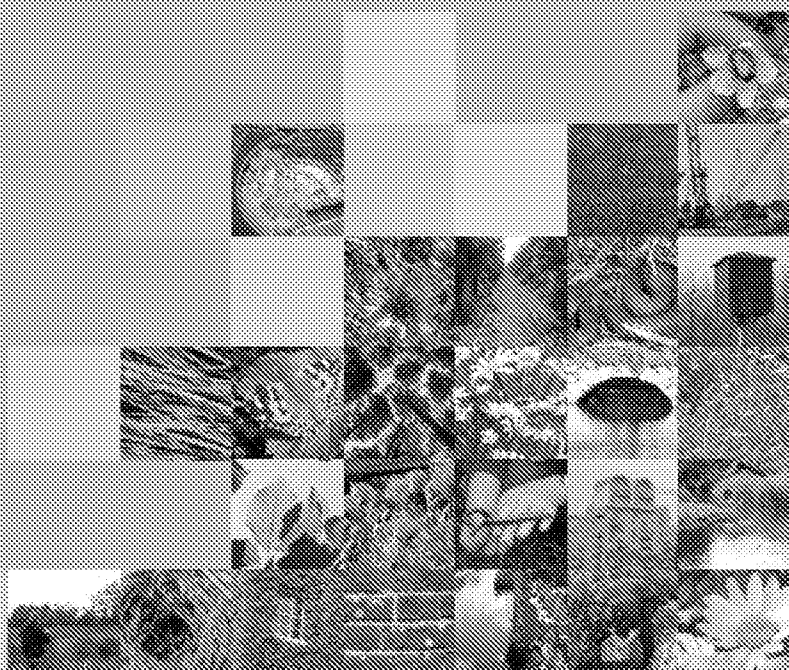




Hoe Barn, Flansham, West Sussex

Ecological Scoping, Bat and Barn Owl Survey

JJR Designs

Version	Author	Checked by	Approved by	Date	Type
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Executive Summary

- » The Ecology Consultancy was commissioned by JJR Designs to carry out an Ecological Scoping Survey and Preliminary Roost Assessment for bats and barn owls *Alba Tyto* at Hoe Barn, Flansham, West Sussex.
- » The site does not fall within any designated nature conservation sites.
- » The proposed development will result in the conversion of three existing barns for use as residential dwellings. The proposed development will also result in the loss of some amenity grassland and horticultural planting.
- » The sites contains the following habitats: amenity grassland, hardstanding, buildings, horticultural planting, a greenhouse and a flower bed and a 5m x 5m patch of scrub.
- » The existing barns were assessed in terms of their suitability to support roosting bats and barn owls and were assessed as negligible.
- » No evidence of roosting bats or roosting barn owls were found during a detailed buildings inspection.
- » The habitats present within the application site boundary have potential to support other protected species including badger, breeding birds and reptiles. Mitigation to avoid any potential impact on these species has been provided in Section 5 of this report and should be followed.

1 Introduction

BACKGROUND

- 1.1 The Ecology Consultancy was commissioned by JJR Designs to carry out an Ecological Scoping Survey and Preliminary Roost Assessment for bats and barn owls, at Hoe Barn located in Flansham, West Sussex.
- 1.2 The aim of the survey was to identify the broad habitat types present at the site and the potential of these habitats to support protected species, in order to identify any likely ecological constraints to future development works. A detailed survey for bats and barn owls was also undertaken at the site.

SCOPE OF REPORT

- 1.3 This report details the results of the Ecological Scoping Survey, including protected species assessment and provides recommendations to minimise the risk of impacting any legally protected and/or notable¹ habitats and species, including Habitats and Species of Principal Importance² for the Conservation of Biodiversity in England as listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (hereby referred to as 'species or habitats of principal importance').
- 1.4 This report also details the results of a detailed external and internal building inspection for evidence of use and potential to support bats and barn owls.

SITE CONTEXT AND STATUS

- 1.5 The site is located within the rural hamlet of Flansham and is bound to the north and south by pasture, to the east by a residential dwelling and to the east by Hoe Lane. The site is centred upon Ordnance Survey Grid Reference SU 954 015.

¹ Notable species include species of principal importance; those listed on LBAPs; Birds of Conservation Concern (Eaton *et al.*, 2009); and/or Red Data Book/nationally notable species (JNCC, undated).

² Section 41 (S41) of the NERC Act (2006) includes a published list of habitats and species which are of principal importance for the conservation of biodiversity in England. It is used to guide decision-makers such as LPAs in implementing their duty under section 40 of the NERC Act (2006), to have regard to the conservation of biodiversity in England, when carrying out their normal functions. Further details of the NERC Act can be found at:

- 1.6 The survey area comprised a barn with three distinct sections, hardstanding, amenity grassland, horticultural planting, a greenhouse, a flower bed and a small 5m x 5m area of scrub. There were no hedgerows within the site boundary. A mature unmanaged hedgerow bordered the site and access road to the west.

DESCRIPTION OF THE DEVELOPMENT

- 1.7 The proposals for the site comprise the conversion of a 1960s barn for use as a private residential dwelling, built on the footprint of the former barn. Removal of amenity grassland and small borders containing mainly introduced shrubs is likely to be required to facilitate the development.

2 Methodology

DESK STUDY

- 2.1 A desk study assessing records within a 2km radius of the site, for designated nature conservation sites and protected species was conducted using data available from the Sussex Biodiversity Record Centre (SxBRC). The Ecology Consultancy is a partner organisation with the SxBRC and holds regularly updated biological data sets compiled from records provided by local recorders. Data remains the property of the original recorder and is reproduced with permission.

PERSONNEL

- 2.2 A Preliminary Roost Assessment of the buildings for bats and barn owls was carried out by Charlie Dwight, a Senior Ecologist CEcol, MCIEEM, BSc and Natural England Class licence holder for bats, great crested newts *Triturus cristatus*, dormice *Muscardinus avellanarius* and Natural England survey and disturbance licence for barn owl.
- 2.3 A Phase 1 habitat survey of the area to be impacted by development was conducted by Markus Jaskari BSc, MRes, gradCIEEM an ecologist with two years' commercial experience who is competent in carrying out botanical surveys.

HABITAT AND PROTECTED SPECIES ASSESSMENT

- 2.4 The habitat survey following standard Phase 1 survey methodology (JNCC, 2010), was carried out on 24 August 2015 and covered the development site, including boundary features. Habitats were described and mapped. A habitat map of the site is included in Appendix 1 together with photographs in Appendix 2.
- 2.5 The potential of the site to provide habitat for protected species was assessed using field observations made at the same time as the habitat survey. The site was inspected for indications of the presence of legally protected species.
- 2.6 Incidental records of birds and other fauna noted during the course of the habitat survey were also compiled. Scientific names are given after the first mention of a species, thereafter, common names only are used. Nomenclature follows Stace (2010) for vascular plant species.

PRELIMINARY ROOST ASSESSMENT

Building Inspection – Bats

- 2.7 The building inspection was carried out on 6 August 2015 and during the bat maternity period. The building inspection comprised an internal and external detailed search of all accessible architectural features for bat droppings, urine staining, scratch marks, staining around suitable crevices and feeding remains. Window panes and other internal and external surfaces were visually checked for droppings or other secondary evidence of bats. A high powered torch was used to illuminate recesses and crevices at height and these were inspected using close focusing binoculars.
- 2.8 All external features, such as soffit boxes, roof tiles, hanging tiles, ridge areas and brickwork, were assessed for their suitability as bat roosting sites. Close focusing binoculars were used to inspect any possible bat access features as may be found along ridge areas. Any features that could potentially provide access into internal areas such as roof voids and cavity walls were noted.
- 2.9 Any splits, holes and crevices within brickwork or timbers, including around window and door frames, were examined both externally and internally for signs of staining and droppings using a high powered torch and close focusing binoculars. If any bat droppings or other evidence was found the search was then concentrated on any features in the vicinity that may have concealed roosting bats.
- 2.10 During the internal inspection the surveyor worked through the internal roof voids of the building in logical progression searching each adjoining roof void in turn as well as all small storage areas such as dormer rooms.
- 2.11 Within the roof voids and other internal spaces all surfaces including floor areas were checked for discarded feeding remains and bat droppings. The beam from a high powered torch was shone along the length of each individual rafter, where appropriate to the roof type, looking for bats, staining and droppings. The roofing material was also inspected for areas of overlapping materials, holes and potential access points into the ridge area. Any open water tanks were inspected for the presence of bat corpses.
- 2.12 The timber frame of the roof and supporting architectural features was closely inspected for any roosting bats. This included searching any accessible timber joints and the junctions between rafters, purlins and braces and any open mortise joints. A

sample was collected from any scattered or accumulated bat droppings that were found along with a rough assessment of quantity.

- 2.13 The survey methodology followed best practice guidelines (Mitchell-Jones & McLeish, 2004; Hundt, 2012). Equipment used and at hand during the building inspection included an extendable ladder, close-focusing binoculars, endoscope (SeeSnake Rigid Micro), hand held LED torch and a high powered torch.

Assessment criteria - buildings

- 2.14 The potential for the buildings to support roosting bats was assessed using the following criteria were used to determine the level of potential of the buildings for roosting bats:

- *Negligible* – While presence cannot be absolutely discounted there were no significant visible features that could be used by bats for roosting.
- *Low* – Small number of potential roosting features such as could be utilised by individual opportunistic roosting bats. Site situated within isolated habitat that could be used by foraging bats but which is not connected by prominent linear features such as woodland edge, hedgerows and tree lines.
- *Moderate* – Several potential roosting features in the buildings or other structures. There is surrounding habitat such as woodland, scattered trees, hedgerows suitable to support foraging and roosting bats. The site is connected with the wider landscape by linear features such as woodland edge, hedgerows and tree lines that could be used by commuting bats.
- *High* – Buildings or other structures, such as mines, caves, tunnels, ice houses and cellars, with numerous features of potential significance for roosting bats. Surrounding landscape has high value habitat for roosting, foraging and commuting that is contiguous with on-site habitats. The site is connected with the wider landscape by strong linear features and may be close to known roosts or other potentially valuable habitat resources.
- *Confirmed roost* – Evidence indicates a building or other structure is used by bats, for example:
 - bats seen roosting or observed flying from a roost or freely in the habitat;
 - droppings, carcasses, feeding remains;
 - bats heard 'chattering' inside on a warm day or at dusk.

- 2.15 Where possible, the number of bats likely to be using the roost site, and the species of bat(s) would be determined from the evidence available.

BARN OWL ASSESSMENT

Roost and Nest Potential Assessment

- 2.16 A barn owl roost and nest potential assessment survey was undertaken on the 6 August 2015 and focused upon the barn within the site boundary. The survey methodology conformed to standardised methodologies defined by Shawyer (2011).
- 2.17 The primary purpose of the survey was to assess the building in terms of its suitability for barn owls as an active roost site and potential as a nest site.
- 2.18 An external inspection of the building was undertaken from ground level and comprised an inspection with binoculars of potentially suitable access features. Potentially suitable access features in excess of 80cm in diameter include; open fronted barns, open windows/doors, missing individual bricks within the walls, open fronted hay lofts and defunct roofs supporting large holes.
- 2.19 An internal inspection of the structure was carried out from ground level using a high powered torch. However, where possible the inspection was also extended to accessible internal areas of the roofs using a ladder. A thorough inspection for evidence of barn owls of all surfaces including timber beams, ledges, platforms, holes and hollows within the blockwork was undertaken in daylight hours.
- 2.20 Horizontal surfaces beneath any suitable features were inspected with a high powered torch for secondary evidence of barn owls and included a search for pellets, feathers and chalky staining.

LIMITATIONS

- 2.21 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment.
- 2.22 The survey was conducted during the main flowering season, but the grassland had been recently cut short. Despite these conditions it is considered that plant identification was sufficiently robust to determine the composition of grassland within the development site.

3 Results

DESK STUDY

Statutory Sites of Importance for Nature Conservation

- 3.1 The proposed development site does is not subject to any European or National statutory nature conservation designations, such as Special Protection Area (SPA), Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), National Nature Reserves (NNR) or Local Nature Reserves (LNR).

Non-statutory Sites of Importance for Nature Conservation

- 3.2 The site does not fall within any non-statutory sites of importance for nature conservation.

Protected Species

- 3.3 Bats: The data search returned 16 records for bats comprising the following species: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, serotine *Eptesicus serotinus*, whiskered bat *Myotis mystacinus*, noctule bat *Nyctalus noctula*, brown long-eared bat *Plecotus auritus* and long-eared bat *Plecotus sp.* The nearest records for bats were 1.27km west of the site. All bat species are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended).
- 3.4 Great crested newt: The closest record for great crested newt within a 2 km boundary was 1.92km SE of the site in Caledon Avenue (VC13). Great crested newts are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
- 3.5 Dormouse: There were no records for dormouse within a 2km radius of the site. Dormouse is protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
- 3.6 Barn Owl - The data search returned no records for barn owls within a 2 km radius of the site. Barn owls are afforded protection under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

- 3.7 Reptiles - The nearest desk study record for reptiles was for slow worm 1.22km west of the site in Bognor Regis (A29). Widespread (common) reptiles are afforded protection under Schedule 5 the Wildlife and Countryside Act 1981 (as amended).
- 3.8 Badgers *Meles meles* – The data search returned no records for badgers within a 2 km radius of the site. Badgers are protected under the Badgers Act 1994 (as amended).
- 3.9 Breeding birds – Breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended).

HABITAT AND PROTECTED SPECIES ASSESSMENT

Buildings

- 3.10 A barn comprised of three distinct sections was present within the site boundaries – see detailed building description below. Adjacent to the northernmost raised bed there was a small greenhouse.

Hardstanding

- 3.11 Areas of hardstanding were present adjacent to the barn in the north-east and south-east corners (see Appendix 2, Photograph 4).

Amenity grassland

- 3.12 Grassland was present adjacent to the barn to the west, east and south (see Appendix 2, Photographs 3-5). The sward was managed by mowing. Grasses included frequent annual meadow-grass *Poa annua*, occasional perennial rye-grass *Lolium perenne* and Yorkshire-fog *Holcus lanatus* and rare red fescue *Festuca rubra* and false oat-grass *Arrhenatherum elatius*. Wildflowers included occasional black medic *Medicago lupulina*, white clover *Trifolium repens* and creeping buttercup *Ranunculus repens*. Canadian fleabane *Conyza canadensis* was frequent to the north-east of the barn. White stonecrop *Sedum album* was locally frequent growing amongst moss (see Target Note 4).

Horticultural planting

- 3.13 Horticultural planting comprised two vegetable plots and two raised beds in the western corner of the site.

Scattered Scrub

- 3.14 Scattered scrub comprised native and non-native species. Elder *Sambucus nigra* formed a small patch of c.5m x 5m at the north-western end of the barn. Garden tree

mallow *Malva x clementii* was the dominant species present in the flower bed next to the site entrance to the west of the barn.

Hedgerows

- 3.15 There were no hedgerows within the site boundary. Adjacent to the western boundary and the access road was a mature unmanaged hedgerow comprising hazel *Corylus avellana*, blackthorn *Prunus spinosa*, elder and rose *Rosa* sp. The hedgerow continued towards the south as a managed hedge comprising cedar *Cedrus* sp. (see Photograph 3).

Refuse Tip

- 3.16 Sheets of corrugated iron were laying on the ground to the north of the barn.

Target Notes

- 3.17 Target Note 1: a log pile present on the southern wall of the barn (see Appendix 2, Photograph 6).
- 3.18 Target Note 2: a wood chip pile c.2m x 2m amongst the sward in the amenity grassland in the north-east corner of the site.
- 3.19 Target Note 3: Coarse grit was mixed with soil in the amenity grassland to the east of the barn.
- 3.20 Target Note 4: patches of bare ground and moss in amenity grassland to the west of the barn (see Appendix 2, Photograph 3).

Protected Species Assessment

- 3.21 The habitats within the application site boundary were evaluated as to their likelihood to provide sheltering, roosting, nesting and foraging habitat for protected species. The site was considered unsuitable to support otter *Lutra lutra* and water vole *Arvicola amphibius* due to the lack of on-site or adjacent waterbodies. No further action in relation to these species is considered necessary. The habitats at the site have potential to support the following species:

- ✧ Bats;
- ✧ Great crested newt;
- ✧ Dormouse;
- ✧ Barn Owl;

- ✧ Reptiles;
- ✧ Badgers; and
- ✧ Breeding birds.

3.22 These species were selected for further consideration based on the presence of potentially suitable habitat on-site or within close proximity to the proposed zone of influence associated with the development site. The results of the field survey are presented in Table 2 below. The relevant legislation relating to protected species is presented within Appendix 3.

Table 2: Assessment of potential presence of protected and/or species of principal importance for biodiversity within the survey area.

Species	Main legislation and policy (see Appendix 3)	Reason for consideration	Likelihood of occurrence
Bats	Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	The presence of a built structure on site.	Negligible (roosting): The barn on the site was assessed as negligible for roosting bats due to the lack of suitable roosting features (see below). Moderate (foraging): There is potential for bats to use habitats present on-site for commuting/foraging between suitable off-site habitats within the wider surrounds.
Great Crested Newt	Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	The presence of amenity grassland and scrub on the site.	Negligible (breeding/aquatic phase): No aquatic habitats were found within the development boundary. Negligible (hibernating/terrestrial phase): The site comprised very limited suitable habitat for terrestrial GCN (no woodland or coarse grassland and minimal scrub).
Dormouse	Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	There are hedgerows and trees adjacent to the site boundary.	Negligible: The site comprised no woodland, trees or hedgerows however there was a mature unmanaged hedgerow bordering the site immediately outside the site boundary with mature hazel. This hedgerow is isolated from the wider landscape and not connected to any areas of woodland. It will not be impacted by the works.
Barn Owl	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).	The presence of a built structure and rural landscape surrounding the development boundary.	Low (roosting): The timber rafters present within the open fronted section of the barn provide suitable roosting features for barn owls. No evidence (pellets, whitewash, feathers) of barn owls was found within the structure at the time of the survey. Negligible (nesting): The barn was assessed as unsuitable as a nest site for barn owls due to the lack of suitable nest chambers. No evidence of nest debris was found at the time of the survey.
Reptiles	Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).	Scrub located to the north of the barn, wood chip and raised vegetable beds to the east and a log pile to the south provide suitable habitat.	Low: There is potential for a small population (individuals) of widespread reptiles species such as slow worm to be present under wood chip, logs and raised beds within the development site boundaries.

Table 2: Assessment of potential presence of protected and/or species of principal importance for biodiversity within the survey area.

Species	Main legislation and policy (see Appendix 3)	Reason for consideration	Likelihood of occurrence
Badger	The Badgers Act 1994 (as amended).	Grazing pastures, trees and scrub are located to the south and west of the application site boundary providing suitable habitat for sett building.	Negligible: No suitable habitats for sett building was found within the development boundary. No evidence of badger activity was found at the time of the Ecological Scoping Survey.
Breeding birds (barn owls addressed above)	Wildlife and Countryside Act 1981 (as amended).	The barn, shrubs and hedgerow habitats provide suitable breeding habitat.	Present: Evidence of breeding birds (swifts, house sparrows and feral pigeon) was observed within the barn during the barn owl/bat survey.

BATS – PRELIMINARY ROOST ASSESSMENT

Building Inspection

- 3.23 The building inspection covered a single storey barn, circa 1960s which was split into three distinct sections. The lower sections of the external walls were constructed of concrete blockwork and the upper section comprised vertical timber weatherboard with gaps present between each vertical slat. The barn supported a slightly pitched, pre-fabricated corrugated metal roof. Crevices <0.5m in height were present within old timber telegraph poles that formed part of the barn structural supports. Each section of the barn is detailed individually below with a plan showing the building location in Appendix 1 and supporting photographs of key features in Appendix 2.
- 3.24 Section B1 Internal: Measured 10m length x 6m width and height and comprised modern timber joists devoid of any crevices. Blockwork walls were tightly sealed and devoid of any gaps within the brickwork mortar. A blue plastic membrane was present between a lowered plyboard ceiling and the external corrugated metal roof.
- 3.25 Section B1 Results – No evidence of bats was found at the time at the survey and the internal and external features associated with **section B1** were assessed as providing **negligible potential for roosting bats** due to the lack of suitable crawl spaces and the absence of an internal roof void.
- 3.26 Section B2 Internal – Measured 20m length x 20m width x 8m height and was open fronted on the south elevation and subject to very high light intensities. Plastic tarpaulin was fixed to the vertical timber slats on the west elevation of the building. Section B2 comprised modern timber joists that were devoid of any cracks or crevices. Active bird nests identified as swift *Apus apus* and feral pigeon *Columba livia* were present within the internal areas of the barn.
- 3.27 Section B2 Results – No evidence of bats was found at the time at the survey and the internal and external features associated with **section B2** were assessed as providing **negligible potential for roosting bats** due to the lack of suitable crawl spaces and the absence of an internal roof void.
- 3.28 Section B3 Internal – Measures 10m length x 10m width x 8m height. The internal areas were subject to very high light intensities. Plastic tarpaulin was fixed across timber vertical slats and supported no crevices or crawl spaces. Evidence of nesting

house sparrow *Passer domesticus* at the eaves and feral pigeons on the modern timber joists were present at the time of the survey.

- 3.29 Section B3 Results – No evidence of bats was found at the time at the survey and the internal and external features associated with **section B3** were assessed as providing **negligible potential for roosting bats** due to the lack of suitable crawl spaces and the absence of an internal roof void.

BARN OWLS

Roost & Nest Potential Assessment

- 3.30 The modern timber rafters present within section B2 (open fronted on southern elevation) provided some suitable roosting opportunities for barn owls, however no evidence of barn owls: pellets, feathers, whitewash was found within the internal or upon external features associated with the barn.
- 3.31 The barns were devoid of internal chambers that may potentially provide suitable nest sites for barn owls. Therefore Hoe Barn was assessed as **negligible in terms of its importance as a nest site for barn owls** and no evidence of barn owls was found during the survey.

4 Conclusions and Recommendations

CONCLUSIONS

- 4.1 The site is not subject to any statutory or non-statutory nature conservation designations.
- 4.2 The survey area comprised a barn with three distinct sections, hardstanding, amenity grassland, horticultural planting, a greenhouse, a flower bed and a small 5m x 5m area of scrub. There were no trees or hedgerows within the site boundary. A mature unmanaged hedgerow was adjacent to the site and access road to the west. Habitats present are of value within the immediate vicinity of the site only, but may assume higher value where they support protected and/or notable species, such as bats.
- 4.3 No evidence of roosting bats was found within Hoe Barn which was assessed as having negligible potential for roosting bats due to the lack of suitable architectural features. Therefore no further surveys in relation to the proposed development and bats are considered necessary.
- 4.4 No evidence of barn owls indicating use as a roost or nest site was found within the barn during the survey. Hoe barn was considered to be unsuitable as a nest site for barn owls due to lack of suitable nest chambers.
- 4.5 The habitats present within the development site boundaries provide limited suitable habitats for reptiles including unmanaged edges of amenity grassland and horticultural planting, scrub and piles of logs, wood chip and corrugated iron sheets. Therefore mitigation is recommended (see below).
- 4.6 The habitats including the barn, scrub, shrubs and hedgerow provide suitable habitats for breeding birds. Breeding birds with active nests including house sparrow, swift and feral pigeon were present within the internal areas of the barn at the time of the bat and barn owl survey and recommendations to mitigate for any impact is also provided below.

RECOMMENDATIONS

Habitats

- 4.7 The phase 1 habitat survey was confined to the proposed development footprint. It is understood impacts upon an adjacent field or other habitats are unlikely to occur as a result of the development. However if the scope of works is subject to change and habitats outside the development footprint are likely to occur as a result, the advice of an ecologist must be sought, prior to the removal of any adjacent habitats as further habitats and/or protected species surveys may be required.
- 4.8 It is understood the storage of all materials and construction of a compound area will be confined within the development boundary, or on areas of existing hardstanding. Areas of uncut grassland should not be used and tracked heavy plant machinery should be confined to using existing hardstanding tracks or roads.
- 4.9 The unmanaged hedge to the west of the barn bordering the access road is recommended to be restored and managed as a native hedge in order to mitigate loss of grassland and shrubs on the site for development.

Badgers

- 4.10 No evidence of badgers was found within the site boundaries at the time of the visit and no further survey in relation to badger is considered necessary. However the surrounding landscape does provide suitable habitats for badgers, therefore if the scope of the development is changed and extends into semi-improved neutral grassland habitats located south of the development site boundary an updated survey for badgers will be required.
- 4.11 Where it is necessary to excavate trenches to facilitate proposed ground works, mammal ladders (0.5m wide wooden planks) are recommended to be used to provide a means of escape for mammals including badgers, should they fall and become trapped (pitfall trapped) within the trench. Mammal ladders should be placed at 25m intervals along the entire length of any open trench and be maintained whilst the trench remains excavated. The trench should be checked daily prior to any works commencing and if any mammals have inadvertently become trapped and unable to make their own way out of the trench, the advice and assistance of a qualified ecologist must be sought.
- 4.12 Chemicals and other harmful substances should be stored within an airtight container and stored within a locked unit to prevent badgers and other mammals coming into contact with potentially lethal chemicals and substances at the site.

Reptiles

- 4.13 The majority of the habitats present at the site are sub-optimal for reptiles. However the hedgerow and piles of debris/materials provide suitable habitats for hibernating reptiles. It is understood that the hedgerow to the west of the site boundaries is to be retained in situ and no impacts upon it are envisaged. To avoid impacts upon reptiles that may use piles of debris/materials present i.e. wood chip, log piles, raised vegetable beds, corrugated iron sheets etc. during the hibernation period, it is recommended that are appropriately removed. These habitats should be removed carefully by hand prior to 15 September to prevent reptiles taking up occupancy within the works area during the hibernation period. Debris/materials should be relocated to an area of hardstanding outside the proposed development boundary for the duration of the construction phase.

Breeding Birds

- 4.14 The built structure, individual trees, hedgerow, scrub and introduced shrub provides suitable habitat for breeding birds. Where removal of these habitats is required to facilitate the development, these are recommended to be removed outside of the nesting season i.e. October – February inclusive to avoid any potential impacts.
- 4.15 Where project time constraints cannot facilitate the timeframe specified and it becomes necessary to remove these habitats during the bird breeding season March – September, an inspection of the habitats must be undertaken by a qualified ecologist no more than 48 hours, prior to proposed removal of the habitats. If any breeding birds or dependant young are found to be present the works must be delayed until the young have fledged the nest or the nest is no longer active.

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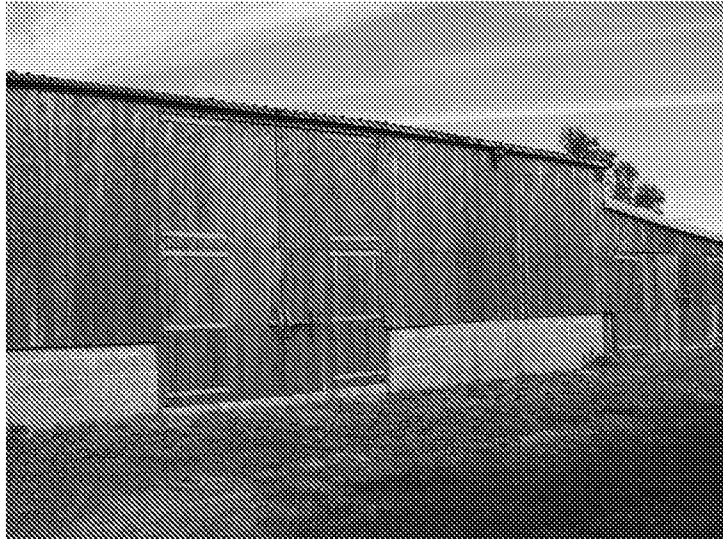
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Appendix 1: Habitat Map

Appendix 2: Photographs

Photograph 1
Hoe Barn, west elevation.



Photograph 2
Section B3 - internal area
showing plastic tarpaulin (left)
and vertical timber slats.



Photograph 3
Amenity grassland to the west
of the barn. Hedgerow outside
the site boundary visible on the
right of the picture.



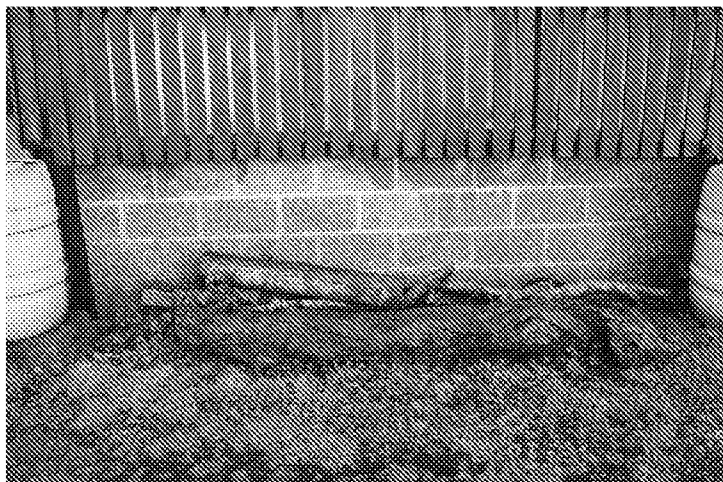
Photograph 4
Amenity grassland and
hardstanding to the east of the
barn. Horticultural planting and
greenhouse are visible in the
background.



Photograph 5
Amenity grassland to the south
of the barn. Horticultural
planting is visible in the
background.



Photograph 6
A log pile to the south of the
barn.



Appendix 3: Legislation

NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- ✧ Deer Act 1991
- ✧ Countryside and Rights of Way (CRoW) Act 2000
- ✧ Natural Environment & Rural Communities (NERC) Act 2006
- ✧ Protection of Badgers Act 1992
- ✧ Wild Mammals (Protection) Act 1996

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant

species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- ✧ In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- ✧ The Conservation of Habitats and Species Regulations 2010 does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- ✧ In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests': i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Birds

All birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- ✧ Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- ✧ Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- ✧ Intentionally take or destroy an egg of any wild bird
- ✧ Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- ✧ In Scotland only, intentionally or recklessly obstruct or prevent any wild bird from using its nest

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- ✧ Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young

- ❖ Intentional or reckless disturbance of dependent young of such a bird
- ❖ In Scotland only, intentional or reckless disturbance whilst lekking
- ❖ In Scotland only, intentional or reckless harassment

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August³. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- ❖ Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- ❖ Deliberate disturbance of bat species as:
 - to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young;
 - (ii) to hibernate or migrate³
 - to affect significantly the local distribution or abundance of the species
- ❖ Damage or destruction of a breeding site or resting place

³ It should be noted that this is the main breeding period. Breeding activity may occur outwith this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

- ❖ Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- ❖ Intentional or reckless disturbance (at any level)
- ❖ Intentional or reckless obstruction of access to any place of shelter or protection
- ❖ Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species (EPS) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost⁴.

⁴ Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. 150. The Mammal Society, Southampton.



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