

**Preliminary Ecological Appraisal
Internal and External Bat Inspection**

**Middleton House
Bognor Regis**

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

- 1.1 The Ecology Partnership was commissioned by Tim Hanslip to undertake a preliminary ecological appraisal and internal and external bat inspection at Middleton Road, Yapton Road, Bognor Regis, PO22 6DU.
- 1.2 This report presents the results of The Ecology Partnership's surveys in and around the site, which aims specifically to assess the site's potential to support protected species and protected habitats that may be affected by the proposed development.
- 1.3 Section 2 of this report sets out the methodologies of the Ecology Partnership's surveys. In section 3 the results of the surveys are presented. Discussions and implications for development are found in section 4, including general site enhancements. Conclusions drawn from the report are presented in section 5.

Site Context and Status

- 1.4 The site is located on land at Middleton House in Bognor Regis, West Sussex (SU97442 00523). The site covers approximately 0.2ha and includes one house, a driveway, grassland and scattered trees. The site is surrounded by a mosaic of agricultural fields and high-density housing. There are no statutory designations within 2km of the site.
- 1.5 The aerial photograph below (Figure 1) shows the site and its immediate surroundings. The red line depicts the approximate site boundary and survey area.



Figure 1: Approximate location of the red line boundary

Description of Proposed Development

- 1.6 The plans are yet to be finalised and will be influenced by a number of surveys of which ecology is one. The proposals are to completely re renovate the house, which will include removing the roof structure and refurbishing the house.

Planning Policies

- 1.7 National and local planning policies may have an affect on the proposed development. The following paragraphs identify relevant planning policies and discuss these in the context of the site.
- 1.8 Under the NERC Act (2006) "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity". In order to comply with this 'Biodiversity Duty', planning decisions must ensure that they adequately consider the potential ecological impacts of a proposed development.

1.9 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principle importance for conserving biodiversity. These were known as BAP habitats and species. The UK BAP lists of priority species and habitats remain an important and valuable reference certainly at county levels. However, the UK Post 2010 Biodiversity Framework (published 2012) has succeeded BAP. It was produced by JNCC and Defra, on behalf of the Four Countries' Biodiversity Group (4CBG), through which the environment departments of all four governments in the UK work together to achieve the 'Aichi Biodiversity Targets' and the aims of the EU biodiversity strategy.

1.10 National policy guidance is provided by National Planning Policy Framework (NPPF), which sets out the Government's planning policies for England and how they should be applied. Section 11 of the document is entitled 'Conserving and Enhancing the Natural Environment'. This section highlights the following:

'The planning system should contribute to and enhance the natural and local environment by:

- *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *Recognising the wider benefits of ecosystem services;*
- *Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
- *Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'*

1.11 In addition to this the following paragraphs are also considered to be relevant:

“In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework.”

“Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value. Local planning authorities may continue to consider the case for setting a locally appropriate target for the use of brownfield land.”

- 1.12 The site falls under the jurisdiction of Arun District Council. A new Local Plan is currently being developed. Until then, saved policies from the Local Plan adopted in 2003 are relevant to the site and relating to nature conservation:

Policy GEN28 – Trees and Woodlands

“Development will not be permitted if it would damage or destroy one or more trees protected by a tree preservation order, identified as ancient woodland or in a conservation area unless:

- the removal of one or more trees would be in the interested of good arboricultural practice; or*
- the benefits of the proposed development outweigh the amenity value of the protected trees.*

Conditions may be used to ensure that, for any trees which are removed as part of a development, an equivalent number are planted on the site.”

Policy GEN29 – Natural Conservation Across the District

“Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development.”

Policy AREA14 – Sites of National Importance for Nature Conservation

“Proposals for development in, or likely to affect (directly or indirectly) Sites of Scientific Interest will be subject to special scrutiny. Where such development is likely to have an adverse effect, it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Where the site concerned is a National Nature Reserve, a site identified by the Nature Conservation Review or Geological Conservation Review, particular regard will be paid to the national importance of that site.

Where development is permitted, harm to the nature conservation interest must be minimised. The use of conditions or planning agreements will be considered to ensure the protection and enhancement of the nature conservation interest, and to provide appropriate compensatory or mitigation measures and site management.”

Policy AREA15 – Sites of Local Importance for Nature Conservation

“Proposals for development in, or likely to have an adverse effect (directly or indirectly) on a Local Nature Reserve, Site of Nature Conservation Importance (including ancient woodland or wildlife corridors) or Regionally Important Geological/Geomorphological Site will not be permitted unless it can be demonstrated that reasons for the proposal outweigh the need to safeguard the nature conservation value of the site/feature. Where development is permitted which would damage the nature conservation value of the site/feature, such damage should be kept to a minimum.

Conditions or planning obligations will be used to secure necessary compensatory or mitigation measures, enhancement and site management.

Where appropriate, the Authority will consider the use of legal agreements to provide appropriate compensatory measures, enhancement and site management.”

- 1.13 The site was surveyed to assess its ecological value and to ensure compliance with national and local plan policies. The report has been produced with reference to current

guidelines for preliminary ecological appraisal (CIEEM 2013) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 Methodology

Desktop Study

- 2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and internet-based aerial mapping services (maps.google.co.uk) were used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

Preliminary Ecological Appraisal

- 2.2 An extended preliminary ecological appraisal was undertaken on the 8th September 2016 by ecologist Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010). In addition, the dominant plant species in each habitat were recorded. The potential for the site to support protected species was also assessed.

Internal and External Bat Surveys

- 2.3 An external examination of the buildings was undertaken. Unfortunately, an internal inspection of the buildings was not possible on the day of the surveys.
- 2.4 Buildings that are considered to have a high potential to support roosting bats would include the following:
- Agricultural buildings (e.g. farmhouses, barns and out buildings) of traditional brick or stone construction and/or with exposed beams;

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- Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;
 - Pre 1960s detached buildings and structures within 200m of woodland and/or water;
 - Pre 1914 buildings within 400m of woodland and/or water;
 - Pre 1914 buildings with gable ends or slate roofs regardless of location;
 - Buildings which are located within or immediately adjacent to woodland and/or immediately adjacent to water;
 - Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if, following a preliminary roost assessment the site, appear to be particularly suited to bats.

2.5 The surveyors assessed the buildings visually and searched for evidence such as:

- Staining beneath or around a hole caused by natural oils in bat fur.
- Bat droppings beneath a hole, roost or resting area.
- Audible squeaking from within a hole.
- Insects (especially flies) around a hole.
- Dead bats.

2.6 The buildings were assessed during the day. An external investigation assessed the tiles, any weatherboarding and structural timber joints of the building. This was undertaken in order to see if there were access points readily available for bats to utilise or crevices that bats could be roosting in.

Tree Assessment for Bats

2.7 Roosts of bats in trees may be identified from the following field signs:

- Black stains beneath cracks, splits and other features where bat dropping have fallen;
- Dark marks at entrance points where bats have rubbed against the wood and left natural body oils;
- Feeding remains beneath roosts, such as insect wings;
- Chattering of bats;
- Bat droppings under access points;

- Scratch marks around a feature (cavity or split) caused by bat claws;
- Urine stains below the entrance or end of split;
- Large roosts or regularly used sites may produce an odour;
- Flies around the entrance, attracted by the smell of guano.

2.8 The trees on site were assessed for their potential to support roosting bats. The trees were assessed visually for evidence of bats as well as for features that increase the likelihood such as the following:

- Woodpecker holes, natural cracks and rot holes in trunks and branches;
- Frost cracks;
- Trunk and branch splits;
- Hollow sections of trunk and branches;
- Loose bark;
- Cavities beneath old root buttresses and coppice stools;
- Dense epicormic growth;
- Dense ivy cover.

2.9 Trees scheduled for arboricultural work should also be assessed, and may be categorised (Table 1) to relate the value of their features to recommended actions. This approach allows trees to be graded according to their potential to support bat roosts. Trees may be assessed as having the potential to support bats (from an individual to a larger roost) even if no bats have been found.

Table 1: Protocol for visual inspection of trees to assess their value bats
(Bat Conservation Trust 2016)

Suitability	Roosting habitat description
Negligible	Negligible habitat features on-site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
High	A tree with one or more potential roost sites that are obviously suitable

	for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
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Badger Survey

- 2.10 A badger survey was undertaken at the site to assess if badgers were using the area and if any setts were located on the site and 30m away from the site that might constrain development. The evaluation of badger activity was based on methodology developed for the National Survey of Badgers (Creswell *et al.* 1990) and includes searching for badger field signs such as setts, badger pathways, tracks (pawprints), dung piles with latrines, badger hairs and feeding signs such as snuffle holes.
- 2.11 During the survey, all habitats potentially suitable for badgers were systematically examined for evidence of badger activity including:
- Setts: several sett types may be present within a social group territory, ranging from a single hole to numerous interconnecting tunnels. Setts can be categorised into main, annexe, subsidiary and outlier (Wilson *et al.* 1997).
 - Latrine sites: badgers characteristically deposit dung in pits, which may be located along the boundaries and within the social group territory. These sites serve as means of inter- and intra-group communication.
 - Paths and runs: well used routes between setts and/or foraging areas. Often used by generations of badgers.
 - Snuffle holes: areas of disturbed vegetation often formed by badgers foraging for ground dwelling invertebrates such as earthworms and larvae and the underground storage organs of plants.
 - Hair: often found among spoil and bedding outside entrances to setts or snagged on fences (such as barbwire) along well-used runs.
 - Footprints: easily distinguishable from other large mammal species. Often found along paths and runs or in spoil outside sett entrances.

Habitat Suitability for Reptiles

2.12 Habitat surveys were carried out to assess the potential of the site to hold populations of reptile species. This involved looking for the presence of factors that would increase the suitability of the site for reptiles such as:

- Scrub and grassland (long sward) mosaic across the site;
- Features that can be potential hibernation sites for common reptiles such as log piles;
- Grass tussocks within the grassland that can act as shelter and burrowing sites;
- Water bodies or damp places on site (grass snakes);
- Compost heaps or decaying vegetation (slow worms);
- Features that can act as refugia on the ground such as disused roofing felt.

Other Protected Species

2.13 The site was also inspected for indications of the presence of other protected species, as follows:

- Relevant habitat for dormice such as dense deciduous woodland, coppice and thick shrubbery
- Ponds and associated habitat suitable to support great crested newts
- The presence of ditches for water voles
- The presence of fresh water stream/rivers for otters
- Suitable nesting places for birds
- Other potential protected species

Limitations

2.14 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. . The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

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- 2.15 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on-site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment it is considered reasonably likely that protected species may be present.

3.0 Results

Desktop Study

- 3.1 The site does not fall within or adjacent to any statutory designated areas. There are no statutory designations within 2km of the red line boundary. Felpham SSSI is located over 2.7km to the south west of the site, with Climping Beach SSSI and West Beach LNR located 3.8km to the south east.
- 3.2 In terms of non-statutory designations, Worms Wood, located approximately 480m north west of the site is a new woodland with a network of paths, water courses and ponds. This woodland is managed by The Woodland Trust and was created in early 2000 as part of the Woods on Your Doorstep (WOYD) Millennium Project. The site is not adjacent to any sites of nature conservation.
- 3.3 There are approximately 7 units of priority deciduous woodland within 2km of the site (Figure 2). The closest of these is an unnamed woodland approximately 450m south of site.
- 3.4 Satellite imagery no ponds on site or within a 250m radius of the red line boundary. The site is located within the residential area of Middleton on Sea and residential development is located all around the site to the north, east, south and west.

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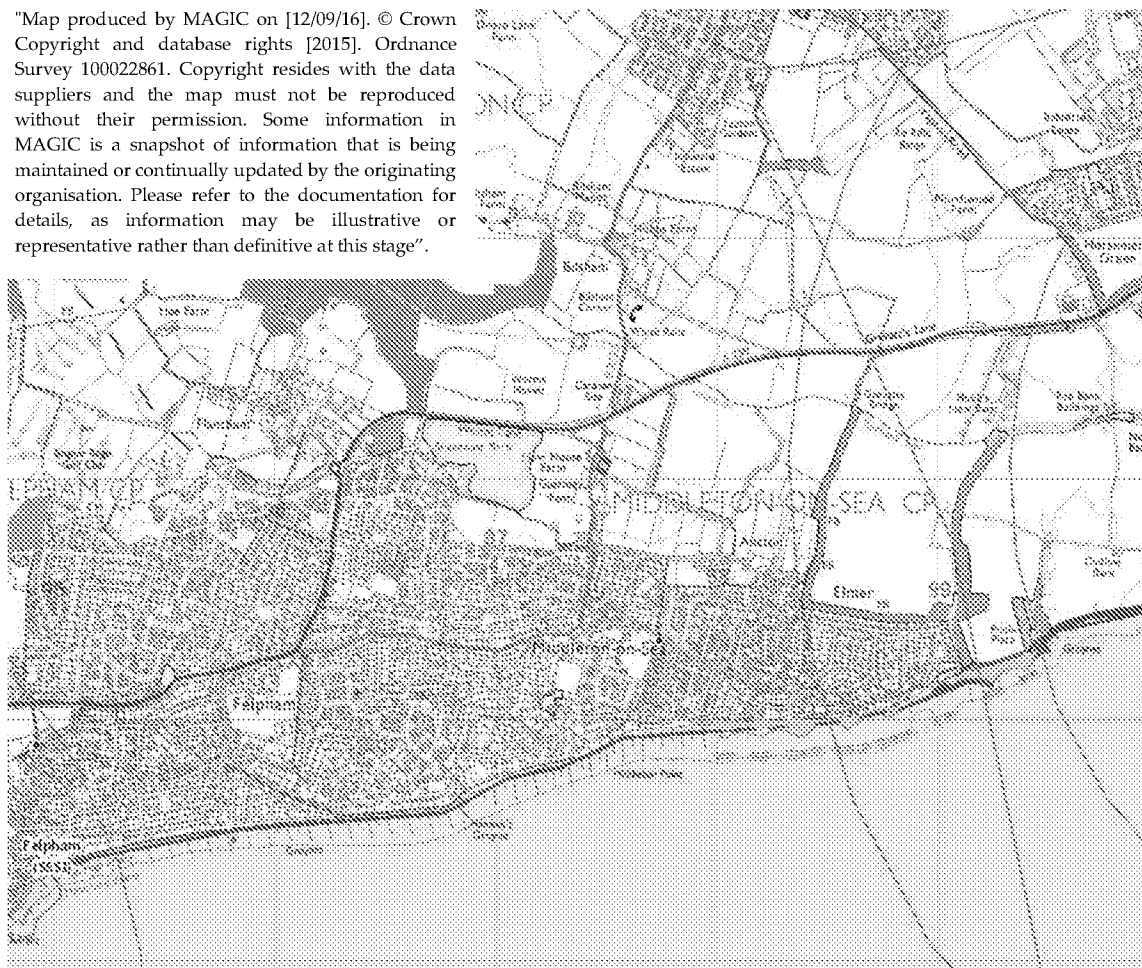


Figure 2: Woodland habitat within 2km of the red line boundary

Phase 1 Habitat Survey

- 3.5 The site was comprised of a large detached property with a separate garage and several extensions to the building and a driveway. The gardens were typical garden habitat with some mature trees, an old allotment area and several fruit trees. The habitats on site are considered to be common and widespread.

Neutral semi-improved grassland

- 3.6 The lawn extends to the east, south and west of the building and driveway. This habitat is largely well mown. The main species included Yorkshire fog (*Holcus lanatus*), cocksfoot (*Dactylis glomerata*), perennial ryegrass (*Lolium perenne*), creeping buttercup

(*Ranunculus repens*), dandelion (*Taraxacum agg*), daisy (*Bellis perennis*), red clover (*Trifolium pratense*), cat's-ear (*Hypochaeris radicata*)

- 3.7. Several scattered trees are present within the lawn habitat with apple (*Malus* sp) trees present on the north eastern corner of the site and a large ornamental tree present in the southern aspect of the site.

Treelines and Edges

- 3.8 The edges of the site support a range of tree species. The drive way and the western aspect of the site supports a range of ornamental species with species present including; sumach (*Rhus typhina*), yew (*Taxus baccata*), laurel (*Prunus* sp), holly (*Ilex aquifolium*), sycamore (*Acer pseudoplatanus*), elm (*Ulmus agg*), shrubby honeysuckle (*Lonicera* sp) with an understorey of bramble (*Rubus fruticosus*) and ivy (*Hedera helix*). Ornamental borders along the driveway and along the western edges of the site included species such as snowberry (*Symphoricarpos albus*), cherry (*Prunus avium*), elephant ears (*Bergenia* sp), dog rose (*Rosa canina*), *fatsia japonica*, cotoneaster, bamboo, hydrangeas, with bramble, ivy, broad leaved dock (*Rumex obtusifolius*) also present.
- 3.9 Along the southern edge of the site species present included leylandii species, elm, elder (*Sambucus nigra*), with butterfly bush (*Buddleja davidii*), pendulous sedge (*Carex pendula*) and hydrangeas present. The northern edge of the site supported a fence line with some ornamental planting beds at the base of the fence. The eastern edge of the site supported a fence line with species such as elder present.

Ruderal Vegetation and Scrub

- 3.10 In south eastern corner of the site behind some ornamental shrubs/hedgerows was an old vegetable patch. The ornamental hedgerow supports species such as honeysuckle (*Lonicera periclymenum*), bindweed (*Calystegia sepium*), rose (*Rosa* sp), wayfaring tree (*Viburnum lantana*), and shrubby honeysuckle.

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- 3.11 This vegetable patch area supported the grassland species as above and more ruderal species such as bramble and common nettles (*Urtica dioica*) with bindweed, hogweed (*Heracleum sphondylium*), broad leaved dock, petty spurge (*Euphorbia peplus*), red clover (*Trifolium pratense*), dandelion, daisy, forget me not (*Myosotis arvensis*), scarlet pimpernel (*Anagallis arvensis*), willowherb (*Epilobium montanum*), red shank (*Persicaria maculosa*), poppy (*Papaver rhoeas*), wood avens (*Geum urbanum*), herb Robert (*Geranium robertianum*), prickly sow thistle (*Sonchus asper*), scentless mayweed (*Tripleurospermum inodorum*) and cow parsley (*Anthriscus sylvestris*). Several compost heaps are present in this area.

Buildings and Hardstanding

- 3.12 The house supported a main structure with a small eastern extension which lead into a northern extension. A garage, which was detached from the house was also present.
- 3.13 The area of hardstanding on site included the driveway to the house, the patio surrounding the house as well as hardstanding around the garage and the northern extension.

Protected Species

Bats

- 3.14 The house and attached outbuilding were assessed for their suitability for roosting bats. The house supported several extensions and outbuildings and a separate stand along garage. All of which were accessed during the course of the survey.
- 3.15 The location of the sections of the buildings which were internally investigated for evidence of roosting bats are shown in figure 3 below.
- 3.16 The main house did not support any external features such as hanging tiles or weatherboarding. The roof structure was in reasonable condition however, on the western soffit board a large hole was present and several loose tiles were present along the roof structure. On the eastern aspect of the house a significant amount of Virginia creeper and ivy was present, covering the eastern gable end of the house and growing

up over the roof and chimney. This feature could prevent features such as lifted tiles and holes in soffit boards being obscured.



Figure 3: Location of the sections of the house which were internally investigated for roosting bats. The ornamental tree on the southern aspect of the site supported rot holes – this has been labelled as a high potential bat tree.

- 3.17 Internally, within the main void (void 1), was a series of upstairs rooms with windows. The rooms were all converted into functional space and had been in use as a library. Even the eaves had been converted and boarded into areas for storage of books. As such no internal access for bats into these areas was identified. No evidence of bats was found in these areas. Through one of the eave spaces (located on the northern edge of the house) was an enclosed void (void 2) which had not been wholly converted. The gable end of building (facing east) was brick structure and the void was lined with wooden

sarking. No evidence under the apex of the void was found, with thick cobwebs present along the entire length of the apex. However, a total of 5 bat droppings, stuck to the gable wall end, were identified. The size and shape and texture of these droppings appeared to be consistent with serotine (*Eptesicus serotinus*) droppings.

- 3.18 The area identified as section 3 of the house was a walkway between the main house and the outbuilding (section 4). This area is a single storey extension which supported a flat roof along the entire length constructed from windows. A small area of hanging tiles was located where the extension meets the main house. No external evidence of bats under the small area of hanging tiles.
- 3.19 The outhouse (section 4) had a pitched tiled roof which was enclosed. Internally the void supported an active wasps nest to the east of the void. Full access was therefore not possible. However, where access was possible no evidence of roosting bats would fund. Internally the void supported bitumen felt. Thick cobwebs were present along the apex of the building. Externally the western gable end supported weatherboarding which was warped in places potentially supporting opportunities for crevice dwelling species. On the eastern end of the building, the gable was brick finish with no external features of interest. No external evidence of the building being used by bats was identified.
- 3.20 The separate garage (section 5) supported a flat roof structure. Internally there was no internal void and the garage was light and airy. Externally no features which could be exploited by bats was found. No evidence of bats was recorded and it was considered that this structure supported negligible potential to support roosting bats.
- 3.21 The majority of the trees on site were considered to be of limited potential to support roosting bats. Only one tree, the large ornamental tree located in the southern aspect of the garden, supported several rot holes which had potential to support roosting bats. No external evidence of bats being located in this tree was identified. It was considered that this tree had 'high' potential for bats.

- 3.22 The habitats on site may provide potential foraging opportunities for bats in the local area, particularly the edges of the woodland and the hedgerows. These features may also provide connectivity into the wider landscape.
- 3.23 One emergence bat survey was undertaken on the 27th September 2016. Dusk was at 18.48 and the start of the survey was 18.20. The temperature was a warm 17 degrees with no breeze and 100% cloud cover. The location of the surveyors is shown in figure 4 below.



Figure 4: Location of the surveyors around the building and tree

- 3.24 Common pipistrelles were recorded from 19.05 onwards, with common pipistrelles foraging around the edges of the site as well as commuting around the edges of the site. At 19.19 a serotine was recorded flying above the site, with further passes from serotine

at 19.25 and later at 19.49. All serotine passes were high, with the individuals not using the garden for foraging.

- 3.25 The common pipistrelles were recorded during the entire survey. It was considered that one common pipistrelle emerged from the eastern aspect of the house at 19.21. No other bats were seen to emerge from the buildings on site. Soprano pipistrelles were recorded at 19.28 and at 19.52 again this species were recorded foraging around the edges of the site notably along the southern and eastern edges of the site. One long eared bat was recorded at 19.35. This was recorded flying just to the east of surveyor 3.
- 3.26 The number of bat passes decreased considerably from 19.50 onwards. From this time to the end of the survey at 20.20, only sporadic passes by pipistrelles were recorded.
- 3.27 No bats were recorded emerging from the tree highlighted on site as being of high bat potential.

Badgers

- 3.28 No badger setts were located on or within 30m of site where access was possible. No evidence such as latrines or snuffle holes were identified anywhere on or around site. However, mammal path ways and some digging in the compost heap area was identified, although no definitive signs of the species concerned were identified. Badgers from the surrounding area may, however, use the site for commuting or foraging purposes. The presence of fallen fruit from the apple trees and compost heaps provide some good opportunities for foraging badgers. As such it may be that the garden falls within the territory of a local badger group.

Reptiles

- 3.29 The grassland habitat on site was well maintained and managed and as such did not support the tussocky nature that is often preferred by reptiles. The small ruderal/scrub area which also supported a compost heap, was located in the south eastern edge of the site. This area supported some features which are sometimes associated with reptiles, however, the size of this area is limited.

Other Species

- 3.30 Birds are likely to use the trees and hedgerows on site and along the boundaries for foraging and breeding. Several common species were seen and heard on site at the time of the survey.
- 3.31 Owing to a lack of suitable habitat and connectivity, the site is not considered to have potential to support other protected species such as dormice, otters or water voles.
- 3.32 No ponds were present on site and no ponds were identified within the immediate surrounds of the site. Ponds are present in the new woodland to the south of Worms Lane. However, these are of sufficient distances from the site, and busy roads are present between the site and the off site habitats, that would be considered a significant barrier to dispersal.

4.0 Discussion

Site

- 4.1 The site does not fall within any statutory designations nor are there any designated sites within 2km of the redline boundary. Furthermore, there are no areas of ancient woodland located within 2km of the site. Worms Woods, located to the north west of the site, is a newly planted woodland. Whilst this could be considered as lowland deciduous woodland, which is considered a habitat of principle importance, the age of the trees is considered to be limited and is currently designated as 'young trees'. Regardless of this, the proposals for the site will not result in the habitat loss or fragmentation on any designated sites or priority habitats and as such no impacts, direct or otherwise are predicted.
- 4.2 In terms of the surrounding landscape, the site is surrounded by low density residential development. The nature of the site and extent of the development is considered to

impact only the habitats within the red line boundary and will not be significant in terms of the nature conservation value of the site or indeed the wider landscape.

- 4.3 The habitats on site are common and widespread throughout the local area. The most ecologically valuable habitat on site is considered to be the edges of the site which support mature trees and provide a layered habitat. This is considered to provide some interest in terms of invertebrate life, as well as providing opportunities for garden birds as well as bats.
- 4.4 With regards to the proposed development and local polices AREA 14 and AREA 15 are not considered to be relevant as the site is not designated nor does it lie adjacent to designated sites. With regards to GEN29, it is considered that the proposed development would not impact upon any habitats which are considered to be of high nature conservation value, with the habitats being typical back garden habitats. Wildlife should be considered, and as such this report has been commissioned, and as such resulting in recommendations for enhancements as well as a mitigation strategy for bats.
- 4.5 With regards to GEN 28, it is not known whether the trees are protected by any TPOs. The one tree, which is highlighted for bat potential, should be maintained within the scheme. The edges of the site, which supports both mature trees and some shrub layered habitats should be maintained, however, if trees are to be lost, then new planting is recommended in line with this policy.
- 4.6 The potential of the site to support protected species is considered below.

Protected Species

Bats

- 4.6 The house and attached outbuilding were considered to have a number of features suitable for roosting bats. The house itself supported including gaps under tiles on the roof of the house, lifted roof tiles and gaps between the soffit board and the walls of the main house. Furthermore, dense vegetation on the eastern elevation can cover potential

roosting features, as well as becoming roosting features in themselves. Internally only 5 droppings were located on the gable end of the building on the eastern elevation. No other droppings were located. It is considered unlikely that this reflects any significant serotine roost, however, it is considered that further surveys would be required.

- 4.7 The small outbuilding with the void supported no internal evidence of bats, but did support some warped weatherboarding. This building was considered to have 'low' potential to support bats. As such one further survey was recommended. The remaining structures within the red line boundary were considered to have negligible potential for roosting bats.
- 4.8 The house and the small annex were surveyed during September 2016. One single emergence from a common pipistrelle was recorded on the eastern elevation, considered from the soffit area of the taller apex of the building. No other bats were considered to have emerged from the building. It is considered that a low number of crevice dwelling species are likely to use the external features of the house and potentially individual serotines would utilise the gable end. It is recommended that further bat surveys are conducted in May – August. It is, however, considered that the initial bat survey provides a good initial assessment of the bat species using the site and which bat species would be present in the local area.
- 4.9 According to Bat Conservation Trust guidelines (2016), the house and outbuilding are classified as a 'confirmed' roost which means that three dawn emergence/dusk re-entry surveys are required to be carried out between May and September with at least two of these surveys to be carried out between May and August. The confirmation of the building as a roost is due to the presence of droppings in one of the voids and the emergence of a single common pipistrelle during the September survey.
- 4.10 No bats were recorded emerging from the tree on site or the annex building (section 4) of the site. However, as further surveys are recommended for the following bat season, it is recommended that one further survey on both of these features is undertaken on a precautionary measure.

- 4.11 No bats were recorded using the garage or other structures and these structures were considered to be of negligible suitability for bats and as such these can be removed without further investigation.
- 4.12 The proposals for the site are yet to be completed. However, it is considered that the proposal will include either the complete renovation of the house, which will involve the removal of the roof as re roofing is required, or demolition of the building.
- 4.13 Any development will have to consider that presence of bats. However, the nature of the development, that being a single house which is to be redeveloped into a single house, mitigation can be easily managed to ensure roosting opportunities for bats are provided in the new/renovated house. As such it is considered that the favourable conservation status of bats in the local area can be maintained with suitable mitigation strategy.
- 4.14 Mitigation would involve the use of bat tubes within the building. This would involve the use of bat tubes which provide new roosting opportunities within the building, without providing bat access into the building itself. These features reflect the crevices that are exploited by species such as pipistrelle bats as well as species such as serotine bats.
- 4.15 These tubes should be the Schwegler 2FR tubes which can be interconnected or the Habibat Bat Boxes, again fitted boxes which lie flush with the wall. These tubes should be located in the eastern aspect of the new design or if the roof is redeveloped then three tubes /boxes inserted into the apex of the gable end. The following images below show how such structures can be incorporated into the building.

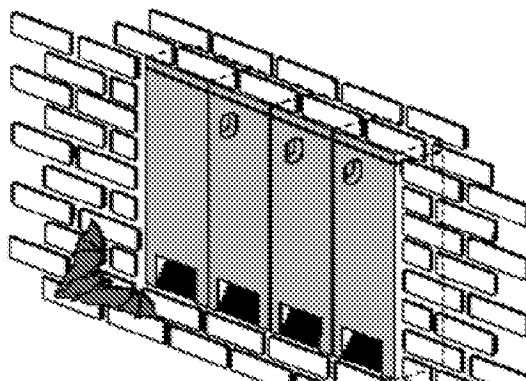


Figure 5: Schwegler 2FR tubes

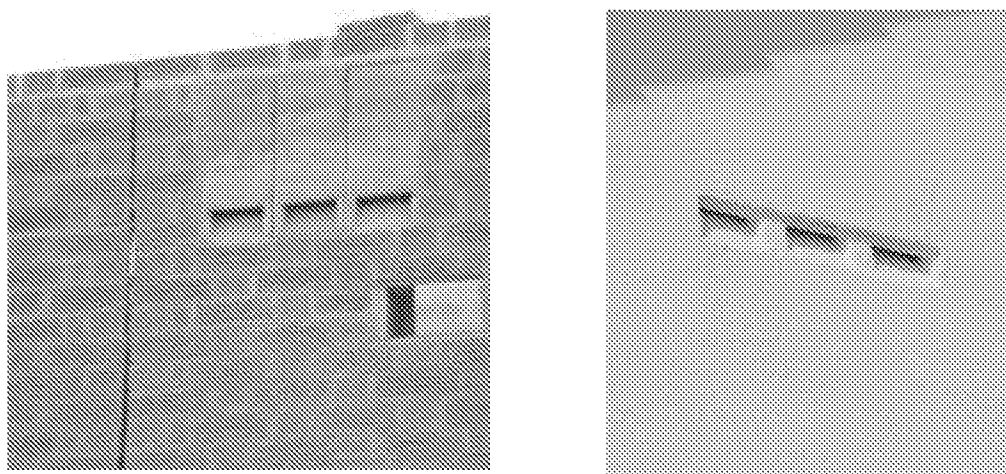


Figure 6: Images showing how bat tubes can be incorporated into the structure of the buildings.

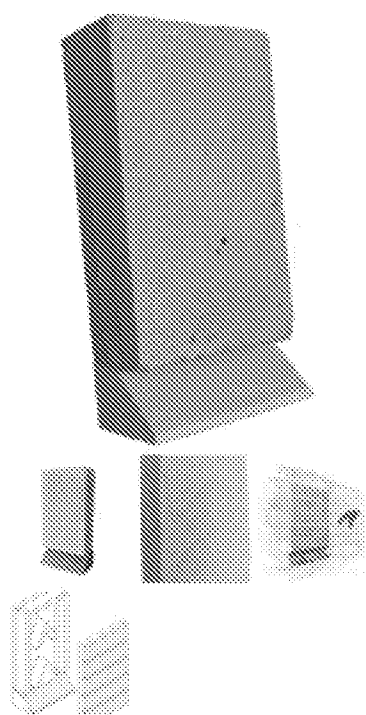


Figure 7: The Habibat Box which is similar to the Schwegler tube system.

- 4.16 It is considered that the use of bat boxes on the new build/renovated house will compensate for the loss of a roost by serotines and common pipistrelles. Further bat boxes are recommended to be used on the tree lines around the house as enhancements to the site. The final location and number of new features which can be used by bats will be determined after the final surveys have been completed. However, it is considered that any development of this scale and size can easily mitigate the loss of a roost and works will be undertaken under a Natural England bat licence.
- 4.17 The treelines and shrub edges on site are likely to provide some opportunities for foraging and commuting bats. These features also provide habitat connectivity to the wider landscape. It is recommended that these features are retained and enhanced where possible. Indeed during the survey a total of 4 species (common and soprano pipistrelles, long eared bat and serotine) were recorded. However, it must be noted that none of the serotines were using the garden or garden habitats for foraging. The serotines were recorded passing above the site commuting across the landscape.
- 4.18 Any proposed lighting scheme as part of the development will have to take into account bats in the surrounding area as well as the site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels, which can affect both their roosting and foraging behaviour. This needs to be taken into account with a sympathetic lighting scheme for the development. Recommendations include:
- Lighting should only be installed if there is a significant need;
 - Light levels should be kept low; the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
 - Baffled lights should be used, where light is directed towards the ground;

-
- Lighting should be avoided near treelines or hedgerows, with light angled away from these areas as bats use linear features such as treelines to commute across the landscape to forage; and
 - Lights should have focussed luminance on their target area, preventing light spill and pollution into other areas of the site and local area.

4.19 To enhance the local bat population and provide roosting opportunities, it is recommended that boxes should be hung on mature trees or buildings around the site.

Recommended boxes include:

- Schwegler 2F Bat Box – these boxes are attractive to small bats and can be hung on trees around the building. One should be used on the mature trees along the site boundary.
- Schwegler 2FN Bat Box - It slightly larger then the 2F and provide opportunities for the larger bats. One should be used on the mature trees along the site boundary.

4.20 Incorporating specially designed bat boxes into the design can enhance the habitat on site for bats. Bat boxes should be erected on the trees or buildings prior to works starting on site. Suitable bat boxes include a variety of wooden bat boxes, such as an improved cavity box, a double chamber bat box and other wood based varieties. Schwegler boxes have been recommended as these are long-lasting and require no maintenance.

4.21 Further enhancements for bats in the local area can be achieved through the use of native tree planting and landscaping within the development.

Badgers

4.22 No evidence of badgers, such as setts, latrines or snuffle holes, was identified at the time of the survey. No active or inactive badger setts were identified on site. Mammal paths were identified however, no evidence of which species caused these was identified.

4.23 Whilst no evidence of badgers actively using the site was found on the day of the survey, they may reside in the surrounding habitats and may visit the development site to forage. Foraging and commuting habitat is not legally protected, however safety

measures can be taken to ensure no badgers are harmed during the development process.

- 4.24 It is recommended that any excavations and trenches associated with construction are either covered at night or supplemented with a means of escape for any badgers that may fall into the excavation whilst foraging. Any open pipes or conduits laid should be blocked off each night to prevent badgers from entering them. If possible, construction work should only take place between dawn and dusk with no late evening work to reduce possible disturbance.
- 4.25 It is always recommended that badger update surveys are undertaken across the site prior to any development works or if there is a lapse in time between the survey and development as badgers may move onto the site in the intervening period. It is recommended that a badger survey should be conditioned as part of the permission.

Reptiles

- 4.26 The garden habitat did not support the tussocky grassland that is often associated with reptiles and the management regime does not benefit reptiles. The small vegetable patch, with scrub and a compost heap has some suitability yet is small and isolated from any other suitable habitat. As such it is considered that no further surveys are recommended across the site. If the vegetable patch area is to be removed then it is recommended that this area is sensitively strimmed in two stages to prevent any potential harm to reptiles which maybe present.
- 4.27 It is always recommended in gardens to maintain compost heaps or log piles on the edges of the site to provide habitat for reptiles and invertebrates.

Other Species

- 4.28 The site was not considered to support suitable habitat for dormice, great crested newts, water voles and otters and as such no further surveys for these species is recommended.
- 4.29 Birds are likely to use the trees and hedgerows on site for foraging and breeding. It is recommended that trees and hedgerows be retained where possible or replaced. Any

scrub or tree removal should be implemented outside the breeding bird season (March-September) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

General Site Enhancements

- 4.30 Any trees removed on site need to be replaced elsewhere on site in line with local planning policy. These should be replaced with native species of value to wildlife and can include hazel (*Corylus avellana*), beech (*Fagus sylvatica*), cherry (*Prunus sp.*), hornbeam (*Carpinus betulus*) and rowan (*Sorbus aucuparia*).
- 4.31 The hedgerows on site should also be enhanced where possible. Hedgerows help to provide a layering of different habitats that can be utilised by a wide variety of species. Species that can be planted include blackthorn (*Prunus spinosa*), hawthorn, hazel, holly (*Ilex aquifolium*), elder, alder buckthorn (*Frangula alnus*), guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*) and dogwood (*Cornus sanguinea*).
- 4.32 Newly formed areas of amenity grassland post-development could be supplemented by integrating a variety of native plant species. Patches of bare soil can be sown with wildflower seed mixes to increase the biodiversity of the site and also offer aspects of aesthetic appeal.
- 4.33 Nest boxes should be installed in order to provide new nesting opportunities for birds and to achieve ecological enhancements in line with policies set out by the LPA. These can be hung on the buildings or surrounding mature trees post development. Recommended boxes include:
- Schwegler 1N Deep Nest Box – give added nest protection from predators
 - Schwegler 1B Bird Box – general purpose bird box, suitable for many species
 - Schwegler Bird House – This is suitable for all common garden birds and may be attached to a building or wall so is suitable for siting behind climbing plant.

5.0 Conclusions

- 5.1 The site does not lie within any statutory or non-statutory designated sites. It is considered unlikely that the development will cause adverse effects to nearby designated sites or the surrounding landscape due to the scale of the development and the distance from these areas.
- 5.2 The majority of the habitats on site are common and widespread throughout the local area and the UK as a whole. The most ecologically valuable habitat on site is considered to be the tree lines and shrub edges around the site.
- 5.3 The house and attached outbuilding are considered to have high roosting bat potential due to the presence of gaps under hanging tiles, lifted roof tiles and gaps between the soffit board and the walls. Old bat droppings, probably serotine, were found at the gable end of the main void of the house. Three dusk emergence/dawn re-entry surveys should be carried out between May and August/September.
- 5.4 One dusk survey undertaken in September identified a single common pipistrelle emerge from the house and common and soprano pipistrelles, serotines and long eared bats using the site or flying over the site. As such it is considered that a good baseline has been established and that mitigation measures suggested would ensure that the favourable conservation status of bats in the local area would not be impacted upon by the redevelopment of the site. Further surveys will provide sufficient information to inform a licence application.
- 5.5 Bats are likely to use the treelines and shrub edges on site for foraging and commuting. Therefore these should be retained within the scheme and enhanced where possible. Indeed the emergence survey identified several species using these features.
- 5.6 No evidence of badgers was found on site at the time of the survey. Badgers may use the site for foraging and so should be considered during construction works. A badger update survey is recommended before works begin.

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- 5.7 Nesting birds may use the trees and hedgerows on site. It is recommended that clearance work on site be undertaken outside of the breeding bird season (March-September inclusive) or immediately after a nesting bird check by a suitably qualified ecologist.
- 5.8 Owing to a lack of suitable habitat, the site is not considered to be constrained by other protected species, including reptiles, great crested newts, dormice, otters or water voles.
- 5.9 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post development.

6.0 References

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Langton, T.E.S., Beckett, C.L. & Foster, J.P. (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

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

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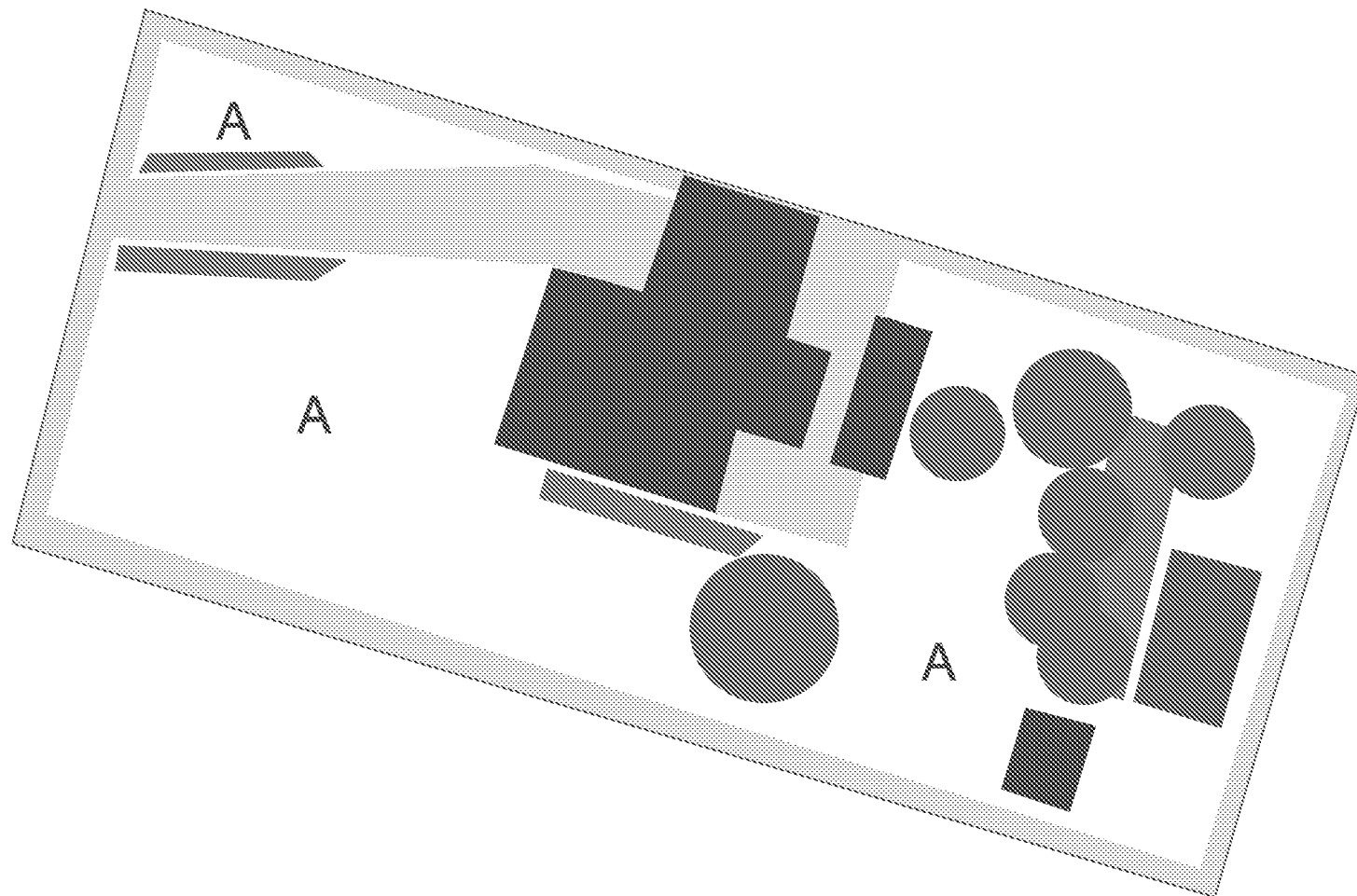
Wilson, G.J., Harris, S. & McLaren, G. (1997) *Changes in British badger population, 1988-1997*. People's Trust for Endangered Species, London.

Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Phase 1 Habitat Map



Key

	Building
	Amenity grassland
	Scattered trees
	Ornamental tree line
	Hard standing
	Ornamental planting
	Allotment planting
	Site boundary

Site: Middleton House, Middleton-on-Sea

Client: Urbanista

Surveyors: A. Tamblyn

Date: 08/09/2016

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ecology
partnership

Appendix 2: Photos

Photo 1: The western side of the house. The soffit board supported a hole in this end, however, no bats seen to emerge in September survey



Photo 2: The garage negligible potential to support roosting bats.



Photo 3: Inside the garage no evidence of roosting bats



Photo 4: Inside the converted roof



Photo 5: The small unconverted void to the very eastern aspect of the house. A total of 5 bat droppings, considered to be from serotine bats, were identified on the gable end wall

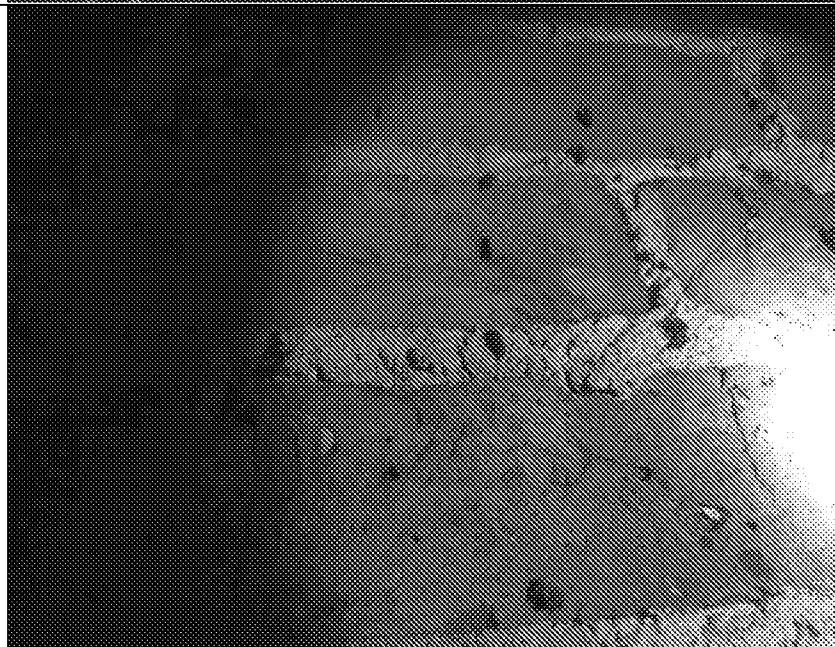


Photo 6: the eastern gable end. One common pipistrelle emerged from this location during the September survey



Photo 7: The outhouse connected by a covered glass fronted flat roofed walk way.



Photo 8: The roof void inside the outhouse. No evidence of roosting bats.



Photo 9: An over view of the garden habitat



Photo 10: The rear garden

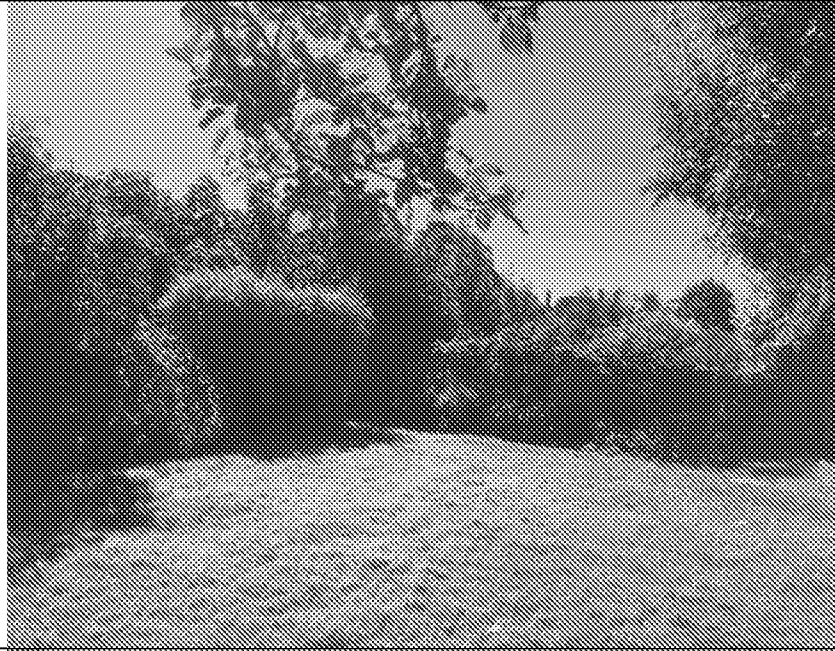


Photo 11: The small area of old vegetable patch and compost heap



Photo 12: The mammal path across the southern aspect of the garden.



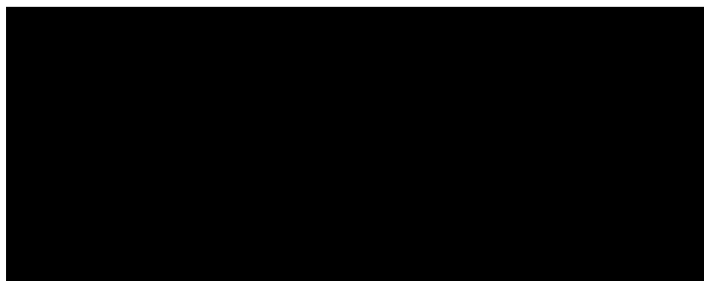
The Ecology Partnership Ltd

Dorset House

297 Kingston Road

Leatherhead

KT22 7PL



Approved: Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS

Date: 04/10/2016