Liz Lord Ecology

Woodlands, 217 Harwich Rd, Little Clacton

Ecological Impact Assessment

Client: Mr & Mrs Leiper

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1.0 SUMMARY

1.1 The site (located at NGR: TM 17288 20698) was found to comprise part of a large farmyard with a collection of generally dis-used agricultural buildings, surrounded by concrete hardstanding and amenity grassland. The site is surrounding by open farmland. Planning permission is being sought to demolish the buildings and replace with five new bungalows, accessed via the existing farmyard entrance.

1.2 The vast majority of the buildings are of modern construction, and lacked both potential roosting crevices and evidence of the presence of bats. These buildings were assessed as being of negligible to low suitability for roosting bats following a detailed inspection do not warrant further detailed survey.

1.3 One building – a former traditional Essex barn – was subject to extensive modification works during the 1940-50's, with most of the typical wooden crevice features generally found in timber framed barns now inaccessible for use by bats. However, a small number of such features remain, or have been inadvertently recreated, and showed evidence of having been used by small numbers of roosting bats (as indicated by droppings and feeding remains).

1.4 Seven separate roosting features were identified in the traditional barn (Building 6), with small numbers of droppings (5-15) associated with each. DNA analysis of droppings from six of the features confirmed the presence of common pipistrelle. Butterfly and yellow underwing moth remains, accompanied by small numbers of distinctive droppir confirmed the presence of brown long-eared bats.

1.5 Given the small size of the identified roosting features (capable of, and showing evidence of, supporting small numbers of roosting bats only) and the presence of feeding remains, the roosts can be categorised as follows:

Six day / night, non-breeding roosts for small numbers of common pipistrelle bats

One feeding perch for small numbers of brown long-eared bats

1.6 Further dusk / dawn surveys of the buildings are, in this case, unlikely to provide significant additional information regarding the presence / absence of bats, and the impacts upon roosting bats can be assessed with reasonable confidence based on the information gathered to date. Mitigation features can also be specified with confidence given th restricted number and size of the identified roosting features.

1.7 Further dusk / dawn surveys will however be necessary to inform a mitigation licence application, which will be required prior to the commencement of works to this building. The proposals provide the opportunity for phased development of the site, allowing for construction of new bungalows and provision of replacement roosting features prior to the demolition of Building 6. Offsite buildings also provide suitable locations for bat boxes.

1.8 No evidence of the presence of barn owls was recorded in any of the buildings.

1.9 A small number of old bird nests were noted in some of the buildings, including rock dove, wood pigeon, wren and swallow. Where possible building works should commence during October to February inclusive to avoid the bird nesting season; but if this is not possible, immediately prior to commencement of works a check for nesting birds should undertaken by a suitably experienced ecologist. Any active nests will need to be left in situ until the young have left the nest.

1.10 The site is not deemed suitable for any other protected species.

1.11 The mitigation and enhancement measures detailed in section 6.0 can be secured via a planning condition, and should result in an overall enhancement of the site for nesting house sparrow, common suburban bird species and roosting bats.

2.0 INTRODUCTION

Instruction

2.1 This report has been prepared by Liz Lord following instruction by Mr P Le Grys of Stanfords to carry out an ecological appraisal of the farmyard and buildings at Woodlands, 217 Harwich Road, Little Clacton, Essex CO16 9PX.

Site Proposals

2.2 Planning permission is being sought to demolish the existing buildings and construct five bungalows with gardens and parking areas, accessed via the existing farmyard entrance.

Site Description

2.3 The site lies between the villages of Little Clacton and Thorpe le Soken, approximately 3km to the north of Clacton, Essex. The site comprises approximately half of the existing farmyard at Woodlands, including small open areas of hard standing and mown amenity grassland to the south and west of the buildings.

2.4 The farmyard is surrounded to the north, east and west by large, open arable fields, and to the south by an existing house and garden. The wider landscape is dominated by arable fields of varying size with associated hedgerows and tree lines of varying quality, interspersed with village settlements. Scattered woodland cover is present, including the large Weeleyhall Wood 1km to the west of the site. A location plan is provided below.

Fig 1A: Site location, with site location indicated beneath red arrow. Aerial photograph sourced from Google Earth Pro

Fig 1B: Aerial plan, with approximate site boundary outlined in red. Aerial photograph sourced from Google Earth Pro

Objectives

2.5 This report has been written broadly in accordance with the r
produced by the Chartered Institute of Ecology and Environmental Management (CIEEM) (CIEEM 2018, 2017a, 2017b). In accordance with the client brief, this survey and report aims to:

2.5.1 Identify and describe all potentially significant ecological effects on protected a notable species / sites associated with the proposals;

2.5.2 Set out the mitigation measures required to ensure compliance with nature conservation legislation and address any potentially significant ecological effects;

2.5.3 Identify how mitigation measures will / could be secured;

2.5.4 Provide an assessment of the significance of any residual effects;

2.5.5 Identify appropriate enhancement measures; and

2.5.6 Where deemed necessary, set out the requirements for post construction monitoring.

2.6 This survey and report is intended to inform, as necessary, the layout and design of the proposals, future landscape design and management on site, and where required the methodology and timing of development works.

Timescales

2.7 The total works period is expected to be around 24-36 months following the granting of relevant permissions.

2.8 This report is valid for a period of 18 months from the date of survey. Beyond this time, changes to the vegetation and buildings and / or use of the buildings may have occurred which could require re-assessment and potentially further survey to re-determine the presence / likely absence of protected species.

Relevant Documents

2.9 The site assessment was based upon drawing number LWL-07 Rev A dated February 2022 by Zoe Manning Drawing Services Ltd, as shown in Appendix 1. Any minor amendments to the overall building scheme are unlikely to alter the conclusions and recommendations of this report.

2.10 Recommendations included within this report are the professional opinion of an experienced ecologist based on the client's proposals for the site, the site surveys, the results of the desk study, and features present in the surrounding environment.

3.0 METHODOLOGY

Desk Study

3.1 The Multi Agency Geographic Information for the Countryside consulted on 5th October 2022 to determine the presence of any nationally and internationally designated sites such as Sites of Special Scientific Interest (SSSI), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites within influencing distance of the proposals.

3.2 The MAGIC website was also used to search for any records of European Protected Species Mitigation (EPSM) licences that have been approved by Natural England within a 5km radius of the application site since late 2008. The website was checked for any data from Natural England's great crested newt eDNA Habitat Suitability Index pond surveys for District Level Licensing 2017-2019 (last updated October 2020); and data from Natural England great crested newt Class Survey Licence returns within a 5km radius of the site (last updated May 2020).

3.3 A records search with EECOS or Essex Field Club was not undertaken due to the small scale of the proposals, the limited potential for protected species to be present on site, the author's existing awareness of site-relevant protected species presence in the local area, and the common and widespread nature of many of those species which may potentially be present. A further detailed records search is unlikely to affect the conclusions an recommendations of the report, however a search for bat records will be undertaken as part of a mitigation licence application.

3.4 The Essex Wildlife Trust Biological Records Centre Local Wildlife Sites Finder page was consulted on 10th October 2022 to determine the presence of Local Wildlife Sites within potential influencing distance of the proposals.

Site Survey

3.5 A daytime building inspection and site survey was carried out on 22nd September 2022.

3.6 The survey was based upon the standard methodology for Extended Phase 1 Habitat Surveys (JNCC 2010), with habitats classified according to the abundance of plant species present. Any evidence of invasive species such as Japanese knotweed was noted.

3.7 The survey also included an assessment of the site's potential to support any legally protected species; or Species and Habitats of Principal Importance, as identified by Section 41 of the Natural Environment and Rural Communities Act 2006. Where best practice guidelines exist, these have been used to assess the likelihood that individual species will be present, for example Bat Surveys: Good Practice Guidelines (Collins, J. 2016) and Habitat Suitability Index for Great Crested Newt (Oldham *et al*, 2000).

3.8 The survey area was limited to the buildings and immediately surrounding land as highlighted in Figure 1B and Appendix 1, plus land within the potential Zone of Influence.

3.9 Using criteria provided in best practice guidelines, habitats have been assessed for their potential to support protected species; notably bats, barn owls *Tyto alba,* badgers *Meles meles*; great crested newts *Triturus cristatus*; reptiles, water voles *Arvicola amphibius*; dormice *Muscardinus avellanarius* and otters *Lutra lutra*.

3.10 Where methodologies, classification or recommendations deviate from best practice guidelines, this report provides ecological justification for such changes.

Building Inspection

3.11 The buildings were surveyed and assessed in accordance with criteria outlined in Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, J. 2016).

3.12 The internal and external inspections of the buildings were carried out using a powerful torch, a ladder, a pair of Nikon 12 x 50 binoculars and an Easyview 8mm digital recording endoscope to inspect gaps and crevices for bats and evidence of bats.

3.13 Floors, walls and storage surfaces beneath all possible access points or crevices which may be used for roosting were checked for droppings, scratching and urine or fur staining, and particular attention was paid to the areas beneath tie beams from which bats may hang or rest.

3.14 The ridge boards, tie beams, barge boards and door / window frames of the buildings were specifically checked for scratching and staining, as well as roosting bats. Particu attention was paid to any gaps in and around timbers, roofs and walls; and the walls, ledges and ground area below.

3.15 Floor surfaces generally comprised relatively clean concrete or bare ground, and a variety of stored items. At the time of the building inspection the floors did not appear to have been recently swept, and bat dropping samples were collected in sterile tubes from numerous locations in one of the buildings.

Surveyors

3.16 The survey was carried out by Liz Lord. Liz has been a professional ecologist since 2005, and holds current Natural England licences to survey bats - Class Licence Reg. No. 2015-13305-CLS-CLS; great crested newts - Class Licence Reg. No. 2020-44816-CLS-CLS; and barn owls - Class Licence Reg. No. CL29/00160. Liz is a full member of CIEEM.

3.17 The weather at the time of the building inspection was sunny with a moderate breeze (BF3-4) and a temperature of 17˚C.

DNA Dropping Analysis

3.18 Dropping samples were collected using sterile gloves, with each individual sample put into sterile tubes. DNA analysis was undertaken by SureScreen Scientifics, with the methodology and the full results of the analysis provided in Appendix 2.

3.19 The locations of the dropping samples within Building 6 are shown and labelled on Figure 2, below.

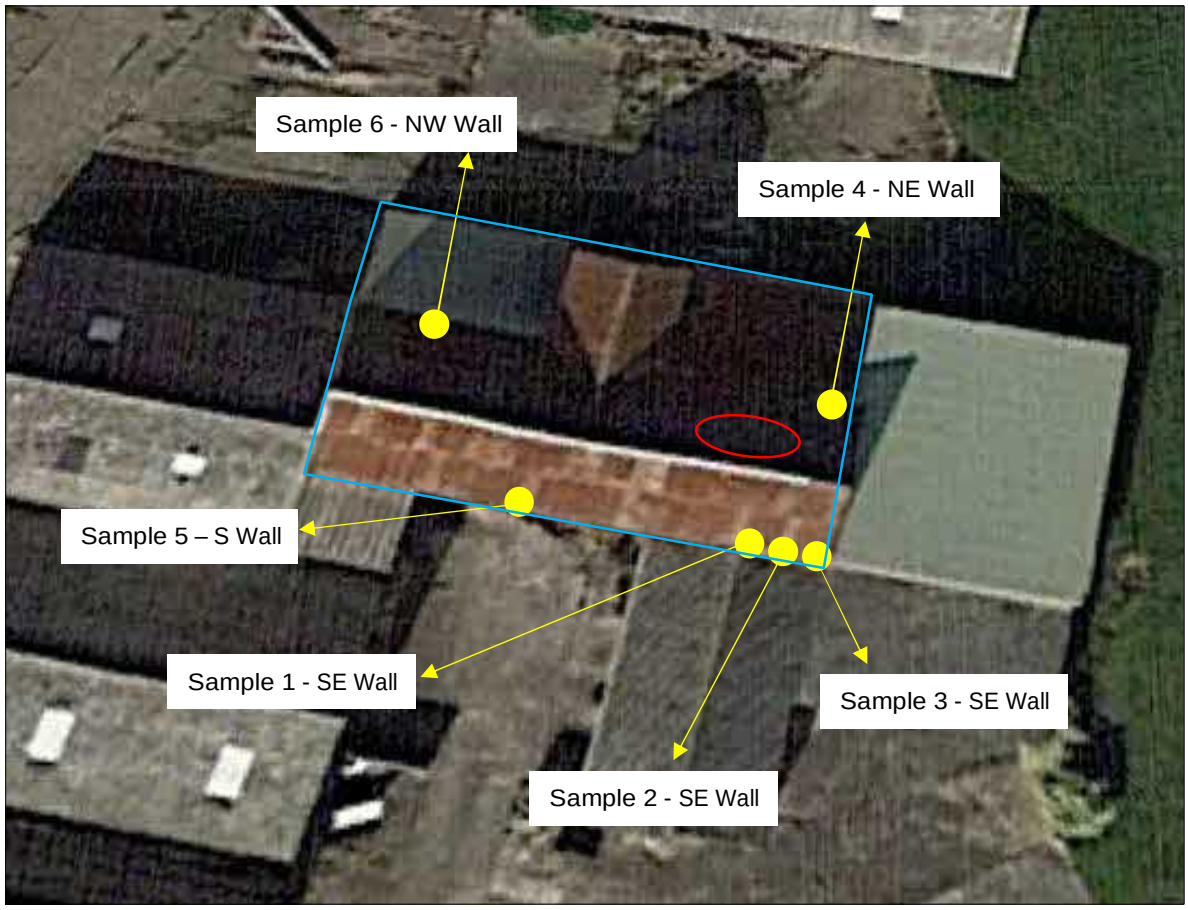


Fig 2: Building 6, outlined in blue, showing locations of six bat dropping samples. Refer to Ap 2 for the full results of the DNA dropping analysis. Red circle shows location of brown long-eared ba droppings and feeding remains

Zone of Influence

3.20 The potential impacts of a development are not always limited to the boundaries of the site concerned, such as where there are ecological or hydrological links beyond the site boundaries. In order for the proposed works to have an impact on habitats and species outside of the site boundaries, there needs to be a source of impact, a pathway and a receptor for that impact.

3.21 The Zone of Influence will vary for different habitats and species depending on th sensitivity to predicted impacts, the distribution and status of the relevant species, whether a species is mobile, migratory, and whether its presence and activity varies according to the seasons.

3.22 An assessment of the Zone of Influence has been made based on the site layout shown in Appendix 1, and where necessary recommendations to avoid any significant adverse impacts beyond the site boundaries have been provided in section 5.0.

Limitations

3.23 The conclusions in this report are based on the best information available during the reported period of survey.

3.24 Ecological surveys provide only a 'snapshot' of the site in time, and many species, such as bats and badgers, are capable of colonising a site in a very short space of time. Lack of evidence of a species at the time of survey can only allow conclusion of the *likely* absence of this species, since no level of survey effort is capable of proving absence beyond doubt.

3.25 Whilst best efforts have been made to identify all water bodies within 250m of the site, it is not always possible to record all garden ponds using Ordnance Survey maps and aerial photography. Additional search effort with respect to garden ponds is likely to be disproportionate, as many garden ponds have limited suitability for great crested newts, and it is a common constraint associated with all Ecological Assessments.

Geographic Context

3.26 Where applicable, the importance of each ecological feature has been considered in a geographic context as follows:

International and European

National

Regional

Metropolitan, County, vice-county or other local authority-wide area

River Basin District

Estuarine system/Coastal cell

Local (further categorized into District, Borough or Parish)

Site

Assessment of Impacts and Effects

3.27 The following definitions are used for the terms 'impact' and 'effect' in accordance with CIEEM (2018) guidelines:

Impact – actions resulting in changes to an ecological feature

Effect – outcome to an ecological feature from an impact

3.28 The importance of any ecological feature has been determined via the site surveys detailed in this report. Note that species and habitats afforded legal protection are, by default, always considered within the EcIA assessment process to be 'important'.

3.29 Potential impacts of the proposals on any such features have been assessed based on the client proposals for the site, and following a review of all phases of the project. Impacts are assessed through consideration of the extent, magnitude, duration, reversibility, timing and frequency of works which may result in likely 'significant' impacts to any ecological features present. The route through which impacts may occur (direct, indirect, secondary or cumulative) has also been considered. Positive impacts are assessed as well as negative.

3.30 The results of the surveys have been used to identify any potentially significant impacts in the absence of any avoidance, mitigation or compensation measures. Any appropriate measures have then been proposed where necessary.

Characterisation of Ecological Impacts

3.31 When considering ecological impacts and effects, the following characteristics have been considered:

positive or negative
extent
magnitude
duration
frequency and timing
reversibility

3.32 Where various characteristics have not been specifically referred to in this report, they have been considered insignificant or irrelevant to that specific feature.

3.33 A 'significant effect' is defined within the current CIEEM guidelines (2018) as: "*an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local.*"

3.34 Where a significant effect is predicted, this requires assessment and reporting in order to provide the decision maker with sufficient information to determine the environmental consequences of a project. A significant effect can be either positive or negative, and its extent will determine the requirement of conditions, restrictions or monitoring works.

3.35 The current CIEEM guidelines (2018) also state that: *"After assessing the impacts of the proposal, all attempts should be made to avoid and mitigate ecological impacts. Once measures to avoid and mitigate ecological impacts have been finalised, assessment of the residual impacts should be undertaken to determine the significance of their effects on ecological features. Any residual impacts that will result in effects that are significant, and the proposed compensatory measures, will be the factors considered against ecological objectives (legislation and policy) in determining the outcome of the application."*

3.36 This report has taken into account the factors detailed above for each important ecological feature in the absence of mitigation. Recommendations have then been made with respect to avoidance / mitigation / compensation / enhancement as necessary, and an assessment of the residual impacts after such measures has been made.

Mitigation Hierarchy

3.37 In order to minimise the likelihood of any significant negative residual effects on environmental features, this assessment has followed the mitigation hierarchy (listed below in order of preference):

Avoidance – measures that avoid harm to ecological features, both spatially and temporally;

Mitigation – avoidance or minimisation of negative effects through appropriate timing of works, or the provision of mitigation measures within the scheme design which can be guaranteed by condition or similar;

Compensation – measures taken to offset residual effects which result in the loss of, or permanent damage to, ecological features despite mitigation;

Enhancement – measures to provide net benefits for biodiversity, either by improved management of existing features, or the provision of new features, and over and above that which is required to mitigate / compensate for an impact. Delivery should be secured via planning condition or similar.

Legislation and Policy

3.38 Specific reference has been made to the individual legal protection of the species detailed within this report, however additional information with respect to other relevant legislation and planning policy is provided in section 8.0.

3.39 The legislation of particular relevance within the body of this report is the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). The former confers legal protection to 'European' Protected Species against both disturbance and harm, and extends to the full protection of their habitats. This legislation also provides legal protection for a number of internationally designated sites within the UK, and remains in place following Brexit.

3.40 The Wildlife and Countryside Act 1981 (as amended) is UK specific, and generally only provides protection against direct harm to individuals of a species.

4.0 RESULTS (*Baseline Conditions*)

Site Summary

4.1 The site comprises part of a large farmyard with a collection of relatively small agricultural buildings, generally dis-used, surrounded by concrete hardstanding and amenity grassland. Immediately beyond the farmyard are open arable fields.

Desk Study: Statutory Designated Sites

4.2 Natural England's MAGIC website indicates that there is one UK statutory designated site located within a 2km radius of the site boundaries – Weeleyhall Wood SSSI located 1km to the west of the site, and designated for it's diverse ancient woodland habitats.

4.3 There are a number of statutory designated sites of international importance located 4-6km from the site, including Essex Estuaries SAC, Colne Estuary (Mid Essex Coast Phase 2) SPA and Ramsar site, and Hamford Water SPA, Ramsar and SAC.

4.4 The application site sits within the Impact Risk Zone (IRZ) for the nearby designated sites. The IRZ search tool identified '*Residential development of 100 units or more*' and '*Any residential development of 100 or more houses outside existing settlements / urban areas*' as requiring consultation with Natural England. This is not applicable to the proposals, which comprise five residential dwellings.

4.5 Due to the internationally designated sites being well within commutable distance of the new development, and likely to be visited by new residents, the search tool also highlighted that '*For new residential development in this area, consideration is required in terms of the emerging Essex Coast Recreational Disturbance Avoidance and Mitigation Strategy (RAMS)'.*

Desk Study: Non-Statutory Designated Sites

4.6 There are two County Wildlife Sites located within 1km of the site – Te98 Upper Holland Brook located 630m to the north east of the site, designated for its variety of habitats along the floodplain of Holland Brook; and Te93 Lower Botany Farm, designated for its species rich grassland, and located 475m west of the site.

Habitats

Invasive species

4.7 No aerial evidence of Japanese knotweed *Fallopia japonica* was recorded within the site or the immediately adjacent areas at the time of survey.

Water bodies

4.8 No water bodies are present on site, and Ordnance Survey maps at 1:10,000 scale did not highlight the presence of any water bodies within 250m of the site boundaries.

Amenity grassland

4.9 To the south and west of the buildings are two small areas of regularly mown amenity grassland. Species present include ryegrass *Lolium sp.* and smooth meadow grass *Poa pratensis* with regular scattered ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum officinale*, yarrow *Achillea millefolium*, doves-foot cranes bill *Geranium molle* and cats ear *Hypochaeris radicata*.

Ruderal vegetation

4.10 Whilst the farmyard is generally very tidy and well kept, occasional cracks and crevices support grasses, dandelion, bristly oxtongue *Helminthotheca echioides* and Canadian fleabane *Erigeron canadensis*.

Buildings

4.11 Figure 3, below, illustrates the building layout. The buildings are described and pictured below, including references to bat roosting potential or evidence of roosting bats where relevant. Unless otherwise stated, no evidence of the presence of bats was recorded in the buildings, and all buildings were constructed and / or walls infilled with brick in the 1940's-50's (Leiper, B. pers. comm).

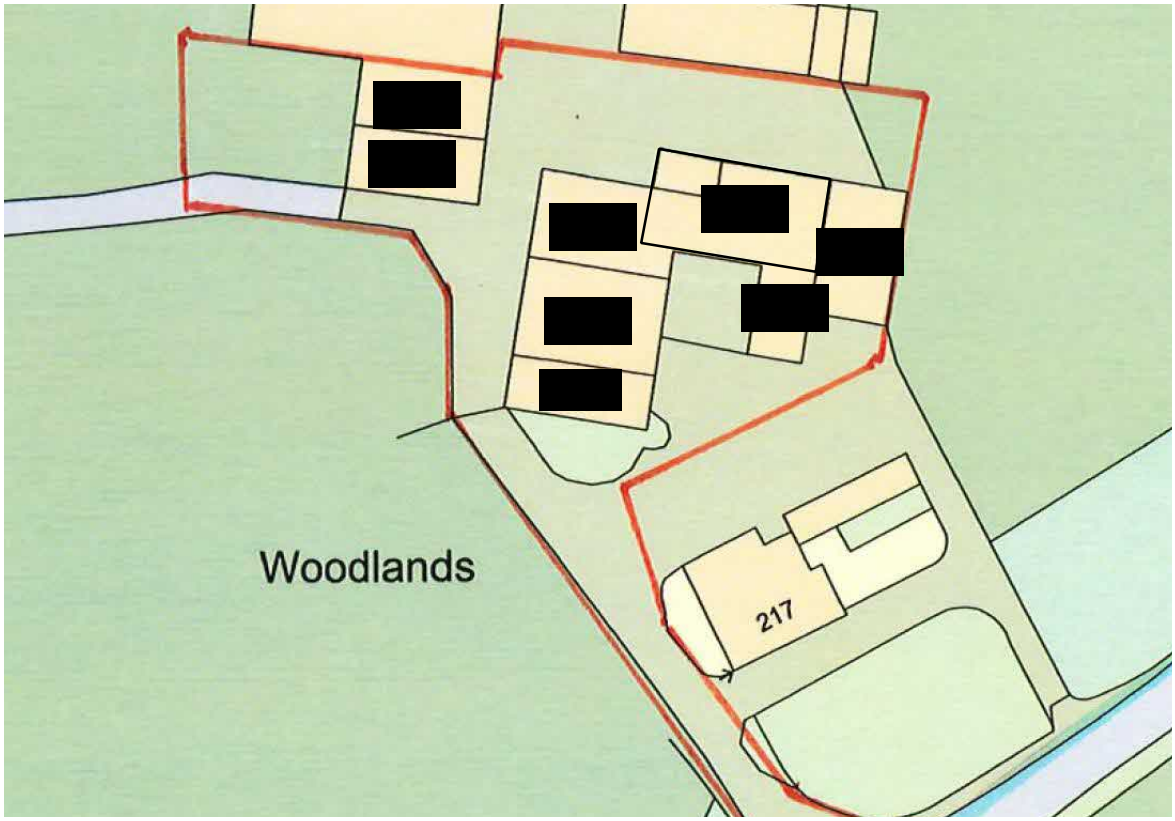


Fig 3: Building layout, taken from the red line boundary plan provided by Stanfords

Hardstanding

4.12 Beyond the small areas of amenity grassland, the remainder of the land between th buildings consists of concrete hardstanding, in good overall condition.

Building 1

4.13 A modern lean-to building with a wood and metal frame covered with corrugated tin. The brick wall it adjoins to the south is in good condition, as is a small section of rendered brickwork in the western wall.

Photo 1: Eastern facade of B1, adjoining B2

Photo 2: Internal view of B1

Building 2

4.14 A brick, two storey barn in good overall condition. Most of the metal window frames are missing glass and a doorway in the southern façade is permanently open. A metal roof frame supports unlined corrugated fibreboards. No ridge beam is present. Gaps at the ends of the corrugated sheeting are filled with cement. At ground level there are c.10mm gaps between wooden floor supports and the rear brick wall, but were full of dirt and debris at the time of inspection, not indicative of recent use by bats.

Photo 3: Building 2, southern facade

Photo 4: Internal view of B2, upper floor, showing cemented eaves

Building 3

4.15 The former dairy and workshop, now dis-used. A single storey brick building with five large metal framed windows along the southern facade creating light internal conditions. A metal roller door sits in the western gable end. Modern wooden rafters and purlins indicate the past presence of roof tiles, however the roof is covered with a mix of corrugated onduline (or similar) and corrugated tin. Part of the ridge covering is missing in places, and the western half of the roof shows extensive rot and frequent holes. Patchy, rotting felt sits beneath small parts of the north eastern roof where a small area of slate tiles appear to remain. The remains of a partially vaulted Styrofoam ceiling are also present here.

Photo 5: Southern facade of B3

Photo 6: Internal view of B3

Building 4

4.16 A single storey brick building, formerly used to house cattle, pigs and chickens. Brick walls are in good condition, and a metal frame supports unlined corrugated fibreboard roof sheets. Three large skylights create a light internal environment. No ridge beam is present. At eave height is a central wooden walkway running the length of the building. Significant areas of damp are present on the northern wall where it adjoins Building 5. Pigeon eggs shells were recorded in the building, as well as an old swallow nest with no signs of recent use, and a single old bat dropping (dull and crumbly).

Photo 7: Western view of B4, with B5 to north

Photo 8: Internal view of B4

Building 5

4.17 Another single storey brick building, with metal sliding doors. In current use as a workshop. Parts of the internal brick walls are rendered, parts are lined internally with breezeblocks, with no resultant cavity; all are in good condition. Four skylights create a light interna environment, and the corrugated fibreboard roof is supported by metal frame. Gaps at eave height beneath the corrugated sheets are filled with cement.

Photo 9: Western façade of B5

Photo 10: Internal view of B5 showing filled ga around eaves

Building 6

4.18 A two storey barn with a northern midstrey and single storey lean-to sections on either side of the northern midstrey. The pitched roof is covered in unlined corrugated tin, and there is no ridge beam present. The wall plate and roof beams appear to be the only remaining part of the original timber frame, with the remainder of the vertical wooden wall beams appearing to have been replaced by brick supporting columns, with the gaps between infilled with brick. Metal window frames are present, with no associated gaps which are not filled with very dense cobwebs and large spiders.

4.19 Large, modern wooden beams and a central metal girder and posts support the upper floor, with the wooden beam ends well cemented into the brick walls. The ground floor consisted of concrete and was generally clean, whilst the upper wooden floor had a light covering of pigeon droppings. The remains of <10 butterflies and moths and around 10 brown long-eared bat droppings were recorded on the floor at ground level.

4.20 Where the wooden floorboards of the first floor are supported by a brick wall ledge, a variable horizontal gap of around 10-20mm exists between the wall and the floorboards, extending to a depth of around 100mm. These gaps are concentrated at the eastern end of the barn, on both the northern and southern walls. Bat droppings were recorded beneath five of these gaps – three gaps in the south eastern wall, and two in the north eastern wall. Samples were taken for DNA analysis – see Figures 2 and 4.

4.21 At first floor level, <10 bat droppings were recorded beneath a gap between the wall plate beam and brick column on which the beam rests, and beneath a warped join in the wall plate beam (see Figures 2 and 4). A further two potential roosting crevices – gaps in adjoining wooden wall plate beams – were noted close to the centre of the northern wall, but with no associated bat droppings. Both crevices could be fully inspected.

4.22 Externally at eave height on the southern façade, the original wooden wall plate beam protrudes out over the brick walls, with a number of gaps in the underside of the wall plate which would have originally held vertical wooden beams. These small open cavities have low potential to be used by roosting bats, and any bat would be easily seen from ground level with a torch. No droppings or evidence of recent bat presence was recorded on the light coloured walls beneath, despite the recent lack of rainfall and a protective ro overhang immediately above.

4.23 The two gable end apexes of the building support original weatherboarding, with large sections missing in places. A large metal window frame fills much of the eastern gable end apex.

Photo 11: Southern gable end of B7, with tin roo of B6 immediately behind

Photo 12: North eastern facades of B6, wi adjoining to the east

Photo 13: Internal view of B6, ground floor

Photo 14: Internal view of B6, upper floor. Brickwork to eave height, and above eave heigh at the gable ends. Wooden wall plate rest brick walls

Building 7

4.24 A single storey brick building with metal sliding doors and a corrugated fibreboard roof supported by a metal frame. Brick walls are in good condition. The roof has been internally insulated with a sprayed foam.

Photo 15: Western façade of B7, with B6 to north

Photo 16: Internal view of B7, showing foam line roof

Building 8

4.25 A single storey modern lean to, built of partially rendered brickwork with an unlir corrugated metal sheet roof supported by modern, closely fitting wooden beams. A sliding metal door is present on the northern wall.

Photo 17: North western facades of B8, with B6 background

Photo 18: Internal view of B8

Animals

Bats

4.26 The desk study identified one bat EPSM licence within 5km of the site, at 3km to the south for a breeding roost of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *P. pygmaeus*

4.27 The author is also aware of the presence of a common pipistrelle maternity roost 1.8km to the north of the site, a brown long-eared bat *Plecotus auritus* maternity roost c.4km the north east of the site, and records of foraging / commuting nathusius pipistrelle *P. nathusii,* daubenton's *Myotis daubentonii*, natterer's *M. nattereri,* and noctule bat *Nyctalus noctula* within 5km of the site.

Bats - roosting

4.28 Six of the eight buildings were assessed as being of negligible suitability for roosting bats due to a lack of potential roosting features. B3 was assessed as being of low suitability for bats, with small crevices between end tiles and the brick wall beneath. All crevices were accessible with a torch and endoscope, and none were found to support any roosting bats or evidence of roosting bats. Due to the full accessibility of the roost features, this inspection serves as the equivalent of a single dusk emergence survey.

4.29 The eighth building – B6 – was assessed as being of moderate suitability for roosting bats i.e. with potential to support small numbers of non-breeding bats. Six confirmed common pipistrelle roosting features were recorded in B6, as well as one brown long-eared bat feeding perch.

4.30 The building inspection results are summarised in Figure 4, below, and Table 1, overleaf.

Building Inspection Results (PRF = Potential Roost Feature)

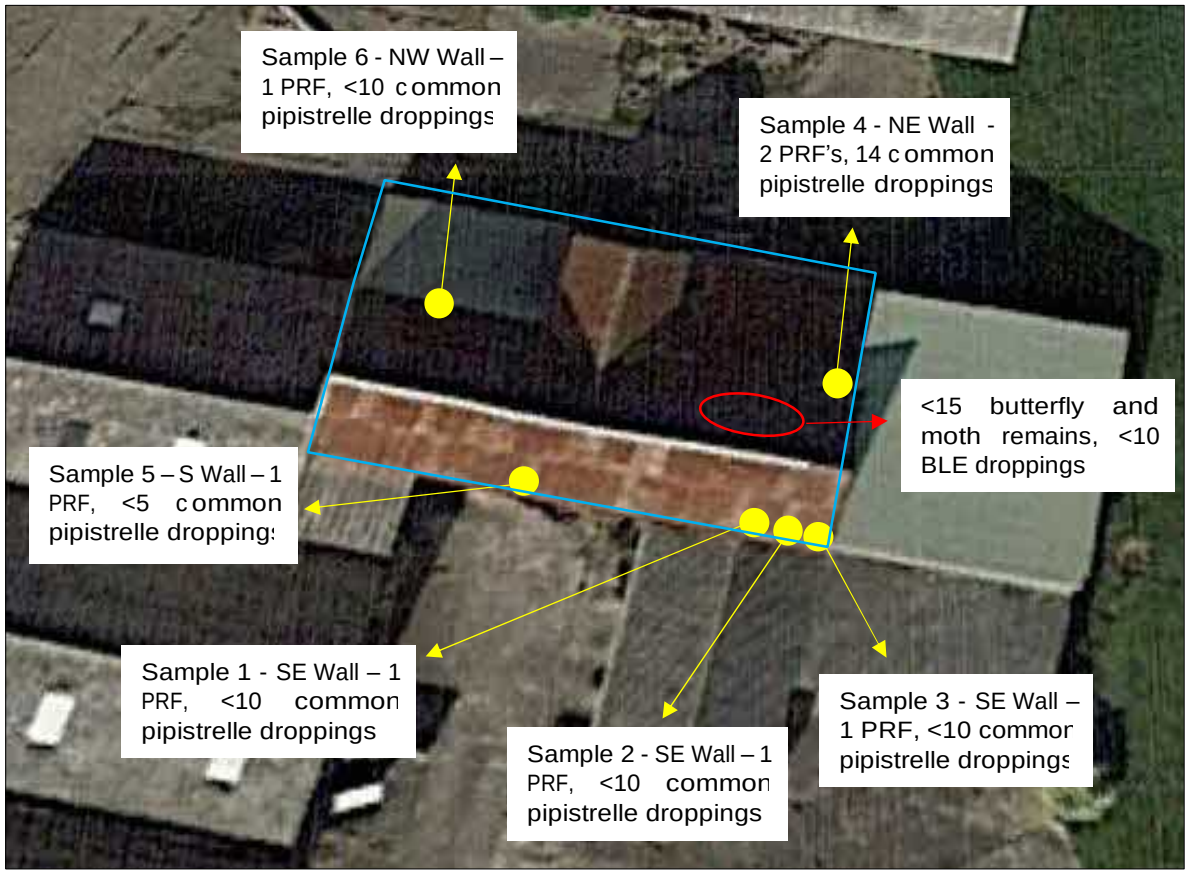


Fig 4: Building 6, outlined in blue, showing locations of six bat dropping samples with species results, number of potential roost features (PRF's) and number of droppings recorded

Left: location of confirmed features in north west corne the barn (Sample 6 – NW Wall) where 8 common pipistrelle droppings were recorded beneath a clean crevice between the brick column wooden wall plate

Above: location of confirmed common pipist roosting crevice on the southern wall, in a gap i two adjoining wall plate beam sections (Sam – S Wall), as indicated by red arrow

Left: close up of gap between wall plate sect and between wall plate and brick wall. < common pipistrelle droppings recorded and floor beneath

Above: location of three confirmed comm
pipistrelle roosting crevices in gaps betwee
floor boards and the supporting wall ben
(Samples 1, 2 & 3 – SE Wall), as indicated
red arrows

Left: close up of gap between brick wall an
floor boards, with dropping on wall bene

Below: close-up of location of cont
roosting crevices (Samples 1, 2 & 3 – SE Wall),
as indicated by red arrows and labels

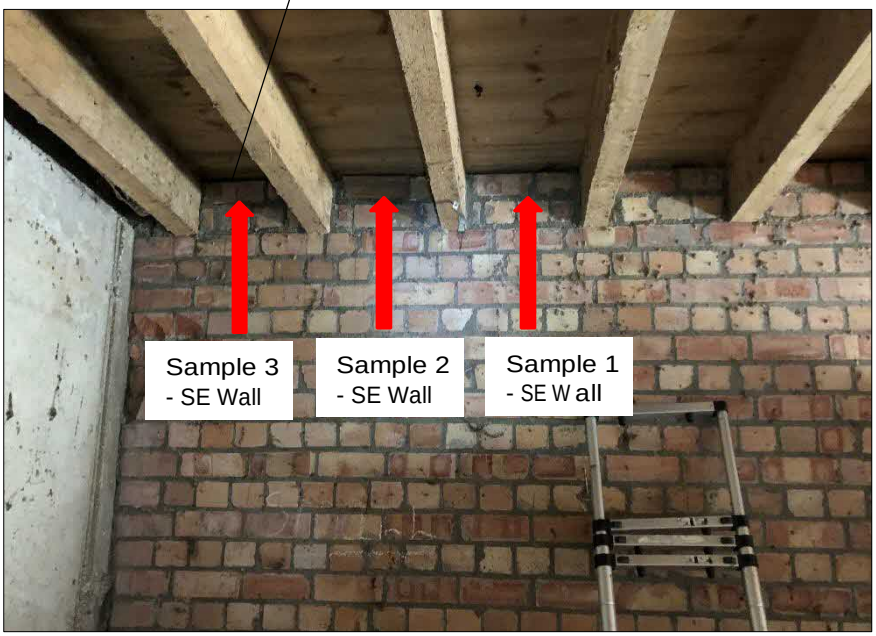


Table 1: Bat Building Assessment results (PRF's = Potential Roost Features)

Building	Suitability	Notes (inc. evidence of bats where present)
B1	Negligible	No PRF's
B2	Negligible	No PRF's / PRF's on ground floor filled with dirt and debris
B3	Low	PRF's limited to gaps beneath tiles overlapping brick wall at eastern end c building. Fully accessible for inspection; inspected 22nd September 2022, no bats or indication of recent bat presence
B4	Negligible	No PRF's
B5	Negligible	No PRF's
B6	Moderate	Eight PRF's noted, suitable for small numbers of non-breeding bats Droppings recorded and sampled from six PRF's – see Fig. 4. PRF's limited to those shown above. <10 brown long-eared bat droppings and feedi remains recorded at eastern end of ground floor
B7	Negligible	No PRF's
B8	Negligible	No PRF's

4.31 None of the evidence collected during the building inspection was indicative of the identified crevices being used by more than small numbers of bats – there was no staining from urine, staining / rubbing from fur, no dead bats, and not all of the identified crevice spaces between the floor boards and brick wall were clear of dust and debris. The walls and floor did not appear to have been recently disturbed or swept. The evidence gathered is strongly indicative of small numbers of bats using Building 6 to roost.

Bats – commuting / foraging

4.32 The proposed development site provides negligible potential bat foraging and commuting habitat, and is not located within close proximity to any offsite areas of such habitat.

Invertebrates

4.33 The site is considered likely to support common and widespread invertebrate species typical of the habitats present.

Amphibians

4.34 The MAGIC search highlighted three class licence returns and two EPSM licence records for great crested newt (GCN) within 5km of the site, to the north east, east and west. The closest record was a class licence return located 1.8km to the north east of the site, from 2017.

4.35 Due to a lack of water bodies within 250m of the site, and the very low quality potential terrestrial newt habitat present onsite, GCN are very unlikely to be present on site or adversely affected by the proposals.

Birds

4.36 No evidence of the presence of barn owls was recorded on site.

4.37 The buildings provide opportunities for common nesting birds, with a small number of old wren *Troglodytes troglodytes*, recent rock dove *Columba livia*, pigeon *Columba palumbus* and old swallow *Hirundo rustica* nests recorded in some of the buildings.

Reptiles

4.38 The site does not provide any suitable habitat for reptiles, and is not connected to any areas of potential offsite reptile habitat.

Badger

4.39 Badgers are a common and widespread species, not of conservation concern.

4.40 No evidence of badger was recorded on or within 30m of the site. No setts, footprints, hairs, latrines, snuffle holes or scratching indicative of the presence of badgers was recorded.

Otter

4.41 There are no waterbodies on, adjacent or connected to the site which have potential to support otters.

Water vole

4.42 There are no waterbodies on, adjacent or connected to the site which have potential to support water voles.

Dormice

4.43 The site does not provide any habitats suitable for dormice, however the species is known to be present in Weeleyhall Wood, 1km to the west of the site.

Other Legally Protected Species

4.44 Due to a lack of suitable habitats the site is not considered likely to support any other legally protected species.

Species of Principal Importance

4.45 The buildings provide some potential nesting opportunities for house sparrow *Passer domesticus* and starling *Sturnus vulgaris*, however neither species were recorded on site at the time of survey. The site contains very little other habitat suitable to support Species of Principal Importance in England (SPIE).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Designated Sites

5.1 The proposals are not considered to be detrimental to any CWS. No further survey or mitigation is recommended.

5.2 The proposals are very unlikely to have any direct adverse impact upon nearby national a international statutory designated sites. Whilst Weeleyhall Wood SSSI is located 1km from the site, it is not directly accessible on foot from the site – access to the wood follows c.2km of footpaths, equating to a 4-5km circular route; and there are no car parks allowing direct access to the wood.

5.3 There is potential for some cumulative indirect effects upon the internationally designated Essex Estuaries SAC, Colne Estuary (Mid Essex Coast Phase 2) SPA and Ramsar site, and Hamford Water SPA, Ramsar and SAC associated with increased recreational use by visitors. At less than 5-10km away, these sites are located well within commutable distance of the new residences, with numerous parking opportunities for all of these sites.

5.4 All internationally designated sites are fully protected by the Conservation of Habitats ar Species Regulations 2017 (as amended). Any new development must avoid having a significant adverse effect on the ecological features for which an SPA/SAC/Ramsar site was designated. Any such effect must be considered in combination with potential effects from other developments within influencing distance of the designated site. Due to the local topography, small scale of the development, surrounding habitats and distance from the relevant designated sites, when considered in isolation this development proposal is ve unlikely to have a significant adverse effect upon any such site within the region. It is however, likely to contribute to cumulative impacts associated with increased visitor pressure.

5.5 A financial contribution to the emerging Essex RAMS is therefore required in order to ensure that there will be 'no likely significant effect' on any of these sites. For residential schemes, a per house tariff has been adopted. Payment should be secured via the necessary means (Section 106 Agreement, Unilateral Undertaking etc), and should serve as an adequate mitigat measure.

5.6 The RAMS will work towards a range of locally appropriate and effective mitigation measures to ensure that increased visitor numbers will not have an adverse impact upon any European designated site within the immediate region.

Invertebrates

5.7 Potential effects negligible.

5.8 Mitigation measures: none.

5.9 Residual effects: negligible.

Amphibians

5.10 Great crested newts (GCNs) and their habitats are fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and by the Wildlife and Countryside Act 1981 (as amended).

5.11 Potential effects: negligible.

5.12 Mitigation measures: none required.

5.13 Residual effects: negligible.

Birds

5.14 Breeding birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended).

5.15 Potential effects: most of the buildings provide confirmed nesting habitat for common bird species. The disturbance and destruction of an active nest could have a negative effect on some bird species at the site level. There will negligible loss of foraging habitat.

5.16 Mitigation measures: ideally building works would commence during October to February inclusive to avoid the bird nesting season. If this is not possible, immediately prior to commencement of works a check for nesting birds should be undertaken by a suitably experienced ecologist. Any active nests will need to be left in situ until the young have left the nest.

5.17 Whilst it is acknowledged that the site has in the past provided nesting habitat for swallows, the old nests recorded did not appear to have been in recent use, with no associated droppings beneath, and with some having been taken over for use by wrens. Anecdotal evidence from villages and farms across Essex and Suffolk is that abundance of swallows is not currently limited by availability of nesting habitat, as indicated by the relatively recent absence of swallows from former nests on this site and others surveyed in 2020-21. The BTO (BTO, 2021) do not list availability of nesting sites as a potential cause of recent swallow population decline, and consider changes in weather and availability of insects throughout the year to be the most significant factors influencing swallow abundance. A relatively basic study by Robinson *et. al.* (2003) also found that there was no relationship between swallow numbers and availability of nest sites. The provision of replacement swallow nesting habitat is therefore not recommended in this instance, and the restoration of WB1 or creation of additional hedges and trees on site is likely to be of significantly greater benefit to the local swallow population.

5.18 Residual effects: following implementation of the mitigation and enhancement measures detailed in section 6.0 – the provision of a double nest box for house sparrows, and the planting of least ten flowering and fruiting trees and 100m of mixed native hedging – overall no significant adverse effect is predicted on bird species at any level and a minor enhancement for house sparrow, and common suburban birds species may result.

Bats

5.19 All species of bat are protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and by the Wildlife and Countryside Act 1981 (as amended). In summary, this makes it an offence to harm or disturb a bat; damage or destroy a roost; and obstruct access to a roost (whether or not bats are present at the time).

5.20 Potential effects on roosting bats: small numbers of non-breeding common pipistrelle (six day / night roosts) and brown long-eared bat (one feeding perch) are using the main barn (Building 6) to roost. Roosts are on the northern and southern walls, between wooden beams and adjacent brickwork, at both ground and first floor levels. The feeding perch is at ground floor level.

5.21 In the absence of avoidance measures and precautionary methods of working, the proposals could result in disturbance, injury or death to roosting bats in Building 6. A major adverse impacted is predicted for common pipistrelle and brown long-eared bats at the site level, and a minor impact at a local level.

Table 2: Works recommendations with respect to bats

Building	Bat roost status	Survey / working recommendations
B1	Likely absent	No further works
B2	Likely absent	**Pre-work checks**. As a precaution, gaps between the wooden supports and the rear brick walls should be inspected for bats by a ecologist with a torch immediately prior to commencement of works. In the event of bat presence, all works must cease and further
B3	Likely absent	**Pre-work checks**. As a precaution, gaps between tiles and the east end brick wall should be inspected by an ecologist immediately commencement of works. Materials across the eastern northern roof aspect should also be removed by hand and with In the event of bat presence, all works must cease and an e contacted for further advice
B4-B5	Likely absent	No further works
B6	Roosts confirmed	**Small non-breeding roost of common pipistrelle & a feeding perch brown long-eared bat present.** Mitigation licence required pr commencement of works. Exclusion devices to be fitted to wall crevices and removal of roof and wall materials carried out by hand, u ecologist supervision
B7-B8	Likely absent	No further works

5.22 Mitigation measures for roosting bats: works to Building 6 must be carried out under an EPSM licence. The licence can only be applied for once planning permission has been granted, and must be informed by two or three dusk / dawn surveys carried out between May and September (at least two surveys May – August). The exact timing of work and nature of the mitigation features will be agreed directly with Natural England and as such will supersede all details provided in this report.

5.23 The following features (or similar, as agreed with Natural England) will provide replacement crevice roosting opportunities, and will be positioned immediately beneath the eaves of the new dwellings:

Total two bat boxes built in to the southern wall of Plot 2 and southern wall of Plot 3;

One bat box built in to the northern wall of Plot 2 or Plot 4;

Two external bat boxes – Eco-Kent or Beaumaris boxes – on nearby buildings where necessary during the works to ensure that bats are never left without a roost.

5.24 Further information on the features detailed above is provided in Appendix 3. The exact number and location of all such features will be agreed with Natural England as part of a mitigation licence application, however all will be at least 2.5m high with a clear 1-2m drop beneath the roosting feature, facing in a variety of directions and away from all sources of artificial lighting.

5.25 As general best practice, works to Building 6 will avoid commencing during the hibernation season (around November to mid-March). Due to the presence of small numbers of non-breeding bats in Building 6 there will be no timing constraints to the commencement of works during the period mid-March to end of October.

5.26 Potential effects on commuting / foraging bats: in the absence of mitigation negligible impacts are predicted with respect to foraging and commuting bats as the site provides very little of such habitat. However, the effects on small numbers of commuting bats – particularly brown long-eared bats – could be greater where inappropriate lighting is installed on site.

5.27 Mitigation measures for commuting / foraging bats: external lighting features must avoid illuminating any mitigation features at night. Lighting within the new development should be minimal – ideally limited to small porch lights using warm white (<3000K) LED bulbs and located as close to the ground as possible. Any additional external lighting should be on short duration motion sensitive timers and use hoods, cowls, louvres and shields to direct light to the ground.

5.28 Residual effects: with the implementation of the above mitigation measures, no adverse effects are likely upon individual bats or local bat populations.

Reptiles

5.29 All Essex reptile species are protected against harm under the Wildlife and Countryside Act 1981 (as amended).

5.30 Potential effects: negligible.

5.31 Mitigation measures: none.

5.32 Residual effects: negligible.

Badger

5.33 Badgers and their setts are afforded protection under the Protection of Badgers Act 1992 (as amended). This legislation includes protection against damage to badger setts and against interference and disturbance of badgers whilst they are occupying a sett.

5.34 Potential effects: negligible. No evidence of badgers was found on site or immediately adjacent, and there is no indication that badgers are likely to colonise the site in the near future.

5.35 Mitigation measures: none.

5.36 Residual effects: negligible.

Otters

5.37 Otters and their habitats are fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and by the Wildlife and Countryside Act 1981 (as amended).

5.38 Potential effects: negligible.

5.39 Mitigation measures: none.

5.40 Residual effects: negligible.

Water Voles

5.41 Water voles and their habitats are fully protected by the Wildlife and Countryside Act 1981 (as amended).

5.42 Potential effects: negligible.

5.43 Mitigation measures: none.

5.44 Residual effects: negligible.

Dormice

5.45 Dormice and their habitats are fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and by the Wildlife and Countryside Act 1981 (as amended).

5.46 Potential effects: negligible.

5.47 Mitigation measures: none.

5.48 Residual effects: negligible.

Other Legally Protected or Notable Species

5.49 The proposed development is not anticipated to impact on any other legally protected species, therefore no mitigation measures are recommended.

5.50 Mitigation and enhancement measures will provide artificial nesting features suitable for house sparrow (a SPIE) and new hedge planting of value to wren, robin and SPIE including great crested newt, toad and hedgehog.

5.51 The measures detailed in section 6.0 can be secured via planning condition.

6.0 MITIGATION & ENHANCEMENT MEASURES

6.1 **1 no. double house sparrow box** will be built into the northern façade of Plot 4, or fixed to an offsite building located within the blue line boundary. The box will be located at a height of at least 2m, immediately beneath the eaves or at apex height, and face between north and east. The recommended box type is shown below; others must be agreed with an ecologist.

Woodstone Estella House Sparrow Box

Made of long lasting woodstone; can be built in or fixed externally

Available from CJ Wildlife

Dimensions 29 x 16 x 21cm, weight 6kg

6.2 **3 no. bat boxes** will be built in to the new buildings – one in the southern wall of Plot 2, one in the southern wall of Plot 3, and one in the northern wall of Plot 2 or 4. The boxes will be located at eave height, as far as possible from windows, away from external lighting features, and with a 1-2m clear drop beneath the box entrance i.e. clear of all wires etc. The recommended box types are shown below; others must be agreed with an ecologist.

[redacted]

[redacted]

[redacted]

6.3 **2 no. bat boxes** will be fixed externally to existing offsite buildings within the blue line boundary to provide alternative roosting opportunities for the duration of demolition and construction, and will be retained permanently as an enhancement for local bat populations. The boxes will face two different aspects, at heights of 3-6m. There will be a 1-2m clear drop beneath the box entrance i.e. clear of all wires etc. The recommended box types are shown below; others must be agreed with an ecologist.

Vivara Pro Beaumaris woodstone box midi – for installation on walls or tre

Eco-Kent bat box – for installatio on walls or trees

6.4 **At least 100m of mixed native hedging** will be planted along the site boundaries, and will consist of at least five native species, planted in double staggered rows and mulched with 75mm of woodchip. Recommended species include hawthorn *Crataegus monogyna,* blackthorn *Prunus spinosa,* hornbeam *Carpinus betulus,* holly *Ilex aquifolium,* field maple *Acer campestre,* hazel *Corylus avellana,* dog rose *Rosa canina* and guelder rose *Viburnum opulus.* Hedging could be set against garden fencing where preferred.

6.5 **At least 10 flowering and fruiting trees** will be planted on site, comprising of small growing species of recognised value to wildlife such as crab apple *Malus sylvestris*, rowan *Sorus aucuparia*, *Amelanchier sp.*, single flowering varieties of hawthorn *Crataegus monogyna*, and all varieties of domestic fruit trees.

7.0 REFERENCES

British Trust for Ornithology swallow webpages (2021) (accessed 12th October 2021) https://app.bto.org/birdtrends/species.jsp?year=2019&s=swall

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* Version 1.1. Chartered Institute for Ecology and Environmental Management, Winchester.

CIEEM (2017a) *Guidelines for Preliminary Ecological Appraisal, 2nd edition.* Chartered Institute for Ecology and Environmental Management, Winchester.

CIEEM (2017b) *Guidelines for Ecological Report Writing.* Chartered Institute for Ecology and Environmental Management, Winchester.

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

Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit*. Revised print, JNCC, Peterborough.

Miles et al. (2018) *Bats and Artificial Lighting in the UK*. Institution of Lighting Professionals and Bat Conservation Trust.

Mitchell-Jones, A.J (2004) *Bat Mitigation Guidelines*; English Nature, Peterborough.

Multi-agency Geographic Information for the Countryside (MAGIC) Interactive Map. Department for Environment, Food and Rural Affairs.

Oldham, R.S., Keeble ,J., Swan, M.J.S. & Jeffcote, M., (2000). *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus)*. Herpetological Journal, 10, pp. 143-155.

Robinson, R.A., Crick, H.Q.P & Peach W.J. (2003) *Population trends of Swallows Hirundo rustica breeding in Britain*. Bird Study 50:1-7. Doi: 10.1080/00063650309461283

8.0 LEGISLATION

The Conservation of Habitats and Species Regulations 2017 (as amended)

8.1 The Conservation of Habitats and Species Regulations 2017 (as amended) continue to provide safeguards for European Protected Sites and Species as listed in the Habitats Directive. As a result, the same provisions remain in place for European protected species, licensing requirements and protected areas after Brexit.

8.2 Species protected by the former European legislation includes great crested newt, all UK bat species, dormice and otter. A number of other plant and animal species are also included such as sand lizard, smooth snake and natterjack toad, however these additional species are rare, with restricted geographical ranges and specific habitat types.

8.3 Under The Conservation of Habitats and Species Regulations 2017 (as amended) it is an offence to:

Damage, destroy or obstruct access to an EPS breeding or resting place;

Deliberately capture, injure or kill an EPS (including their eggs);

Deliberately disturb an EPS, in particular any actions which may impair an animals ability to survive, breed or nurture their young; or their ability to hibernate or migrate; or which may significantly affect the local distribution or abundance of the species to which they belong.

8.4 The legislation applies to all stages of amphibian life cycles (eggs, larvae and adult), and to active bat roosts even when they are not occupied at that particular time of year.

8.5 Natural England can, under certain circumstances, grant a licence to permit actions which would otherwise be unlawful, subject to the species concerned being maintained at a Favourable Conservation Status and there being a true need for the proposed works to take place.

8.6 Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) are also afforded protection under the Conservation of Habitats and Species Regulations 2017 (as amended). Ramsar sites, which are designated under the Convention on Wetlands of International Importance (1971), are afforded the same level of protection as SPAs and SACs via national planning policy.

The Wildlife and Countryside Act 1981 (as amended)

8.7 The Wildlife and Countryside Act 1981 (as amended) provides varied leve a range of species including those already listed above. Water vole are one of the species not listed under the Conservation of Habitats and Species Regulations 2017 (as amended), but are afforded the highest level of protection under the Wildlife and Countryside Act 1981 (as amended).

8.8 It is an offence to intentionally kill, injure or take a water vole, to intentionally or recklessly damage or destroy a structure or place used for shelter and/or protection, to disturb a water vole whilst occupying a structure and/or place used for shelter and protection, or to obstruct access to any structure and/or place used for shelter or protection.

8.9 Other species, such as common lizard, slow worm, adder and grass snake, are afforded less protection. For these species it is an offence to intentionally or recklessly kill or injure animals.

8.10 All active bird nests, eggs and young are protected against intentional destruction. Schedule 1 listed birds e.g. barn owls, kingfishers, are further protected from intentional and reckless disturbance whilst breeding.

8.11 Schedule 9 of The Wildlife and Countryside Act lists plant species for which it is an offence for a person to plant, or otherwise cause to grow in the wild. This includes Japanese Knotweed which, under the Environment Protection Act 1990 (as amended) is classed as 'controlled waste'. If any parts of the plant including stems, leaves and rhizomes are taken off-site they must be disposed of safely at a landfill site licensed to deal with such contaminated waste.

8.12 Sites of Species Scientific Interest (SSSI) are afforded protection by the Wildlife ar Countryside Act 1981 (as amended).

The Protection of Badgers Act 1992 (as amended)

8.13 The Protection of Badgers Act (1992) makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so, and to intentionally or recklessly interfere with a sett.

The Protection of Mammals Act 1996 (as amended)

8.14 The Act protects all wild mammals against actions which have the intention of causing unnecessary suffering, including crushing and asphyxiation.

The Natural Environment and Rural Communities Act 2006 (as amended)

8.15 Under sections 40 and 41 of the Natural Environment and Rural Communities Act (NERC) 2006 local authorities have an obligation to have regard to the purpose of conserving biodiversity in carrying out their duties. The majority of UK legally protected species are listed under Section 41 the NERC Act.

8.16 Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act (2006) also requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity' in England (Species of Principal Importance in England – SPIE). The S41 list is used to guide decision-makers, including local and regional authorities, in implementing their duty under Section 40 of the act to have regard to the conservation of biodiversity in England when carrying out their normal functions.

Statutory Designated Sites

8.17 Under the National Parks and Access to the Countryside Act 1949 (as amended), statutory conservation agencies were able to establish National Nature Reserves (NNRs), witl provisions for these areas strengthened by the Wildlife and Countryside Act 1981 (as amended). They are managed to conserve their habitats or to provide special opportunities for scientific study of the habitats communities and species represented within them.

8.18 Local Nature Reserves (LNRs) can be declared by local authorities after consultation with the relevant statutory nature conservation agency under the National Parks and Access to the Countryside Act 1949 (as amended). LNRs are not subject to legal protection, but are afforded protection against damaging operations via byelaws, and against development via local planning policies.

Non-Statutory Designated Sites

8.19 Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINCs), Sites of Nature Conservation Importance (SNCIs) and County Wildlife Sites (CWS) are often designated by the local Wildlife Trust. They are not usually afforded ay legal protection, but are recognised in the planning system and given some protection through planning policy.

National Planning Policy Framework (NPPF)

8.20 The National Planning Policy Framework (2019) sets out the Government's planning policies for England and how these should be applied. The NPPF must be taken into account when preparing a Local Authority's development plan, and is also a material consideration in planning decisions.

8.21 As well as highlighting the importance of protecting ecologically valuable sites and habitats, the NPPF highlights the duty of local planning authorities (LPA's) to deliver net gains for biodiversity within the planning system. Planning policies and decisions should, as per Paragraph 170d, contribute to and enhance the natural and local environment by:

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'

8.22 To protect and enhance biodiversity, polices and plans should, as per Paragraph 174b:

b) 'promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursu opportunities for securing measurable net gains for biodiversity.'

8.23 When determining planning applications, LPA's should apply principles which avoid an adverse effect on natural environments and notable species:

d) 'if significant harm to biodiversity resulting from a development cannot be avoide (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;'

Appendix 1:

Proposed Layout

•Block plan 1:250•

indicative

Notes:-
MEASUREMENTS SHOWN ARE INDICATIVE ONLY - ALL DIMENSIONS TO BE CHECKED ON SITE PRIOR TO COMMENCING WORK AND ANY DISCREPANCY REPORTED

PLANNING DRAWING ONLY

Where the building project falls within the CDM regulations 2015 Z Manning Drawing Services Ltd are not designated as principal designer under the terms of the Act. The client is to appoint their own principal designer within the meaning of the Act.

RevNo	Revision note	Date
A	Minor amendment	04/2022

Drawing title
Block plan

Description
Proposed development

Address
Rear of Woodlands,
217 Harwich Road,
Little Clacton,
Essex, CO16 9PX

Client
Mr & Mrs Lelper

Drawn ZM	Sheet no.
Date 02/2022	Scale as indicated @ A2
Drawing No LWL-07	Revision A

Zoe Manning BSc.
Drawing Services Ltd.
143 Connaught Avenue
Frinton-on-Sea, Essex,
CO13 9AB
[redacted]

Appendix 2:

Bat Dropping DNA Analysis Results

SureScreen Scientifics

Folio No: E15605
Report No: 1
Purchase Order: 1780
Client: LIZ LORD
Contact: Liz Lord

TECHNICAL REPORT

ANALYSIS OF BAT DROPPINGS FOR SPECIES OF ORIGIN IDENTIFICATION

SUMMARY

The droppings of bats contain small amounts of DNA belonging to the organism from which they originated. By analysing droppings collected from a bat roost or colony for the presence of DNA, a robust identification of the species present can be made. Recent advancements in molecular methods including PCR (polymerase chain reaction) and DNA sequencing mean that 92% of bat species worldwide can be identified including all 17 UK resident bat species.

RESULTS

Date sample received at Laboratory: 29/09/2022
Date Reported: 06/10/2022
Matters Affecting Results: None

Lab Sample ID.	Site Name	O/S Reference	Genetic Sequence	Common Name	Result	Sequence Simliarity
B1372	SE wall 1 - Woodland Farm	TM177189	ACTAGTTCCNCTAATAATTG GAGCCCCTGACATGGCATTT CCTCGTATAAATAATATAAGT TTCTGACTCCTACCTCCTTC TTTTCTACTACTACTAGCCTC GTCTATAGTAGAAGCGGGAG CGGGTACAGGCTGAACAGTC TACCCCCCTCTAGCAGGAAA	Common pipistrelle	*Pipistrellus pipistrellus*	99.38%
B1373	SE wall 2 - Woodland Farm	TM177189	CTAATAATTGGAGCCCCTGA CATGGCATTTCCTCGTATAA ATAATATAAGTTTCTGACTCC TACCTCCTTCTTTTCTACTAC TACTAGCCTCGTCTATAGTA GAAGCGGGAGCGGGTACAG GCTGAACAGTCTACCCCCCT CTAGCAGGA	Common pipistrelle	*Pipistrellus pipistrellus*	100.00%
B1374	SE Wall 3 - Woodland Farm	TM177189	ACTGACTAGTTCCNCTAATA ATTGGAGCCCCTGACATGGC ATTTCCTCGTATAAATAATAT AAGTTTCTGACTCCTACCTC CTTCTTTTCTACTACTACTAG CCTCGTCTATAGTAGAAGCG GGAGCGGGTACAGGCTGAA CAGTCTACCCCCCTCTAGCA GGAAA	Common pipistrelle	*Pipistrellus pipistrellus*	99.40%

B1375	NE Wall 4 - Woodland Farm	TM177189	ACTAGTTCCNCTAATAATTG GAGCCCCTGACATGGCATTT CCTCGTATAAATAATATAAGT TTCTGACTCCTACCTCCTTC TTTTCTACTACTACTAGCCTC GTCTATAGTAGAAGCGGGAG CGGGTACAGGCTGAACAGTC TACCCCCCTCTAGCAGGAAA	Common pipistrelle	*Pipistrellus pipistrellus*	99.38%
B1376	S Wall 5 - Woodland Farm	TM177189	CTAATAATTGGAGCCCCTGA CATGGCATTTCCTCGTATAA ATAATATAAGTTTCTGACTCC TACCTCCTTCTTTTCTACTAC TACTAGCCTCGTCTATAGTA GAAGCGGGAGCGGGTACAG GCTGAACAGTCTACCCCCCT CTAGCAGGAAA	Common pipistrelle	*Pipistrellus pipistrellus*	100.00%
B1377	NW Wall 6 - Woodland Farm	TM177189	CTAATAATTGGAGCCCCTGA CATGGCATTTCCTCGTATAA ATAATATAAGTTTCTGACTCC TACCTCCTTCTTTTCTACTAC TACTAGCCTCGTCTATAGTA GAAGCGGGAGCGGGTACAG GCTGAACAGTCTACCCCCCT CTAGCAGGAAA	Common pipistrelle	*Pipistrellus pipistrellus*	100.0%

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chelsea Warner **Approved by:** Gabriela Danickova

METHODOLOGY

Once samples have arrived in the laboratory, a single bat dropping is selected for its suitability (freshness and size). The DNA is then isolated using a commercial DNA extraction kit. Using PCR, bat DNA (if present within the sample) is amplified using bat DNA-specific molecular markers designed to amplify a short fragment of the mitochondrial gene. If amplification is successful, the resulting DNA sequence is revealed using a process known as Sanger Sequencing in order to obtain the genetic sequence. The sequence results are aligned against a library of known bat reference sequences using bioinformatics software, which enables us to determine which species the extracted DNA matches with, informing the species identity and sequence similarity (%).

If the initial analysis is unsuccessful, the entire process is repeated up to two additional times with fresh reserve droppings. If no DNA is detected after three attempts, we can be confident that any further analysis of the sample will likely also fail to result in species identification.

INTERPRETATION

Genetic Sequence: The unique DNA sequence obtained from the sample.

Sequence Similarity: How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an exact match of dropping to the indicated species' reference sequence. Lower scores (80-99%) indicate some variation between the sample and reference sequence, likely due to natural variation between individual genetic sequences and/or systematic variations generated through the sequencing process. Scores below 80%

similarity should be interpreted with care and can indicate part degraded or part contaminated samples.

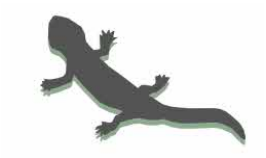
Inconclusive Result:

Degraded sample:
DNA degraded, unable to determine species identification due to degradation of sample DNA. This can happen either before sample collection (old droppings, exposure to UV etc or after sample collection if stored for long periods before analysis or not handled correc

Inhibited/contaminated sample:
Unable to determine species identity due to contamination or the suspected presence of large quantities of PCR inhibitors. Contamination sources can come from other species which come into contact with droppings, human contamination during sample collection.

Alternative Result:

Sometimes, other mammalian species such as rodents are detected. We find this to be a common occurrence as some bat droppings can be similar in appearance to rodent droppings. Although sometimes unexpected, repeat analyses in these cases would likely return the same results.



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