



Final Ecological Appraisal

Tylers Barn
Luffenhall
Stevenage
Hertfordshire

August 2024



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Declaration

This report has been produced endeavouring to follow the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct and ecological information has been provided in accordance with British Standards BS 42020 2013-Biodiversity - Code of practice for planning and development.

Whilst every effort has been taken to ensure this report accurately identifies potential ecological constraints to development or the likely presence or absence of species and the spatial and temporal use of the site by such species, it must only be viewed as a snap shot in time and reflects the ecological status of the site at the time of survey.

No liability can be assumed for ecological changes that may or may not occur on the surveyed site after the production of this report. The author of this report must be consulted as to the current applicability of the report if there are any seasonal delays in the use of this report.

This report can only be used for the purposes for which it was instructed and agreed at the time of commission.

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Executive Summary

The purpose of the report is to identify any residential redevelopment constraints for a small site comprising a barn and land at Luffenhall, near Stevenage, Hertfordshire, pertaining to biodiversity, protected species and Priority Species and Habitats.

In order to assess any redevelopment effects on important and protected sites, species and habitats, a desk study involving a biological data search, a Preliminary Ecological Appraisal (PEA), a Preliminary Bat Roosting Assessment (PBRA) and further species-specific surveys have been completed.

The results of the ecological studies revealed that the application site is not a designated site of nature conservation importance and neither will any locally designated sites be adversely affected by the redevelopment of the site. The application site was found to support just three habitats; a native hedgerow with trees, very small areas of mixed scrub and a single individual tree, none of which are considered significantly important although it is acknowledged that nationally, native hedgerows are listed as Habitats of Principal Importance. The PBRA of the barn, carried out in September 2023, found a building with some bat roosting potential, with few potential roosting locations and a few bat droppings inside the barn.

Whilst the on-site habitats are considered to be very low value, it was concluded that as well as the barn, the site may support other protected and important species such as nesting birds (in the native hedgerow with trees that is being retained), reptiles and hedgehogs (*Erinaceus europaeus*). As such, in order to assess the impact of the redevelopment on protected species, further surveys were recommended and have since been carried out. Specifically, presence/likely absence surveys for hedgehogs, bats and reptiles have been carried out, in the summer of 2024, by ELMAW Consulting.

Using the Statutory Biodiversity Small Sites Metric, the application site's habitats were assessed as being worth 0.1462 Habitat Units and its hedgerows worth 0.2960 Hedgerow Units. The proposed site layout has been finalised and the biodiversity net gain/loss have been calculated and the redevelopment of the

site will result in a +160.10% BNG in Habitat Units and a +40.71% BNG in Hedgerow Units.

1.0 Introduction

1.1 Background

- 1.1.1 It is proposed to demolish and clear the land within the red line boundary for a residential redevelopment. In support of the redevelopment proposals, in September 2023, ELMAW Consulting, Ecological Consultants and Wildlife Managers were commissioned, by BG Planning, to carry out a PEA and PBRA of the site, specifically the building and land associated with the building, within the curtilage of the application site boundary.
- 1.1.2 As a result of the PEA and PBRA, recommendations were made for species-specific surveys for bats, reptiles and hedgehogs and these have since been completed.
- 1.1.3 The report's author is Mr Keith Seaman, who holds a Bachelor of Science degree in Environmental Studies; Agri-Ecosystem Management, a Diploma of Higher Education in Ecology and a Certificate of Higher Education in Ecology and Conservation. His professional qualifications include membership of the Royal Society of Biology (RSB) registered as a Chartered Biologist and full membership of The Chartered Institute of Ecology and Environmental Management (CIEEM). Keith Seaman also holds Natural England Class licences for all species of bat, badger (*Meles meles*), great crested newt (*Triturus cristatus*), otter (*Lutra lutra*), barn owl (*Tyto alba*) and dormouse (*Muscardinus avellanarius*).
- 1.1.4 Keith Seaman has been a qualified Ecologist since 1995 and since then has gained considerable experience in both the public and private sectors carrying out Ecological Impact Assessments as well as protected species appraisals.

2.0 Planning Policy and Legislation

2.1 Relevant National and Local Planning Policies

National Planning Policy Framework

2.1.1 The National Planning Policy Framework (NPPF) superseded Planning Policy Statement 9 (PPS9) in March 2012. The NPPF 2023 states that '*planning policies and decisions should contribute to and enhance the natural and local environment by*', in part;

- *Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

It also states that '*when determining planning applications, local planning authorities should apply the following principles*';

- *If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused*
- *Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- *Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'*

2.2 Local Plan Policies

- 2.2.1 The North Hertfordshire District Council's Saved Local Plan (September 2007) is the current local level policy guidance covering the application site. The following policy from the document is, in part, relevant to this study;

Policy 14: Nature Conservation

- 2.2.2 'Elsewhere, or when a development proposal is acceptable, the Council will expect development proposals to take account of, and where possible, to show improvements to the nature conservation value of the site and its surroundings. In addition, the Council may require the preparation and implementation of a management scheme to maintain or enhance the site's nature conservation value'.

2.3 Legislation

The Conservation of Habitats and Species Regulations

- 2.3.1 The Conservation of Habitats and Species (Amendment (EU Exit)) Regulations 2019 implement the EC Habitats Directive in the UK. These regulations mainly deal with the protection of sites that are important for nature conservation in a European context (eg Special Areas of Protection [SACs] and Special Protection Areas [SPAs]). The legislation also gives protection to certain species of flora and fauna.
- 2.3.2 The Conservation of Habitats and Species Regulations 2010 make it an offence to deliberately capture, kill or disturb wild animals under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Wildlife & Countryside Act (WCA)

- 2.3.3 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive).

Natural Environment & Rural Communities Act (NERC)

- 2.3.4 The NERC Act of 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

3.0 Methodology

3.1 Preliminary Ecological Appraisal (PEA)

- 3.1.1 The PEA has been produced following the *Guidelines for Preliminary Ecological Appraisal* 2017 (Chartered Institute of Ecology and Environmental Management). Habitats have been described, based on the UKHab classification methodology. In some circumstances habitat descriptions and mapping have been adapted to suit non-standard, site-specific conditions.
- 3.1.2 This PEA was carried out by the report's author Mr Keith Seaman which included a walk-over survey on the 25th September 2023, in suitable weather conditions with no restriction over access over the entire application site. Some access limitations were experienced in small areas around the barn and impenetrable scrub, but this access limitation did not affect the assessment.

3.2 Scoping for Protected & Important Species

- 3.2.1 The habitat assessment and survey was extended to include a scope of the application site's habitats as to their likely importance or potential to support protected or important species and habitats, as identified under the following legislation; The Habitats Regulations 2019, the Wildlife & Countryside Act 1981 (as amended), the Protection of Badgers Act 1992, the Hedgerow Regulations 1997, International Union for Conservation of Nature (IUCN) Birds of Conservation Concern (BoCC) Red and Amber Lists and the Natural Environment & Rural Communities (NERC) Act 2006.
- 3.2.2 Some species and species groups were scoped out of the PEA because of a lack of biological records for those species or limitations in their geographical distribution and the absence of species-specific suitable habitat as well as connectivity within or adjacent to the site. Only those important and protected species and species groups deemed likely to be present on site or affected by the proposals were included in this study. The potential for the application site to support protected and important species was assessed on a number of ecological factors guided by published methodologies contained within a number of publications including;

Hedgerow Survey Handbook

Herpetofauna Worker's Manual

Bat Surveys for Professional Ecologists - Good Practice Guidelines

Badger

Bird Monitoring Methods

Great Crested Newt Conservation Handbook

Surveying Badgers - An occasional publication of the Mammal Society

3.3 The Statutory Biodiversity Metric

3.3.1 To calculate a Biodiversity Net Gain (BNG) the Statutory Biodiversity Metric uses habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted, depending on the condition and location of the habitat, to calculate 'biodiversity units' for the specific project or development. The Statutory Biodiversity Metric incorporates separate calculations for linear habitats that require a different method of measurement such as hedgerows and lines of trees, rivers and streams.

3.3.2 The Statutory Biodiversity Metric can be used to measure both on-site and off-site biodiversity changes for a development and can be used to measure the change in biodiversity achieved by different land management interventions. The Metric also accounts for some of the risks associated whenever new habitat is created or existing habitat is enhanced. The Metric calculates the change in biodiversity resulting from a development by subtracting the number of pre-intervention or 'baseline' biodiversity units (i.e., those originally existing on-site) from the number of post-intervention units (i.e., those projected to be provided after the development or change in land management).

The Statutory Small Sites Metric

3.3.3 There is a separate Metric for small sites – the *Small Sites Metric (SSM)*. This Metric provides a way to measure biodiversity and the impact that small development projects may have upon it in a consistent way. The SSM can only be used when both of these criteria are met:

1. *The development is either;*
 - a. *A residential development where the number of dwellings to be provided is between one and nine inclusive on a site having an area of less than one hectare*
 - b. *Where the number of dwellings to be provided is not known, there is a site area of less than 0.5ha*
 - c. *For all other development types where the site area is less than 0.5ha or 5000m²*

2. *There is no priority habitat within the development area (excluding hedgerows and arable margins).*

3.3.4 In line with local and national planning policies, in order for the development to minimise impacts on biodiversity and to provide a biodiversity net gain, the quantifiable biodiversity value of habitats within the site have been measured, the site boundaries are defined and then divided into appropriate parcels, to establish the on-site habitat baseline. The habitat type and size of these parcels and the condition of the habitat the parcels contain are recorded. The Metric uses industry standard methodologies for categorising habitats, carried out alongside routine ecological surveying. The biodiversity unit value of each habitat parcel is then calculated. To determine the unit value of a habitat parcel, the Metric assesses its 'quality'. The assessment of quality comprises four components; distinctiveness, condition, strategic significance and connectivity.

3.4 Preliminary Bat Roosting Assessment (PBRA)

3.4.1 The specified and adopted methodology for this aspect of the site's survey has been carried out following the guidelines published by The Bat Conservation Trust (Ref. 1).

3.4.2 It must be acknowledged however, that whilst we endeavoured to follow those guidelines, we reserved the right to adapt the survey methodology where appropriate as the aforementioned guidelines state that they should be interpreted and adapted on a case-by-case basis according to site specific conditions and professional judgement and examples given are not prescriptive but descriptive.

3.4.3 In carrying out the PBRA, equipment available for use included;

- ATP Instrumentation mini vane thermos-anemometer
- Lancelab telescopic camera lance
- Rigid Micro CA-300 hand-held inspection endoscopic camera
- Leica 10x42 BA Binoculars
- Collapsible ladder
- LEDLENSER P7R LED Torch

3.4.4 One barn and tree within the application site were assessed for bat roosting potential based, in part, on the following factors which potentially increase the

likelihood of roosting bats; more favourable roosting conditions may include features such as:

- Surrounding feeding and foraging habitat
- The presence of architectural features in the barns such as roof voids, lofts/attics, bargeboards, soffits, lead-flashing, hanging tiles, cavity walls, weather boarding, mortice and tenon jointed roof timbers and ridge tiles and beams
- Lined clay tile or slate roofs
- The presence of potential access points such as cracks, voids crevices and flight openings
- Complex roofs, orientations and wall elevations
- Favourable internal environmental conditions and temperatures
- Tree trunks and branches with cavities, rot holes, exfoliated bark and recesses

3.4.5 The building and tree inspections were carried out on the 25th September 2023. They were carried out by the report's author Mr Keith Seaman, with no restrictions to access.

3.5 Limitations of PBRA Survey

3.5.1 The Chartered Institute of Ecology & Environmental Management (CIEEM) advises that where mobile species such as bats are concerned, the PBRA is likely to be out of date within 12 - 18 months of reporting and will need updating.

3.6 Bat Observational Surveys

3.6.1 As a result of the 2023 PEA, the building on site was considered to have bat roosting potential. Consequently, two evening bat emergence surveys were recommended and have subsequently been carried out by licensed surveyors from ELMAW Consulting - Mr Keith Seaman, Mrs Emma Seaman (Natural England licence numbers are available on request) and experienced bat surveyor Ms Jasmine Stephenson – Assistant Ecologist with ELMAW Consulting.

3.6.2 In accordance with The Bat Conservation Trust's *Best Practice Guidelines 4th Edition* (Ref. 1), the evening emergence surveys were commenced fifteen minutes before sunset and continued for one and three quarter hours after sunset, during the typical bat roosting emergence period. All elevations that

contain Potential Roosting Features (PRFs) were covered by Night Vision Aids (NVAs), maintained by surveyors.

- 3.6.3 The equipment used included Canon XA series infrared video cameras (XA10, XA25, XA30 and XA40) and Nightfox Whisker digital infrared cameras, mounted on tripods. Additional Ward Optimal Extreme Limited Dark Sun Infrared torches and Nightfox XB5 Pro Infrared LED Torches were used for better vision in the darkest period. Each camera was paired with an Echo Meter Touch 2 PRO (EMT2PRO) full-spectrum detector, to record bat echolocation. All cameras and EMT2PROs were time-synced at the start of recording. Each surveyor also carried their own EMT2PRO detector, as well as two-way radios to liaise with other surveyors during the survey. Surveyors were patrolling the site during the survey, to ensure all technology was running and recording correctly and to maintain the security of the equipment. Analysis of the bat echolocation recordings were undertaken using BatSound software.
- 3.6.4 With regard to establishing the presence of roosting bats, it must be further acknowledged that surveys carried out in accordance with industry standards endeavour to establish the presence of bat roosts appropriate to the time of year when the surveys have been carried out. Surveys completed within the optimum period, as required by Natural England, endeavour to establish the presence of non-breeding summer roosts or important summer maternity roosts. Surveys carried out at this time of the year cannot, with any certainty, establish the presence of spring transitory or winter roosts, or seasonally-occupied opportunist roosts by single or low numbers of bats.

3.7 Assessment & Mitigation

- 3.7.1 The resulting assessment and evaluation of the survey findings and subsequent mitigation and compensatory strategy are informed by the advice and guidance published by The Bat Conservation Trust and Natural England in *Bat Surveys for Professional Ecologists - Good Practice Guidelines 4th Edition 2023* (Ref. 1), *Bat Workers' Manual 2004* (Ref. 4) and *Bat Mitigation Guidelines 2004* (Ref. 3).

3.8 Limitations of the Bat Activity Surveys

- 3.8.1 The surveys were completed in ideal weather conditions and in temperatures above 10°C. Therefore the environmental conditions of the surveys did not

constrain or limit the results. Survey methods, timings and equipment used were in line with industry standards as advocated by Natural England and the Bat Conservation Trust.

3.9 Reptile Presence/likely Absence Survey

- 3.9.1 The reptile presence/likely absence survey was carried out of all suitable habitat throughout the application site and in the field to the east of the site which interfaced with the small amounts of habitat within the application site itself. The survey was completed by experienced and qualified Ecologists Keith Seaman – Principal Ecologist with ELMAW Consulting and Jasmine Stephenson – Assistant Ecologist with ELMAW Consulting, in April, May, June, July and August of 2024.
- 3.9.2 Following industry standard methodology, a total of 21 Artificial Cover Objects (ACOs) were placed on the 2nd of April 2024 and left for several weeks to bed-in and for reptiles to begin to use them (should they be present). ACOs used are a mixture of corrugated tin, corrugated bitumen sheets or roofing felt at 0.5m², placed in suitable locations - in sunny areas and away from public areas to avoid disturbance (an aerial photograph showing the locations of the ACOs is appended to this report).



Plate 1: Corrugated bitumen ACO placed in suitable reptile habitat

- 3.9.3 All surveys were completed in suitable weather conditions and within acceptable industry standard parameters. Ideal temperatures are between 9 and 18°C. On cooler days, bright sunshine is a good time to survey along with hot days after a cold spell or showery weather after a prolonged dry spell.
- 3.9.4 Each individual ACO was initially inspected for basking reptiles and then lifted to locate sheltering reptiles on each survey visit. ACOs were approached carefully, casting no shadow, so as not to disturb any basking animals. At the same time, Direct Observation Surveys (DOS) were also carried out. This involved searching for reptiles that were basking in the open, on top of the sheets.
- 3.9.5 Five inspection lifts were made on the 29th April, 13th May, 6th of June, 4th of July and the 5th August 2024.

3.10 Hedgehog Tracking Tunnel Survey

- 3.10.1 Methodology for this survey, which is designed to detect the presence of this Priority Species, is based on that published by The Peoples' Trust for Endangered Species (PTES) – May 2015.
- 3.10.2 The tracking tunnel methodology is currently the only statistically robust way of determining whether hedgehogs are present or absent in any given area. The tracking tunnels are simple, plastic triangular tunnels constructed of light corrugated plastic. They contain a removable tracking plate that contains two 'ink' strips, an area for bait and two sheets of paper to record the hedgehog footprints. The tunnels contain 'bait' in the form of dry hedgehog food.



Plate 2: Hedgehog tracking tunnel in-situ

- 3.10.3 Hedgehogs can be surveyed at any time during their active period which is April to October in the UK. Tracking tunnels are positioned along linear features (eg hedgerows) and along the interface between different habitat areas. They are evenly distributed across the site and located where hedgehogs would preferentially walk. The locations of each tunnel are then plotted using

QField software. An aerial photograph with the locations of the tracking tunnels is appended to this report.

- 3.10.4 Tunnels were then checked every two weeks for hedgehog prints and the paper replaced, bait replenished and the trap re-inked. Checks were conducted in the morning as prints are more likely to be preserved in good condition.

3.11 Desk Study

- 3.11.1 Biological records of protected and important species and habitats from a radius of 2km around the application site were sourced from the Hertfordshire Environmental Records Centre on the 29th September 2023. Only species records from the last ten years were included as it was considered that records older than this are not sufficiently recent to be relevant to this study. In addition, all officially designated sites of nature conservation interest and importance (both statutory and non-statutory) have been identified - international sites within a 10km radius, national sites within a 5km radius and local sites within a 2km radius of the application site. The results of the data search request were received on the 4th October 2023.
- 3.11.2 Google earth aerial photographs and DEFRA's Magic Map Application images have been examined of the application site and surrounding landscape as have the relevant Ordnance Survey Explorer Maps at a 1:25,000 scale.

4.0 Baseline Ecological Conditions

4.1 Designated Sites

- 4.1.1 The application site itself is not a designated site of nature conservation importance.
- 4.1.2 There are no international sites of nature conservation importance within a 10km radius of the application site.
- 4.1.3 There is a single national site of nature conservation importance within 5km of the application site: Moor Hall Meadows Site of Special Scientific Interest (SSSI), which lies approximately 3.8km to the south-east of the application site.
- 4.1.4 There are no Local Nature Reserves (LNRs) or Herts & Middlesex Wildlife Trust Nature Reserves within 2km of the application site. There are 14 non-statutory Local Wildlife Sites (LWSs) within the 2km radius around the application site – the closest of which is Cromer Hall Meadows LWS which lies approximately 0.3km to the south-east of the application site. No direct significant impacts are predicted from the redevelopment of the application site on this LWS.
- 4.1.5 The remaining LWSs are found some distance from the application site, also separated by roads, and it is considered that these LWSs are too far from the application site, with no habitat connectivity, to be impacted by the redevelopment of the application site.

4.2 Habitats

- 4.2.1 The application site supports three distinct habitat types; mixed scrub, native hedgerow with trees and a single individual tree. In addition, there is a dilapidated barn with hard-standing surrounding it.
- 4.2.2 At the application site's entrance is a native hedgerow with trees along the road edge, dominated by hawthorn (*Crataegus monogyna*), with a number of trees growing amongst it including ash (*Fraxinus excelsior*), field maple (*Acer campestre*) and a conifer. The hedge is outgrown and overshadows the barn, with nothing growing beneath it. The hedgerow is categorised as a Native Hedgerow with Trees and the Small Sites Metric automatically assigns a Moderate condition to all Native Hedgerows with Trees.

- 4.2.3 Whilst the hedgerow with trees is considered species-poor, all hedgerows in the UK which support at least 80% native plants are listed as NERC Sect. 41 Habitats of Principal Importance. Locally however, such species-poor native hedgerows are extremely common and, as such, are only deemed to be of negligible value geographically.



Plate 3: View of the roadside Hedgerow with Trees

- 4.2.4 Mixed scrub is located in a number of locations throughout the application site, predominantly along the site's southern boundary, as well as in small, isolated clumps, up against the building. The mixed scrub is comprised of bramble (*Rubus fruticosus* agg.), nettle (*Urtica dioica*), elder (*Sambucus nigra*) and hawthorn.
- 4.2.5 Mixed scrub is not listed as a NERC Sect. 41 Habitat of Principal Importance and it is considered to be of negligible value because of its commonality as a UK habitat. Mixed scrub is automatically assigned a Moderate condition under the Small Sites Metric.



Plates 4 & 5: Mixed scrub at the site's entrance and growing around the barn

- 4.2.6 There is a single urban tree on site, adjacent to the eastern elevation of the barn; a semi-mature ash (*Fraxinus excelsior*) tree which is being retained on site. This tree is small and is automatically assigned a Moderate condition under the Statutory Small Sites Metric.

4.3 **Species and Species Groups**

Plants

- 4.3.1 The biological data search has revealed just one location for a protected species; bluebell (*Hyacinthoides non-scripta*), at Rydals Wood. The application site is not recorded as supporting either protected or important plant species. The site supports very common habitats, appearing to support typically common plants for their respective habitats and, as such, it is considered highly unlikely that the application site is important to protected or important plant species.

Invertebrates

- 4.3.2 There are six important invertebrate species recorded locally. Comprising three moths: blood vein (*Timandra comae*), ghost moth (*Hepialus humli*), latticed heath (*Chiasmia clathrate*) and three butterflies; small heath (*Coenonympha pamphilus pamphilus*) and small and Essex skipper (*Thymelicus sylvestris* & *T. lineola*). All six species are considered widespread and commonly found on a variety of grasslands and wastelands. The application site supports mixed scrub vegetation which would potentially support any one of these important species, but the lack of floristic diversity and very limited extent in area of these habitats would suggest the application site is unlikely to be significant to important assemblages of invertebrates.

Amphibians

- 4.3.3 Great crested newts are recorded from three locations within the 2km data search zone, but with no exact locations recorded. The closest pond to the application site that may support great crested newts is approximately 145m south of the site with records dated 2012. Should this pond support great crested newts, then the application site lies within great crested newt dispersal distance. However, with no ponds within the application site and virtually no suitable terrestrial habitat present on site, the presence of great crested newts

is considered to be very low, with the majority of a newt population considered ordinarily to be found within 100m of their natal pond. Their presence should not however be dismissed but is thought unlikely.

Reptiles

- 4.3.4 There are no reptiles recorded within the 2km radius data search zone. However, with suitable reptile habitat found within and adjacent to the village of Luffenhall, this absence of records was likely not to reflect the true status of reptiles locally.
- 4.3.5 Potential reptile habitat was found within the application site, mainly within the mixed scrub and hedgerow bottoms and in the adjacent field to the east of the application site. As such, it was concluded, at the time of the PEA, that the application had the potential to be important to the local reptile population, if extant on site and a reptile presence/likely absence survey was consequently conducted.

Birds

- 4.3.6 There are 25 important species of bird recorded within the data search zone including numerous farmland species likely to be found locally. Of the 25 species, three - house sparrow (*Passer domesticus*), spotted flycatcher (*Muscicapa striata*) and yellowhammer (*Emberiza citrinella*) - could potentially be found within the application site. However, nesting bird habitat within the site is very limited, restricted to the boundary hedgerow and mixed scrub. Whilst acknowledging the presence of limited common bird nesting habitat within the site, the application site is not considered likely important to important species of bird.

Badgers

- 4.3.7 Badgers are common and recorded locally however there are no badger setts on the application site and no indicative signs of badger that would suggest the site is important to this species.

Hedgehog

- 4.3.8 Hedgehogs are recorded locally, with a record at Cromer dated 2018. Generally, hedgehogs are considered widespread throughout Hertfordshire

and may be present within the village of Luffenhall. The application site supports habitat suitable for this species such as the mixed scrub and hedgerows. Therefore, a presence/likely absence survey was recommended and has since been conducted.

4.4 Preliminary Bat Roost Assessment

- 4.4.1 There is a single, L-shaped single-storey barn within the application site. The barn is constructed from timber with lined weatherboarding walls and an unlined, flat corrugated tin roof.



Plates 6 & 7: Two views of the barn

- 4.4.2 Internally, the barn is supported by flush-jointed timbers and parts of the walls are lined with boarding as is some of the ceiling. Whilst the flush-jointed timbers provide no recesses or voids in which bats could potentially roost, the wall and roof boarding does however provide a void in which bats could potentially roost. This is particularly evident on the wall and weatherboarding voids on the eastern elevation where a number of weatherboards are lifting, creating potential bat roosting entry points. However, potential bat roosting features appeared limited and large parts of the roof and walls are overshadowed by the lane-bounding hedgerow with trees. The potential value to roosting bats is thought to be low and, with limited roosting opportunities, a low bat roosting potential has been concluded.
- 4.4.3 There is evidence that bats, or a single bat, had been inside the south-western part of the barn as a couple of bat droppings were found on the floor and surfaces. This did not necessarily indicate roosting but may signify the presence of a transient or opportunist bat(s). Nevertheless it does increase the possibility that the barn does support roosting bats, to a greater or lesser degree.



Plates 8 & 9: Internal views of the barn showing lined and unlined walls and roofs



Plate 10: Lifting eastern elevation weatherboarding

- 4.4.4 As a result of the PBRA, it was determined that the barn had some bat roosting potential and two further evening emergence surveys have since been conducted by licensed surveyors from ELMAW Consulting - Mr Keith Seaman, Mrs Emma Seaman (Natural England licence numbers are available on request), assisted by experienced bat surveyor Ms Jasmine Stephenson – Assistant Ecologist with ELMAW Consulting.

4.5 2024 Evening Emergence Survey Results

Evening Emergence Survey – 31st May 2024

- 4.5.1 The survey commenced fifteen minutes before sunset, which was logged at 21:10. The weather conditions were dry with a slight breeze. The temperature at the start of the survey was 12.6°C, finishing at the end of the survey at 10°C.
- 4.5.2 At 21:34 (34 minutes past sunset), a single common pipistrelle (*Pipistrellus pipistrellus*) was observed flying around the wider site, briefly circling the

building. This bat had arrived from the north and did not emerge from the building. It did not remain on site.

- 4.5.3 At 22:15 (one hour and five minutes past sunset), a single soprano pipistrelle (*P. pygmaeus*) was filmed and recorded flying past one of the cameras from south to north. Again, this bat did not emerge from the building.
- 4.5.4 No bat emergence was observed or filmed from the building on this survey occasion.

Evening Emergence Survey – 26th June 2024

- 4.5.5 The survey commenced fifteen minutes before sunset, which was logged at 21:24. The weather conditions were clear, dry and with no wind. The starting temperature was 21°C, finishing at the end of the survey at 18°C.
- 4.5.6 At 22:35 (one hour and 11 minutes past sunset), a single common pipistrelle was detected, but not observed, within the site area.
- 4.5.7 At 22:37 (one hour and 13 minutes after sunset), a single common pipistrelle was observed and recorded flying along the hedgerow with trees, outside the site boundary to the west. This bat continued to feed and forage very intermittently along the hedgerow for 25 minutes, until the end of the survey.
- 4.5.8 Again, on this survey occasion, no bats were observed or filmed emerging from the building.

4.6 Results of Biodiversity Metric Calculations

On-Site Baseline Habitats

Habitat	Area (m ²)	Biodiversity Metric Condition (automatically assigned)	Habitat Units
Developed land, sealed surface	1,170	N/A - other	0.00
Mixed scrub	136	Moderate	0.11
Totals (excluding tree)	1,306		0.11
Individual Tree	40.69	Moderate	0.0374

On-site Baseline Habitat Retained:

Habitat type	Area (m ²) retained	Habitat Condition	Habitat Units Retained
Mixed scrub	106	Moderate	0.086
Urban tree	40.69	Moderate	0.0374

On-Site Hedgerow Baseline:

Hedgerow Type	Length (m)	Habitat Condition	Hedgerow Units
Native hedgerow with trees	37	Moderate	0.296
Totals	37		0.296

5.0 Ecological Constraints and Opportunities

The 2023 PEA established that the application site is not a designated site of nature conservation importance, nor are any such sites adjacent or in close proximity to the application site. Therefore, the redevelopment of the application site is not predicted to adversely affect important designated sites for conservation.

- 5.1.1 The application site supports a very limited diversity of habitats; a native hedgerow with trees, some very small areas of mixed scrub and a single individual tree - all of which are considered to be geographically of negligible value, albeit the native hedgerow with trees is listed as a NERC Sect. 41 Habitat of Principal Importance. The native hedgerow with trees is to be retained in the redevelopment of the application site and therefore it is thought unlikely that the redevelopment of the site would have an adverse impact on a Habitat of Principal Importance.
- 5.1.2 The redevelopment of the application site will however likely result in the loss of some of the mixed scrub however this habitat, as a vegetative feature, is considered to be species-poor and a very common habitat and therefore its loss at site level is not predicted to have a significant effect on important or protected habitats.
- 5.1.3 The PEA found the mixed scrub habitat had the potential to support both important and protected species; protected species of reptile could potentially be found utilising the adjacent field of tall forbs and boundary scrub as well as the hedgerow base within the application site. Therefore a reptile presence/likely absence survey was conducted in the summer of 2024 in all areas of habitat within and adjacent to the application site. No reptiles were encountered during the survey and therefore it has been concluded that reptiles do not represent a redevelopment constraint at this time.
- 5.1.4 In addition, it was concluded that the application site could support hedgehogs – a Species of Principal Importance. Therefore a hedgehog presence/likely absence survey for hedgehogs was also carried out in the summer of 2024. Again, no evidence of hedgehogs was found and this species

is considered to not represent a constraint to the application site's redevelopment at this time.

- 5.1.5 Finally, the PEA concluded that the barn on site had a low potential to support roosting bats and a likely low value to the local bat population. However, UK bats 'places of shelter' (their roosts) are protected under the current Habitat Regulations and therefore evening emergence surveys were carried out in May and June of 2024. On neither survey occasion was any bat emergence from the building observed or filmed and a generally low level of bat activity was recorded on the application site. Therefore, at this time, bats do not represent a constraint to the redevelopment of the application site.

5.2 Biodiversity Net Gain

- 5.2.1 The National Planning Policy Framework (NPPF) 2023 requires local planning authorities, when determining planning applications, to contribute to and enhance the natural and local environment by; (among other things); "*minimising impacts on and providing net gains for biodiversity....*"

On-Site Habitat Creation

- 5.2.2 The redevelopment of the application site will result in the creation of a new dwelling with a vegetated garden and will include the retention of boundary mixed scrub, single tree and the native hedgerow with trees. In addition, an additional area of native mixed scrub will be planted and eight new native or wildlife-beneficial trees will be planted. Together, these biodiversity gains will be worth 0.3804HUs. They will achieve an **+160.10%** biodiversity net gain in on-site habitats.

Site Habitat Creation	Area (m ²)	Biodiversity Metric Condition (automatically assigned)	Habitat Units
Developed land, sealed surface	635	N/A - other	0.00
Vegetated garden	461	Condition assessment N/A	0.089
Mixed scrub	104	Moderate	0.0696
Totals (excluding trees)	1,200		0.2581
Urban trees	325.56	Moderate	0.0995

On-Site Hedge Creation

Site Hedge Creation	Length (m)	Biodiversity Metric Condition (automatically assigned)	Hedgerow Units
Native hedgerow	36	Moderate	0.1205
Total	36		0.1205

5.2.3 A new native hedgerow comprising wildlife-beneficial species and measuring approximately 36m in total will be planted within the site as part of the soft landscaping proposals. This new hedgerow will be worth 0.1205 HrUs. This will achieve an **+40.71%** biodiversity net gain in hedgerow habitats.

5.2.4 The proposed biodiversity net gain measures discussed above are specific to this particular project and will form part of the design scheme for the application site. Their inclusion will ensure compliance with the NPPF and local planning policies. Should the design of the scheme change before being finalised, these measures may need to be reviewed.

5.3 Ecological Enhancements for Species

Bird Boxes

5.3.1 Two bird nest boxes will be erected – one on each of two new trees within the site, out of the reach of domestic cats. Siting can be advised by the ecologist.

Bats

5.3.2 A single cavity bat roosting tube will be installed in the new dwelling, on the western elevation, closest to the native hedgerow with trees.

5.3.3 The ecological enhancements detailed above are likely to be secured by an appropriate planning condition. This will ensure compliance with local and national policies.

5.4 Further Surveys

5.4.1 No further surveys are required at this time.

5.5 Further Considerations

- 5.5.1 All species of bat, to a greater or lesser degree, use their places of shelter in a temporal and spatial way which may affect the status of a site or building at any given time. Roost sites which may appear temporarily vacated or abandoned could be re-occupied at any time in the future.
- 5.5.2 The bat roosting data gathered for the application site was obtained in 2024. Because of the high mobility of roosting bats, this data is only considered reliable for 12-18 months and should be updated after 12-18 months from the date of the surveys. Natural England requires bat data of the current season to support any application for a European Protected Species Mitigation (EPSM) licence.

6.0 Conclusions

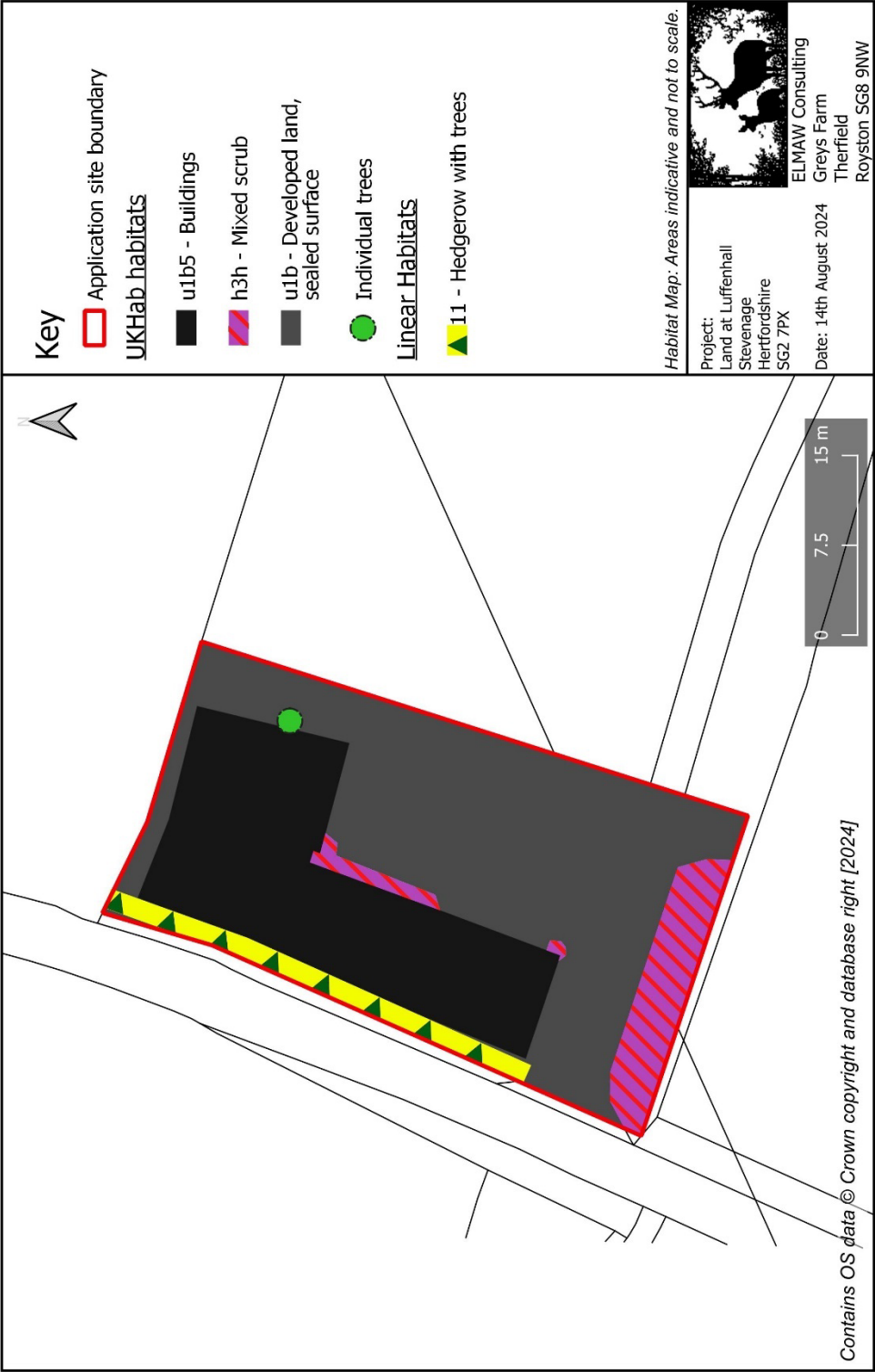
- 6.1.1 The purpose of the report is to identify potential redevelopment constraints pertaining to biodiversity and planning policies for biodiversity. The report, comprising of a PEA of the application site, a PBRA of the barn on site, further evening bat emergence surveys, a reptile presence/likely absence survey and a hedgehog presence/likely absence survey, has found that the site is not a designated site of nature conservation importance and nor are any such sites likely to be adversely implicated in the redevelopment of the site. It is also concluded that the redevelopment of the site will not adversely impact protected or Priority Species and/or Habitats, at this time.
- 6.1.2 The application site supports just three semi-natural habitats, a native hedgerow with trees, mixed scrub and a single individual tree. None of these habitats are considered important at site or neighbourhood level although native hedgerows are nationally considered to be Habitats of Principal Importance. With the habitats considered to be of very low value, any impacts on these habitats resulting from redevelopment are not predicted to be significant.
- 6.1.3 Although these habitats do have the potential to support protected and important species, specifically reptiles and hedgehogs, surveys have revealed their likely absence from within the site. In addition, the barn was considered to have a low potential to support roosting bats with a low number of possible roosting places identified and the location of a few bat droppings inside the barn. Further evening emergence bat surveys of the barn revealed no emergence or current evidence of bat roosting at this time.
- 6.1.4 The Statutory Small Sites Biodiversity Metric has calculated the application site's baseline to be worth 0.1462 Habitat Units (HUs). The proposed site layout has been provided and calculations of the proposed site layout result in a Biodiversity Net Gain of **+160.10%** in Habitat Units. Habitat creation on-site includes the retention of mixed scrub, the native hedgerow with trees and the single individual tree. In addition, a new area of native mixed scrub will be planted within the site, along with eight new trees. In addition, the planting of a new length of native hedgerow, measuring approximately 36m will result in a Biodiversity Net Gain of **+40.71%** in Hedgerow Units.

7.0 References

- Ref.1 Chartered Institute of Ecology & Environmental Management.
2017 Guidelines for Preliminary Ecological Appraisal
- Ref. 2 Chartered Institute of Ecology & Environmental Management.
2017 Guidelines for Ecological Report Writing
- Ref. 3 Joint Nature Conservation Committee. 2010. *Handbook for Phase 1 Habitat Survey* Revised re-print
- Ref. 4 UK Habitat Working Group (2018). *UK Habitat Classification*
- Ref. 5 Bat Conservation Trust. *2023 Bat Surveys for Professional Ecologists Good Practice Guidelines 4th Edition*, Bat Conservation Trust, London
- Ref. 6 Altringham, J.D. (2003). *British Bats*. HarperCollins Publishers. London.
- Ref. 7 Chartered Institute of Ecology and Environmental Management. (2023), *Bat Mitigation Guidelines*, CIEEM, Hampshire.
- Ref. 8 Joint Nature Conservation Committee. (2004), *Bat Workers' Manual*, JNCC, Peterborough.
- Ref. 9 Sewell D, Griffiths RA, Beebee TJC, Foster J and Wilkinson JW 2013 *Survey Protocols for the British Herpetofauna Version 1.0*
- Ref. 10 Rose F 2006 *The Wildflower Key* Fredrick Warne & Co.
- Ref. 11 Hubbard CE, 1992 *Grasses 3rd Edition* Penguin Books

8.0 Appendix 1

8.1 Habitat Map



9.0 Appendix 2 - Legislation

9.1 Legislation Relating to Bats

9.1.1 All bats and their roosts in the UK are protected by the Wildlife & Countryside Act 1981 (as amended), and under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended).

9.1.2 In England the legislation makes it illegal to;

- Deliberately capture, injure or kill a bat,
- Deliberately disturb a bat which is likely to impair their ability to survive, breed or reproduce, rear or nurture their young, hibernate, migrate or affect significantly their local distribution or abundance
- Damage or destroy a breeding site or resting place of a bat
- Possess, control, transport, sell, exchange or offer for sale or exchange any live or dead bat or any part of a bat

9.1.3 Bats' roosts (including resting places) are protected whether or not bats are present at the time. The Wildlife & Countryside Act 1981 (as amended) additionally makes it an offence to;

- Intentionally or recklessly disturb a bat at a roost
- Intentionally or recklessly obstruct access to a roost

9.1.4 Finally, under the Natural Environment and Rural Communities Act (NERC) 2006, a duty is placed on all public bodies to promote and enhance biodiversity in all its functions. There is a general biodiversity duty in the NERC Act (Section 40) which requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Section 41 draws up lists of species of principal importance to which special attention must be given and a number of bats are included in this list.

9.2 **Hedgehog**

- 9.2.1 The hedgehog is a UK Biodiversity Action Plan Species and Species of Principal Importance under Section 41 of the NERC Act 2000. The protection of these species is implemented through Local Planning Policy.

9.3 **Reptiles**

- 9.3.1 The Wildlife and Countryside Act 1981 (as amended) provides protection for all UK native reptile species under Schedule 5 (Section 9). Common lizard, slow worm, grass snake and adder receive partial protection – namely the intentional killing and injuring and trade in these species is prohibited. The CRow Act 2000 strengthened the existing provisions of the Wildlife & Countryside Act 1981 for the enforcement of wildlife legislation, including a new offence of 'recklessly' killing or injuring the above species.
- 9.3.2 These four species of reptile are also UK Biodiversity Action Plan Species and Species of Principal Importance under Section 41 of the NERC Act 2000. The protection of these species is implemented through Local Planning Policy.

10.0 Appendix 3

10.1 Reptile Survey – ACO Locations



11.0 Appendix 4

11.1 Hedgehog Survey - Tracking Tunnel Locations



12.0 Appendix 5

12.1 Statutory Small Sites Metric – Headline Results

Site Name		Land at Luffenhall	
Sheet Name		Headline Results	
Headline Results			
Headline		BNG Targets Met ✓	
Trading Rules		Trading Rules Satisfied ✓	
Next steps		Check for input errors/rule breaks present in the metric ⚠	
Baseline Units	Habitat units	0.1462	
	Hedgerow units	0.2960	
	Watercourse units	Zero Units Baseline	
Post-development Units	Habitat units	0.3804	
	Hedgerow units	0.4165	
	Watercourse units	0.0000	
Total net unit change	Habitat units	0.2341	✓
	Hedgerow units	0.1205	✓
	Watercourse units	0.0000	
Total net % change	Habitat units	160.10%	✓
	Hedgerow units	40.71%	✓
	Watercourse units	% target not appropriate	
Habitats units required to meet target		0.0000	
Hedgerow units required to meet target		0.0000	
Watercourse units required to meet target		0.0000	