



**Robson Ecology Ltd.**



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# **Preliminary Bat Roost and Pond Assessment.**

of

**Harpers, Shooters Hatch Road, Pleshey,  
Chelmsford, CM3 1HU.**

<b>Survey Commissioned by:</b>	Mr Richard Tinson
<b>Project Number:</b>	REP23042
<b>Report issued:</b>	2 <sup>nd</sup> December 2023 (Draft: 1 <sup>st</sup> December 2023)
<b>Date of survey:</b>	13 <sup>th</sup> November 2023
<b>Ecologist:</b>	Odette Robson BSc (Hons) PhD MCIEEM

Project number:	Title:	Revision:	Issued:
REP23042	Preliminary Bat Roost and Pond Assessment at Harpers, Shooters Hatch Road, Pleshey, Chelmsford, CM3 1HU.	Final	2 <sup>nd</sup> December 2023
REP23042	Preliminary Bat Roost and Pond Assessment at Harpers, Shooters Hatch Road, Pleshey, Chelmsford, CM3 1HU.	Draft	1 <sup>st</sup> December 2023

**Disclaimer**

*The findings detailed in this report are based on evidence from thorough survey, where every effort has been taken to provide an accurate assessment of the site at the time of the survey. No liability can be assumed for omissions or changes after the survey has taken place.*

*This report was instructed by Mr Richard Tinson and following the brief agreed. Robson Ecology Ltd has made every effort to meet the client's brief.*

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## Summary

Site:	Harpers, Shooters Hatch Road, Pleshey, Chelmsford, CM3 1HU.
Grid Reference:	TL 63860 16795
Report Commissioned by:	Mr Richard Tinson
Date of Survey:	13 <sup>th</sup> November 2023

Species/issues	Impacts	Recommendations
<b>Bats</b>	Construction Phase Impact (roosting bats).	<p>Negligible risk of bats roosting under the single-storey slate lean-to that will be removed and replaced: All slates on the lean-to were well-sealed and lacked roosting opportunities. The void was shallow and filled with lagging insulation.</p> <p>A single brown long-eared bat was roosting in the loft-void of the main house at the time of the survey, though number of dropping (&lt;20) suggest low-level sporadic use. Although the main roof will not be directly impacted by proposed works, all works should be carried out under precautionary measures, to ensure that bats using the house loft are not impacted by replacement of the lean-to, which adjoins the house wall and does not affect the main roof or any potential access points.</p> <p>A European Protected Species licence and further survey will not be required if precautions are implemented during the demolition and construction phase.</p>
	Operational Phase Impact (commuting and foraging bats).	<p>Negligible impact to commuting or foraging bats: No foraging habitat will be lost, or flight lines interrupted, through proposals.</p> <p><u>Sensitive external lighting to retain dark corridors around the garden/site boundaries, mature trees, and any enhancement habitat boxes.</u></p>
<b>Great Crested Newts <i>Triturus cristatus</i>.</b>	Construction Phase Impact (terrestrial phase)	<p>The nearest pond was approximately 20m from the lean-to/extension, separated from the site by open garden lawn and scattered mature trees. The pond is likely to be a dry depression for most of the year and unlikely to support great crested newts.</p> <p>Habitat within the zone of impact was sub-optimal for great crested newts in their terrestrial phase (foraging or refuge/hibernation). Therefore, if newts are present in local ponds, they would not be impacted by proposals in the construction or operational phases, if precautionary working methods are implemented.</p> <p>Due to the small scale and low impact of the proposals, and lack of sensitive habitat in the impact zone, works are highly unlikely to impact great crested newts: <u>No further surveys required. A protected species licence is <b>not</b> required: The proposed works will not impact on individual great crested newts, or the local conservation status of great crested newts if a precautionary <i>Non-Licensed Method Statement</i> is secured as a Condition of any Planning Consent and implemented prior to any works starting and throughout the construction phase.</u></p>
<b>Birds</b>	Nesting bird potential	<p>There were no potential external nesting ledges/crevices, or access points on the lean-to for birds. No vegetation clearance is required to facilitate construction of the new lean-to extension.</p> <p>No further surveys or precautions are required.</p>

<b>Local Wildlife Site</b>	Crows Wood	Protection of mature garden trees and the woodland surrounding the House, some of which is designated as a Local Wildlife Site:  Retained trees close to the construction zone, or adjacent to the access route used by construction traffic, will be protected in line with BS5837: 2012, to avoid root compaction or damage from construction vehicles.
<b>Additional enhancement</b>	Roosting and nesting boxes in trees close to the house and a mammal ladder in the ornamental pond will achieve ecological enhancement, in line with planning objectives for positive gains for biodiversity through development.	

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# 1 Introduction

## 1.1 Background

Robson Ecology Ltd was commissioned to undertake a Bat Roost and Pond Assessment of a property at Harpers, Shooters Hatch Road, Pleshey, Chelmsford, CM3 1HU, to inform a planning application and legal obligations in relation to the replacement of a single-storey extension/lean-to at the rear of the house.

## 1.2 Legislation

Bats are strictly protected under European and UK legislation (Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and the Wildlife and Countryside Act, 1981). Four UK species are also listed under Annex II of the Habitats Directive.

Seven species are *Species of Principal Importance in England* (SPIE) - formerly UK Biodiversity Action Plan Priority (BAP): Barbastelle *Barbastella barbastellus*, noctule *Nyctalus noctula*, brown long-eared *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros* and Bechstein's bat *Myotis bechsteinii*.

Great crested newts are strictly protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and the Wildlife & Countryside Act 1981 (as amended). Therefore, presence/absence needs to be established in order to meet the specific requirements of the legislation, to inform design, mitigation and, if appropriate, a European Protected Species Licence (EPSL) application. Great crested newts are a priority species under Section 41 of the NERC Act (2000) which is a consideration under the National Planning Policy Framework - NPPF (MHCLG, 2021), placing responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments.

## 1.3 Aims and Objectives

All UK species of bats, and great crested newts, are protected under Regulation 41 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to deliberately or recklessly capture, injure, disturb or kill a great crested newt or bat; damage or destroy a breeding site or resting place used by a great crested newt or bat; or obstruct access to any structure or place used for shelter or protection.

The surveys were therefore required to:

- Identify the presence, or potential presence, of any bats, birds, or great crested newts;
- assess the potential impact of the proposals on protected species within the zone of impact;
- make recommendations for further surveys to inform the planning application and/or a protected species licence application (if required);
- detail any precautions required to protect bats, birds and great crested newts from impact, and/or mitigation or compensation, where necessary.

## 2 Survey Methodology

### 2.1 Site Survey

The site survey was undertaken by Odette Robson BSc (Hons) PhD MCIEEM, a full member of the Chartered Institute of Ecology & Environmental Management (MCIEEM); licensed by Natural England (Licence ref: CL18:2015 10940-CLS-CLS) to survey for bats (Level 2); a NE Registered Consultant under the Bat Mitigation Class Licence, Bats in Churches Class Licence, and Bat Earned Recognition Class Licence - CL47 (Accreditation Level 2); and great crested newts (2015-16945-CLS-CLS: Class licence Level 2).

During the survey, on 13<sup>th</sup> November 2023, the temperature was 11-12°C; the wind at Beaufort Scale 4, 90% cloud cover, intermittent light drizzle, and good visibility.

#### 2.1.1 Bats

The survey was undertaken in accordance with *Bat Surveys for Professional Ecologists: Best Practice Guidelines* (Collins, 2016). All parts of the house and immediate surroundings were assessed externally and internally for potential bat roosting features using binoculars, high-powered torch and a borescope inspection camera (Ridgid CA300).

Aerial photographs, available maps and survey of the area outside the immediate zone of impact (where access was available) was used to identify any bat habitat in the wider landscape which could be impacted by proposals. The likely impact of the replacement lean-to/extension (operational phase) to bats using the surrounding area (foraging and/or commuting) was also assessed.

#### 2.1.2 Great Crested Newts

Ponds and waterbodies within 250m of the site were identified from available maps, and site survey. Those within impact distance of the site works and ecologically connected were surveyed (where access was available) for potential to support great crested newts. Terrestrial habitat within the zone of impact was assessed for potential to support great crested newts.

#### 2.1.3 Desk Study

A 2km radius search for statutory designated sites was conducted using "MAGIC", the Multi-Agency Geographic Information system for the Countryside. A datasearch was requested from Essex Mammal Surveys: Records of all bat species within a 2km radius of the site were provided on 15<sup>th</sup> November 2023.

## 2.2 Site Context and Proposals

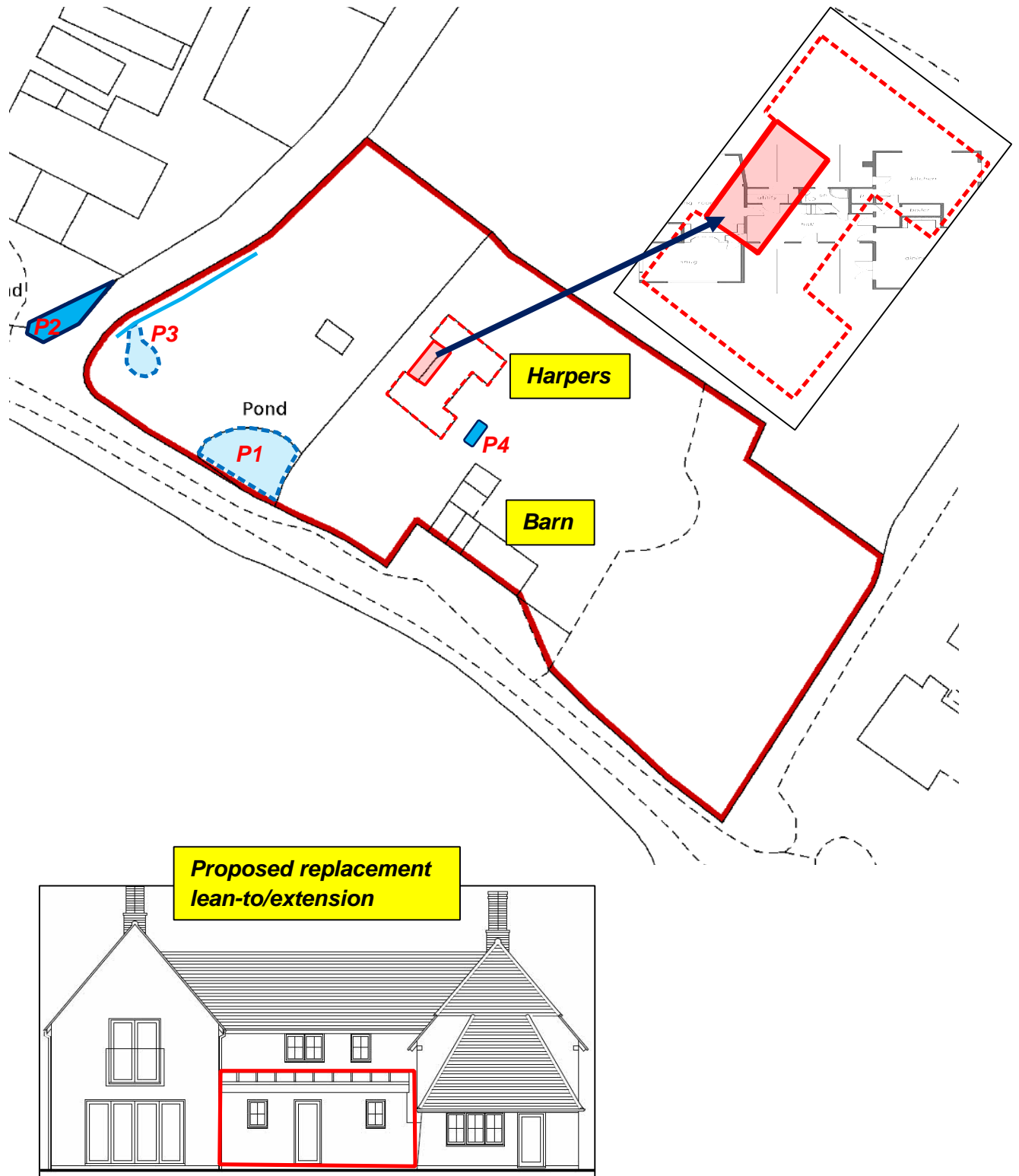
Harpers is a detached house approximately 4m to the south of Great Dunmow, and 9km to the north-west of the outskirts of Chelmsford.

The property is a late C16<sup>th</sup> Grade II listed timber-framed and plastered house (currently unoccupied), with peg-tiled roofs. A significant part of the House was added in the 1960s. The house is surrounded by maintained grounds including mature trees/woodland.

The wider landscape is predominantly agricultural - mainly arable land, small pockets of woodland, and hedged field boundaries.

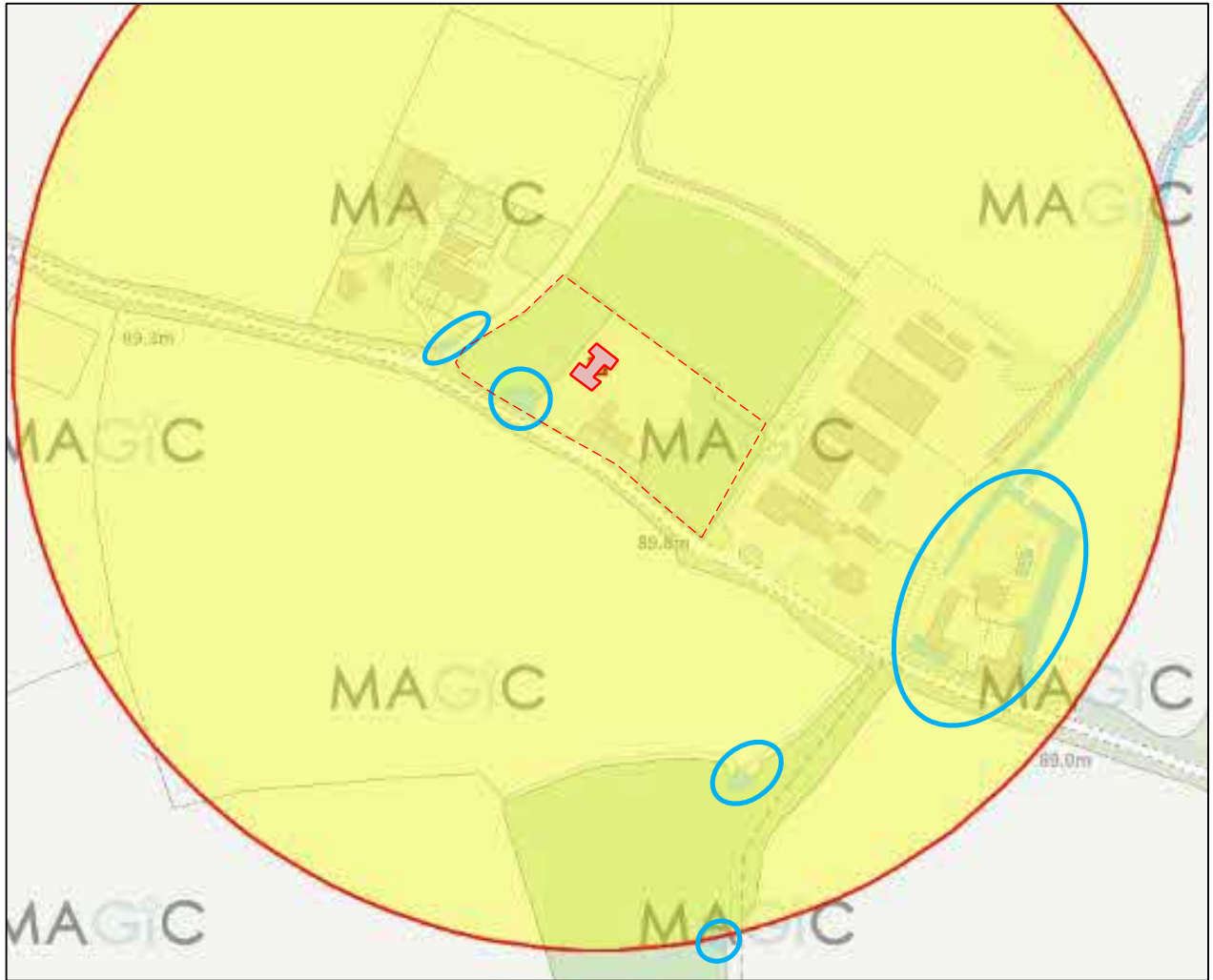
A number of small ponds and water bodies are present within the local landscape, though no significant large water bodies close to the site. Crow's Wood, a Local Wildlife Site, surrounds the property to the north, east, and west, and forms part of the garden: The next nearest woodland is Garnetts Wood, 1.2km to the north-west.

**Figure 2.1:** Harpers – site context and location of proposed replacement lean-to

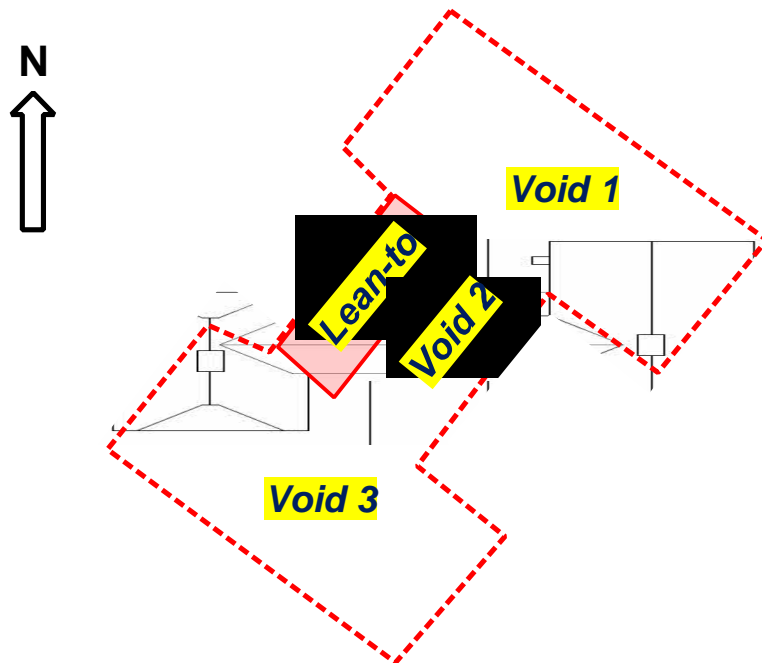




**Figure 2.2:** Ponds marked on maps within 250m of the site (MAGIC, 30/11/23)



**Figure 2.3:** Harpers roof voids



### 3 Results

#### 3.1 Desk Study

The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ); Consultation with Natural England is required for *residential development of 50 units or more*. Therefore, consultation would not be necessary for a householder planning application to replace and extend a lean-to on an existing dwelling.

There is one statutory designated wildlife sites within 2km: Garnetts Wood / Barnston Lays SSSI, designated as an ancient woodland, lies 1.2 km to the north-west.

The nearest European Protected Species (EPS) licence granted for bats is 2.4km to the south (EPSM2013-5974), for destruction of a common pipistrelle and brown long-eared bat resting place.

The nearest European Protected Species (EPS) licence granted for great crested newts is 3.2km to the south-west of Harpers (EPSM2013-6530), for destruction of a resting place. The nearest record of great crested newt presence is from Class Survey Licence Return data (MAGIC, 2023) – approximately 2km to the north-west.

##### 3.1.1 Datasearch

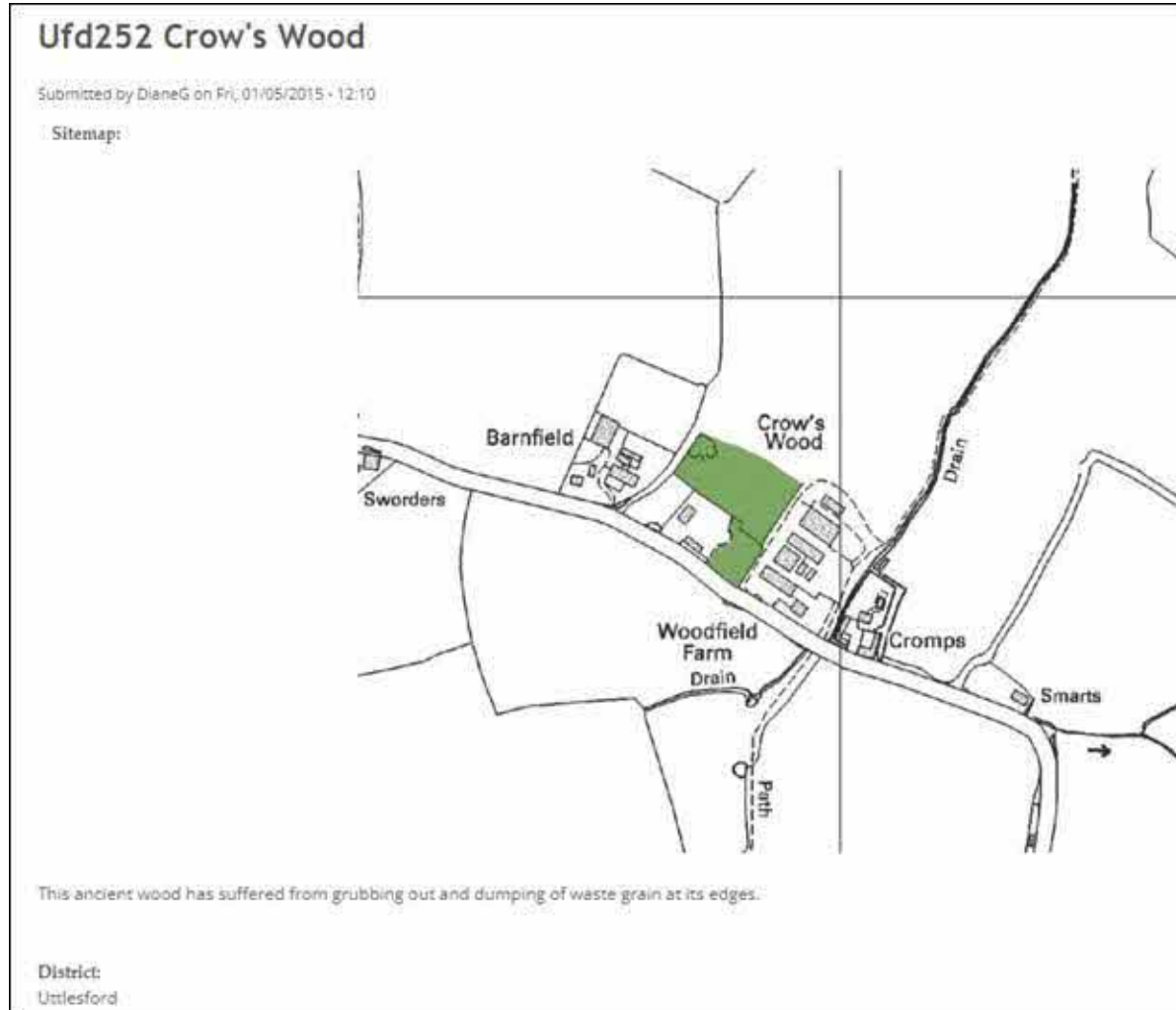
Essex Mammal Surveys (EMS, 2023) provided 22 records of bats (four species) within 2km of the site, as detailed below:

- Three common pipistrelle foraging records (1996 - 2012), nearest 1.3km to the north-west.
- Eight brown long-eared bat records (1992-2018), the nearest is 230m to the south-east.
- Seven pipistrelle roosts in buildings (1999 – 2016), all over a km from the site.
- A single soprano pipistrelle foraging record (2015), 2.7km to the south-west.
- Three Natterer's bat roosts in buildings (2006 – 2014), the nearest is 230m to the south-east.

##### 3.1.2 Local Wildlife Site and Ancient Woodland

Crows Wood which forms part of the garden of the property, is listed as a Local Wildlife Site and ancient and semi-natural woodland (MAGIC, November 2023). The citation shows woodland within 5m of the extension/lean-to area (on the western side of the House). However, this part of the garden is largely open and laid to lawn, with a band of trees along the boundary which are largely individual specimen trees.

**Figure 3.1:** Local Wildlife Site citation



**Figure 3.2:** Ancient Woodland listing on MAGIC (29/11/23)










### 3.2 Survey Results from 13<sup>th</sup> November 2023

The unoccupied dwelling was a timber-framed house with rendered external walls and pan-tiled roofs. The single-storey, slate-roofed lean-to which will be replaced and extended is attached to the north-west-facing elevation of the main house (Figure 2.1 and 2.3).

**Table 3.1:** Building assessment carried out on 13<sup>th</sup> November 2023.

Description/photo	
<p><b>Harpers - External</b></p> <p>Externally rendered walls were intact and sealed. Brickwork chimneys were sealed to tiles with concrete flashing and no notable missing mortar or damaged brickwork. Roof, ridge, and bonnet tiles were largely intact, with numerous minor lifting/gaps typical of pan-tiles. Southern wing was a hipped roof with catslide extension to the west; newer part (to the north) was gabled.</p> <p>Potential access points for bats under slipped/lifted roof tiles.</p>	
<p><b>Void 1</b></p> <p>Large, open loft void with modern roof timbers and lagging insulation. Bitumen-felt internal roof-lining was largely intact. A single brown long-eared bat was roosting at the ridge-beam with an accumulation of approximately 20 brown long-eared droppings of mixed age (some relatively fresh) in the middle section of the loft.</p>	
<div style="display: flex; justify-content: space-around;">   </div>	
<p><b>Void 2</b></p> <p>Narrow loft-void with modern roof timbers, bitumen-felt roof lining, and vermiculite insulation.</p> <p>No droppings or other evidence of roosting bats.</p> <p>Void is interconnected to roof voids of the northern and southern wings, though access to Void 1 is narrow and obscured by the internal chimney.</p>	

### Void 3

Narrow loft void under the hipped roof part of the house with historic roof timbers and bitumen-felt internal roof-lining. Evidence of past jackdaw nesting.

No droppings or other evidence of roosting bats.  
Internally interconnected to the other loft-voids.



### Lean-to




Single-storey lean-to off north-western elevation with slate mono-pitched roof. Small void above ceiling was bitumen-felt lined and filled with lagging insulation. Slates were intact and well-sealed with no gaps. Windows were well sealed into surrounding rendered walls, with no gaps that could be accessed by bats. Lean-to was well-sealed to wall of house with no gaps at roof or wall join.

The replacement lean-to will extend beyond the footprint of the existing structure, over existing patio which was sealed, with no potential access points which great crested newts could use as refuge/hibernation opportunities.





**Table 3.2:** Pond assessment carried out on 13<sup>th</sup> November 2023.

Pond Description	Photo
<p><b>P1: 20m SW of House:</b> Damp depression / garden pond.</p> <p>Marked on some maps as a pond but found to be a largely dry depression which may be seasonally waterlogged, but no aquatic or emergent vegetation which would suggest significant inundation. Shallow (&lt;10cm) standing water may be due to the recent heavy flooding in the area. Remnants of a bonfire at the base of the depression suggest that the pond is generally dry for significant periods. Partly shaded by mature trees.</p> <p><b>Very low potential to support great crested newts.</b></p>	
<p><b>P2: 50m SW of House:</b> No access (private land) – surveyed from site only.</p> <p>High water levels with significant Duckweed <i>Lemna</i> spp. cover. Poor/average water quality – cloudy and disturbed. Surrounded by bank with coarse grasses, Bramble <i>Rubus fruticosus</i>, and sparse mature trees.</p> <p><b>Potential to support great crested newts.</b></p>	
<p><b>P3: 40m SW of House:</b> The standing water at P3 is not marked on maps as a pond and likely to be ephemeral standing water due to the heavy flooding experienced in the region shortly before the survey.</p> <p>Grassed/vegetated base suggesting waterlogged ground rather than a pond.</p> <p><b>Negligible potential to support great crested newts.</b></p>	

**P4: Ornamental Garden Pond adjacent to eastern side of house:**

Small lined pond, approximately 2m<sup>2</sup>, surrounded by overhanging paving slabs with no exit points for amphibians.

Clear water (approximately 20cm deep) with Lilies growing over 60% of surface. No other notable aquatic/emergent vegetation.

**Negligible potential to support great crested newts.**



### 3.3 Suitability of Lean-to for Roosting Bats

An assessment was made under the criteria detailed in current Best Practice Guidelines (Collins, 2023).

Slates on the lean-to were all well-sealed, with no lifting or damaged slates that bats could use to access the cavity between the tiles and bitumen-felt roof lining – or the void itself.

No further surveys or licences are required to inform the planning/listed building application or to comply with wildlife legislation. However, precautionary working methods must be implemented during the construction phase to avoid indirect impacts to the known roost in the main roof of the house.

### 3.4 Foraging and Commuting Bats.

There is very good potential for foraging and commuting bats to move through the area, and around the property, due to high quality foraging habitat close to the house and in the wider local landscape (mature trees/woodland, water bodies, and farmland) and records of bats locally. The proposed lean-to replacement would not result in a net loss of habitat. There would be no impact to commuting or foraging bats if any new external lighting is sensitive to wildlife.

Lighting precautions should be implemented (Section 4.2.2.2) to maintain dark corridors around the garden boundaries and ensure bat activity in the local area is not impacted, and bats roosting on the house loft have dark commuting routes between roost and foraging grounds.

### 3.5 Pond Assessment for Great Crested Newts

Distance from a potentially suitable water body/terrestrial connectivity is a major factor in determining the potential suitability of a site to be used by great crested newts during their terrestrial phase. Small numbers of great crested newts have been known to range significant distances (1km) to colonise new ponds. However, research undertaken by English Nature (2006) has shown that it is most common to encounter them within 50m of a breeding pond, with few moving further than 100m unless significant linear features or suitable terrestrial habitat is involved, when great crested newts can be encountered at distances of between



150m-200m. At distances, greater than 200-250m great crested newts are hardly ever encountered.

Known water bodies within 250m (identified from available maps) were addressed for potential to support breeding amphibians. A network of ponds, over 150m to the east, were separated from the site by an active farm building complex. The nearest pond (20m from the House) appears to be only seasonally inundated and largely dry – no aquatic vegetation suggesting regular inundation. Remnant bonfire-sites within the bases of the ponds P1 and P3 suggest that these are regularly dry.

**Plate 3.1:** Habitat between the ponds and working zone for the lean-to extension/replacement.



The offsite pond to the south-west (P2) had potential to support protected amphibians and was surrounded by good quality terrestrial habitat with adjacent tree cover, dead wood and other good refuge, hibernation and foraging opportunities for amphibians. This reduces the likelihood of great crested newts travelling towards the house during their terrestrial phase to the construction zone, across the intervening open/mown grass and hardstanding paths/patio.

Ponds or ditches will not be impacted by the proposed extension/lean-to replacement: The managed garden is of low value as amphibian habitat. No tree, hedge, or scrub removal is required.

No high-quality terrestrial habitat for great crested newts lies within the clearance zone (footprint of extension and working area). There were no refuge or hibernation opportunities within the zone of impact: The walls of the property were intact to ground level and the new lean-to will extend slightly beyond the footprint of the existing lean-to, over an intact/sealed



patio area. There are no log/rubble piles, loose paving stones/slabs, hedgerow bases, rough grassland, or other foraging habitats within the zone of impact from proposed works.

Great crested newt surveys and/or a European Protected Species Licence will not be required to carry out the proposals due to the low/negligible risk of impact to newts, and no loss of potential amphibian habitat. A Precautionary Method Statement for amphibians should and included within a Construction Environment Management Plan (Biodiversity).

### **3.6 Nesting Birds**

Nesting birds and their eggs are protected under the Wildlife & Countryside Act 1981. There were no potential external nesting ledges, or access points for birds into the roof void of the lean-to/extension which will be impacted. Jackdaws had nested in the southern roof void of the main house, but this will not be impacted by proposed works. No trees or vegetation will be removed to facilitate the works. No further surveys or precautions are required for nesting birds.

### **3.7 Limitations and Assumptions**

The baseline conditions reported and assessed in this document represent those identified during a single site survey, on the 13<sup>th</sup> November 2023. A reasonable assessment of habitats can be made during a single survey; however, seasonal variations cannot be observed. The survey provides an overview of the likelihood of presence of roosting bats, birds, and newts, limited by the transient use of roosting opportunities by bats, and the short-lived nature of some signs (such as droppings). Where no evidence was found, this does not mean that bats do not use the buildings at some stage of the life-cycle. Further surveys are only recommended if there is a significant likelihood that bats/newts may be present and impacted by the proposed works, based on the suitability of the house, pond, surrounding habitat, connectivity and any direct evidence.

All areas of the site were accessible on the day of the survey, including the loft-voids. Ponds and terrestrial habitats in the zone of impact, were accessible and surveyed to inform the assessment for potential impact on protected amphibians however, Pond 2 could only be assessed from the site, with no direct access (private land). It was not possible to undertake *Habitat Suitability Index* calculations due to lack of close access to Pond 2, and low levels of standing water in other ponds.

All constraints were within normal limits and have been taken into consideration when drawing conclusions and recommendations from the survey.

## 4 Key Recommendations and Precautions

### 4.1 Further Surveys

Further surveys are not required to inform the planning application, or to comply with wildlife legislation. However, good practice precautionary measures (for great crested newts and bats) should be implemented during the construction phase. These should be formalised, along with any measures to protect the woodland/mature trees close to the site, within a CEMP: Biodiversity.

### 4.2 Precautionary Measures

To ensure compliance with wildlife legislation, avoidance measures and precautionary working methods should be implemented, as detailed below, to enable construction of the replacement lean-to without impacting any protected species or habitats.

#### 4.2.1 Great Crested Newts

There is a low risk that great crested newts could be present in ponds close to the property. However, it is highly unlikely that any great crested newts would be present within the zone of impact from construction works, given the low quality of the terrestrial habitat within the clearance zone (well-sealed paved patio, and managed garden/lawn) for amphibian foraging or hibernation/refuge habitat. Additionally, the good quality of the habitat close to the pond (outside the working zone), significantly reduces the probability that great crested newts would cross the site or use the site itself at any stage of the life-cycle. Due to the negligible potential for newts to be impacted or harmed during the construction or operational phase, a protected species licence is not required: The proposed works would not impact on individual great crested newts, or the local conservation status of great crested newts **if a precautionary Non-Licensed Method Statement is secured as a Condition of any Planning Consent**, and implemented prior to any works starting on the site, and during the construction phase. This will ensure that:

- An adequate buffer is maintained between water-bodies and site-works;
- Contractors do not inadvertently impact potential amphibian habitat close to the site;
- Local water bodies are protected from pollution incidents.
- Good-practice construction precautions are implemented (including providing escape routes from any trenches or deep footings; safe storage of materials).

#### 4.2.2 Bats

The proposed works would not impact on individual bats, or the local conservation status of bats if the following precautionary working measures are implemented during the construction phase:

- If bats are found at any stage of the works, works should cease immediately and the Project Ecologist or Natural England called for advice on how to proceed.
- Existing slates will be lifted by hand off the tiling battens during demolition of the lean-to. No tiles will be removed from the main roof of the House. Each slate will be turned over to check for bats clinging to the underside, before being laid aside for re-use or discarded.

- Breathable membranes which have not been approved for use in bat roosts will not be used on the new roof or walls if there are gaps which bats could access (bats can access gaps of 1cm wide or more).
- To avoid disturbance to bats in the main roof loft, all construction works will be carried out with minimal noise, vibration, and disturbance. Screws and hand-tools will be used where feasible: Hammers, nails and power tools to be used only if there is no alternative.
- The main roof void of the House (V1, V2 and V3) will not be accessed without supervision of a licensed bat-worker.

#### **4.2.2.1 Breathable roofing/wall membranes**

Breathable roofing and wall membranes should only be used in areas which bats cannot access: If there are gaps which bats can access (over 1cm) then a bat-safe membrane should be used: Bitumen 1F felt that has a non-woven, short fibre construction. If a breathable, non-bitumen coated roofing membrane is used, this must pass a snagging propensity test to ensure that the material can stand the repeated snagging actions of roosting bats. Further clarification on this is detailed on the Bat Conservation Trust website <https://www.bats.org.uk/our-work/buildings-planning-and-development/non-bitumen-coated-roofing-membranes>

#### **4.2.2.2 Sensitive Lighting**

Due to bat roosting in the house (main loft) and good quality foraging habitat close to the house, lighting should be minimized to encourage bats to use the property, both during the lean-to demolition/rebuilding works, and on completion (operational phase). Guidance from the Institute of Lighting Professionals and the Bat Conservation Trust (IPL 2023, 2018; ILE 2012, BCT 2009) has been used to inform the following considerations:

- No lighting should be directed towards the garden mature trees, woodland, or boundaries which should be maintained as dark corridors.
- LED luminaires should be used where possible (No UV elements: Metal halide, fluorescent sources should not be used).
- A warm white spectrum (ideally <2700Kelvin) should be used to reduce the blue light component.
- Peak wavelengths higher than 550nm should be used to avoid the component of light most disturbing to bats (Stone, 2012).
- Only luminaires with an upward light ratio of 0% and with good optical control should be used (See ILP 2011).
- Any external security lighting should be set on motion-sensors sensitive to large moving objects only, and short (<1 minute) timers.
- All external lighting should be kept to the minimal feasible level and be directed downward: Baffles, hoods or louvres can be used to reduce light spill and direct it only to where needed.
- Lighting should be appropriately directed to avoid illuminating mature trees, woodland, and any mitigation/enhancement habitat boxes.
- Building works should only be undertaken during daylight hours and task lighting should not be used during the construction or operational phases of the project.

## **5 Ecological Enhancement (Habitat Boxes)**

These additional recommendations would enhance the value of the site for wildlife, as encouraged through the NPPF (MHCLG, 2021), and to help achieve Essex biodiversity targets. Woodcrete boxes are more durable and long-lasting than wooden alternatives.

### **5.1.1 Bat Boxes**

Schwegler 2F and 2FN bat boxes (Table 5.1) could be installed on a mature tree close to the ponds, facing south-east and south-west to receive sun for part of the day, at least 4m above ground level, and sited out of reach of cats. There must be unobstructed flight access enabling entry/exit for bats, but with suitable flight-lines in close proximity. The access hole is at the base so that the boxes are self-cleaning and do not require any maintenance.

No external lighting should be installed close to the boxes or directed towards the boxes. Surrounding vegetation should be maintained to facilitate an open flight-line into the box for bats.

Bat boxes should be left in perpetuity and must only be checked internally or moved by individuals licenced by Natural England to survey and handle bats. Annual checking (from the ground) must be carried out to ensure the boxes are securely and safely fixed to the tree.

### **5.1.2 Sparrow Boxes**





House Sparrows are listed on the Birds of Conservation Concern red-list (Stanbury *et al*, 2021) and are Species of Principal Importance for conservation of biodiversity in England (SPIE) - formally BAP species. This is a colonial nesting species that readily uses nesting boxes of the type specified in Figure 5.1.

A group of two or three individual sparrow boxes should be located close together on mature trees in the garden. Boxes should be installed at least 3m above the ground and should be north or east facing, avoiding direct sunlight (not directly south-facing) and prevailing wind. Boxes should also be out of reach of cats and other predators.

### **5.1.3 Hedgehog Ramp/Mammal Ladder**

The ornamental pond (P4) should have an escape ramp created (using wood, stones, or chicken wire), so any hedgehogs, amphibians, or other wildlife can climb out.

**Figure 5.1:** Specification of bat and bird boxes:

<p><b>Schwegler 2F Bat Box</b></p> <p>Multi-purpose bat box for pipistrelles – tree-mounted. Manufactured from long-lasting Woodcrete, a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years.</p> 	<p><b>Schwegler 1B (32mm hole)</b></p> <p>General purpose nesting box; for house sparrows. To be located together in a group for colonial nesting species.</p> 
<p><b>Schwegler 2FN Bat Box</b></p> <p>The 2FN bat box is for bigger bats (e.g., noctule, brown long-eared) and should be sited in trees and is best positioned at a height of between 3 to 6 metres.</p> 	<p><b>Mammal ladder</b></p> <p>In Ornamental Pond (P4) to facilitate exit of wildlife that may become trapped (e.g., Hedgehogs).</p> 

## 6 Conclusion

It is likely that the proposed replacement/extended lean-to can proceed with negligible impact on bats, birds, great crested newts or other protected species, if precautionary working methods are implemented during the demolition and the construction phase, to avoid impact to bats using the main roof of the house, and any protected amphibians, if present in the adjacent water bodies. A Non-Licensed Method Statement for Amphibians should be included within a *Construction Environment Method Statement (Biodiversity)* to ensure that the adjacent Local Wildlife Site/woodland, bat roost in the house loft, and any amphibians using adjacent water bodies, are not impacted by proposed works.

This survey / advice is specific to the planning application for a replacement single-storey extension/lean-to: Any additional works (such as re-roofing or works within the lofts of the house) must be informed by further surveys due to presence of a bat roost.

There is scope to further enhance the property for bats and birds through incorporation of the roosting and nesting boxes detailed in Section 5, in line with planning objectives for positive gain for biodiversity through development.

## 7 References

Bat Conservation Trust. (2009). Bats and lighting in the UK- bats and the built environment series [www.bats.org.uk](http://www.bats.org.uk)

Collins, J. (ed) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4<sup>th</sup> Edn.). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

English Nature (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

Essex Mammal Surveys. 2023. Bat species data search within a 2km Radius of TL63860 16795. Provided November 15<sup>th</sup> 2023.

ILP (2023) Institute of Lighting Professionals. Bats and Artificial Lighting at Night. Guidance Note GN08/23.

ILP (2018). Institute of Lighting Professionals. Bats and artificial lighting in the UK Bats and the Built Environment series. Guidance Note 08/18.

IPE (2011) Institution of Lighting Engineers Guidance Notes for the Reduction of Obstructive Light

MHCLG (2021). National Planning Policy Framework. Available to download online from the Government website <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). The Status of Our Bird Populations: The Fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle Of Man and Second IUCN Red List Assessment of Extinction Risk for Great Britain. British Birds 114: 723-747.

Stone, E.L., Jones, G., Harris, S. (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Glob. Change Biol. 18, 2458–2465.

UK BAP from URL <http://jncc.defra.gov.uk/page-5717>

MAGIC (accessed 30<sup>th</sup> November 2023): Designated site data downloaded from URL <http://www.magic.gov.uk.html>