervus* – one record from 2014.

Taking into account the nature of the habitats on-site/nearby it is considered highly unlikely that significant populations/species of invertebrates (including Stag Beetle) are present and no further works relating to invertebrates are considered necessary. Invertebrates are not considered further within this report.

#### 4.2.2.7 Invasive Plants

SBIS returned records of one species of Schedule 9 non-native invasive plant species; Himalayan Balsam *Impatiens glandulifera*, one record located 1.81km/SE from the site.

No non-native invasive plant species listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) were observed during the survey.

No further work in relation to invasive plants is considered necessary. Invasive plants are not considered further within this report.

## 5 Conclusions and Recommendations

A PEA site survey/complimentary desk study have been completed to inform proposed construction of a detached annex and access track on land at Limes Cottage, Forward Green, Suffolk. These surveys identified the below detailed ecological considerations/requirements, along with recommendations to ensure that the works are carried out lawfully and in such a manner to minimise ecological impacts.

### 5.2 General Mitigation

Standard pollution control measures should be implemented during construction to protect habitats on/adjacent to the site.

### 5.3 Bats - Roosts

The site survey did not find any evidence of roosting bats and the trees to be impacted were assessed to be of negligible value to roosting bats. Bat roosts are therefore assessed to be likely absent, and works can continue without limitation.

In the apparently unlikely event that bats are encountered during the redevelopment works, works must cease and the advice of a Suitably Qualified Ecologist (SQE) obtained.

### 5.4 Bats and Lighting

The site is likely to support low numbers of foraging bats and as such, it will be important to take this into account with regards to future site lighting proposals.

Artificial lighting can result in impacts to bats via a variety of mechanisms<sup>11</sup>. Many night flying species of insect are attracted to light, especially those lamps that emit an ultra-violet component, and particularly if it is a single light source in a dark area. Studies have shown that Noctule, Leisler's *N. leisleri* Serotine and pipistrelle *Pipistrellus* ssp. bats swarm around white mercury street lights (this would also apply to metal halide) feeding on the insects attracted to the light. Such behaviour is not true for all bat species, notably the slower flying broad-winged species such as long-eared bats *Plectotus* spp, *Myotis* species and Barbastelle. In addition, it is also thought that insects are attracted to lit areas from further afield. This is thought

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<sup>11</sup> Bat Conservation Trust (2018). *Guidance Note 08/18; Bats and Artificial Lighting in the UK.*

to result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light-avoiding bats to be able to feed. It is noticeable that most of Britain's rarest bats are among those species listed as avoiding light. Clearly, effective mitigation where there is potential for impacts on bats has importance in the conservation of these species.

Artificial lighting is thought to increase the chances of bats being preyed upon. Many avian predators will hunt bats which is one reason why bats avoid flying in the day. Observations have been made of a diurnal raptor, Kestrel *Falco tinnunculus*, hunting at night under the artificial light along motorways.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. Artificial lighting disrupts the normal 24-hour pattern of light and dark which is likely to affect the natural behaviour of bats. Bright light may reduce social flight activity and cause bats to move away from the lit area. Studies have shown that continuous lighting along linear features (i.e. roads/paths) creates barriers which some bat species cannot cross. For example, Daubenton's Bats move their flight paths to avoid streetlamps. The lighting scheme for the development should be sympathetic to bats, this should include:

- the use of low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.
- Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.
- The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

- The light should be as low as guidelines permit. If lighting is not needed, don't light.
- The times during which any lighting is on should be limited to provide some dark periods.
- If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

### 5.5 Badger

The occasional presence of foraging Badgers (and other ground dwelling mammals) in the site is considered possible. To ensure that ground dwelling mammals come to no harm during construction the following measures are recommended:

- covering trenches at the conclusion of each working day, or include a means of escape for any animal falling into excavations, and
- any temporarily exposed open pipe system should be capped in such a way as to prevent Badgers gaining access.

### 5.6 Great Crested Newt

GCN have been identified (through desk study) to be present ca. 120m from the site. The majority of the site is considered unsuitable for GCN given that it is regularly mown amenity grassland. The small area of vegetation proposed for clearance to facilitate access may support the odd GCN at times. Given the proposals and considering that GCN have been confirmed as present within Pond 3, it is recommended that works in this area are conducted under the auspices of Precautionary Working Method Statement (PWMS) but that no further survey work is considered necessary. This PWMS should detail methods of working to ensure no GCN come to harm.

## 5.7 Nesting Birds

Common species of birds will use the areas of the site to be impacted for nesting. The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. If re-development works are proposed for the bird nesting season (March-August inclusive), it will be necessary to appoint SQE to complete a check for active birds' nests. Should any active nests be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period, then no such check is necessary.

## 5.8 Opportunities for Enhancement

The National Planning Policy Framework (NPPF) sets out national planning policies for the protection of biodiversity (and geological) conservation through the planning system. A key principle of NPPF is that, '*Opportunities to incorporate biodiversity in and around developments should be encouraged*'. Taking the requirements of NPPF into account, opportunities should be sought where possible for nature conservation enhancement at this site.

Opportunities may exist to create small habitat areas and to use native species in any landscape planting. Opportunities also exist to enhance the site for bird species through the incorporation of bat/bird boxes into built structures or on retained trees. Species of conservation concern (e.g. House Sparrow *Passer domesticus*) could potentially benefit from the provision of appropriate boxes. Such measures would therefore be beneficial to nature conservation and show compliance with the policy guidance. It is recommended that a standalone ecological enhancement plan is produced once surveys are completed.

## 5.9 Report Validity

The findings of this report are considered valid for up to 18 months from the date of this report<sup>12</sup>. If the project is delayed beyond this period, an updated assessment of potential impacts will be required.

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12 CIEEM (2019). *Advice Note on The Lifespan of Ecological Reports and Surveys* [online] available at: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>