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Preliminary Ecological Appraisal and Phase 1 Habitat Survey

Land at Burndell Road, Yapton, West Sussex

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Report Summary

1. The Ecology Co-op has been commissioned by Crayfern Homes to undertake an Extended Phase 1 Habitat Survey of Land at Burndell Road, Yapton, West Sussex. A site walkover survey visit was carried out on the 21st February 2018, to map the habitat types and evaluate the site for its potential to support EU and UK protected species. The purpose of this report is to record the findings of the survey and identify potential ecological constraints to a proposed new residential development.
2. This survey was undertaken by Jess Burkitt, BSc (Hons), GradCIEEM and Emma Baker, MSc, GradCIEEM.
3. The site is a large field of unmanaged dense, tussocky improved grassland with species poor hedgerows, scattered trees and a wet ditch running along the southern and western boundaries. There are some scattered patches of scrub along the boundaries of the site.
4. Further surveys and/or mitigation measures are required for reptiles, bats, great crested newts and nesting birds. Full details are outlined in Section 4 of this report.
5. In addition, if any protected species are found during the construction process, work must be stopped immediately, and an ecologist must be contacted immediately for advice.

This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an Extended Phase 1 Habitat Survey of Land at Burndell Road, Yapton, West Sussex by Crayfern Homes. This report presents the findings of a walkover survey undertaken by Jess Burkitt, a graduate member of the Chartered Institute for Ecology and Environmental Management (GradCIEEM) and Emma Baker, GradCIEEM on the 21st February 2018. It provides details on the potential for any protected species and/or habitats to be present at the site and provides an assessment of the potential ecological constraints to the proposed residential development. Recommendations for further surveys that are likely to be required to inform a planning application and any required Ecological Impact Assessment (EclA) of the proposal are provided. Where appropriate, measures to avoid, mitigate and/or compensate for impacts are outlined.

1.2 Background

The site is located within a residential area off Burndell Road in Yapton, West Sussex. The proposed development site is a field surrounded by agricultural land to the south and west and residential areas to the north and east. There are species poor hedgerows and scattered trees bordering the site with fence lines along the eastern, northern and part of the southern boundaries. The main body of the site is made up of improved grassland with little diversity and patches of scrub along the field edges. The central grid reference for the site is S984028. Figure 1 shows the boundary of the site.

The proposed development/project includes the 45 residential properties with associated gardens and parking.



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red. Images produced courtesy of Google maps (Map data ©2018 Google).



Figure 2. The proposed layout of the development within Land at Burndell Road, Yapton, West Sussex. Image produced courtesy of OSP Architecture.

1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna and invertebrate species and current nature conservation planning policy is outlined in Appendix 1 of this report.

2 METHODOLOGY

The methodology used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal (CIEEM 2017)¹.

2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested from the Sussex Biodiversity Records Centre (SxBRC) within a radius of 2km of the site.

¹ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.



A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats, dormice) in the wider landscape around the site. The connectivity of the site to these features, buildings and other semi-natural habitats such as grassland and heathland are also relevant to bats, great crested newts and reptiles.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and EPS licences granted in relation to the survey site.

2.2 Phase 1 Habitat Survey

A site walkover survey was undertaken on the 21st February 2018, during which the habitats contained within the site were described and evaluated in accordance with standard Phase 1 Habitat Survey Methodology². The dominant species and indicators of important habitat types such as ancient woodland or unimproved grasslands, were recorded.

A phase 1 habitat survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of the Phase 1 survey is to provide, relatively rapidly, a record of the vegetation and wildlife habitats present over large areas of countryside. The habitat classification is based principally on vegetation, augmented by reference to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat.

Data is gathered through a site walk-over survey and use of on-line aerial photography to broadly categorise the habitats present using the JNCC Phase 1 classifications. The results are presented as a map showing the distribution of habitat categories across the site. Target notes are used to describe specific features of biodiversity interest and record indicator species where appropriate. In addition to this, notable habitats, such as local and national Biodiversity Action Plan habitats are highlighted.

The Phase 1 Survey methodology is a recognised tool for initial scoping of potential ecological constraints and identifying potential impacts as part of the planning application process.

As part of the 'Extended' Phase 1 Habitat Survey, the site features were evaluated for their potential to support legally protected species and observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded. Details of the preliminary survey methods for each legally protected species are given below.

2.3 Badgers

Habitats within the site and surrounding areas were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths, foraging

² JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit. Joint Nature Conservation Committee, Peterborough.



marks, were recorded.

Any limitations to the survey for badgers are set out in Section 3.12.

2.4 Bats

Bats can use a wide range of features including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy, and loose bark.

Trees, buildings, and other structures were broadly assessed for their potential to support roosting bats and further surveys are recommended as appropriate.

The potential for roosting bats for each feature, or group of features was assessed as either negligible, low, moderate, or high, in accordance with the Bat Conservation Trust Survey Guidelines (Collins, J.(ed.) (2016)³. Any evidence confirming the presence of bats that was found was clearly recorded including photos and samples (e.g. droppings) where appropriate. Further surveys are recommended where necessary.

2.5 Breeding Birds

The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern (Eaton *et al.* 2015)⁴ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981). Further surveys are recommended as appropriate.

2.6 Dormice

The site was broadly assessed for its potential to support hazel dormouse. This included use of on-line mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub and extensive hedgerow networks. Further surveys are recommended as appropriate in accordance with best practice guidance (Bright *et al* 2006)⁵.

2.7 Great Crested Newt

A desk study was undertaken to identify ponds within 500m of the site. Where access permission was

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

⁴ Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, Leigh., Musgrove, A., Noble, D., Stroud, D., Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108, pp 708-746.

⁵ Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The dormouse conservation handbook 2nd Ed.* English Nature, Peterborough.



granted, or ponds could be viewed from public roads or footpaths, the ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (H.S.I.) (Oldham et al 2000)⁶.

Further surveys are recommended as appropriate, in accordance with best practice guidance (English Nature 2001)⁷.

Any survey or access limitations are clearly set out in Section 3.12.

2.8 Reptiles

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub). The common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*) grass snake (*Natrix natrix*) and adder (*Vipera berus*) are widespread species that can be found in any of these habitats, whereas smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) have much more restricted and isolated populations on lowland heathland and sand dunes.

2.9 Riparian wildlife

Any watercourses identified during the desk study or field survey were assessed for their suitability to support otter, water vole and American mink.

2.10 Other notable species

The site habitats were broadly assessed for their potential to support species of principle importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse, hedgehog, brown hare, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with specific attention paid to features such as standing dead-wood, wet flushes, bare earth banks and botanically rich areas.

3 BASELINE CONDITIONS

3.1 Designated Sites

There are no designated sites within 2km of the nearest site boundaries. There are parcels of broadleaved woodland in the surrounding area (see areas of dark green colouring in Figure 3). There are no granted EPS licenses for mitigation projects within 1km of the site boundaries. The closest EPS licence to the site concerns common pipistrelle bats at 3.6km away from the nearest site boundary.

⁶ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

⁷ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

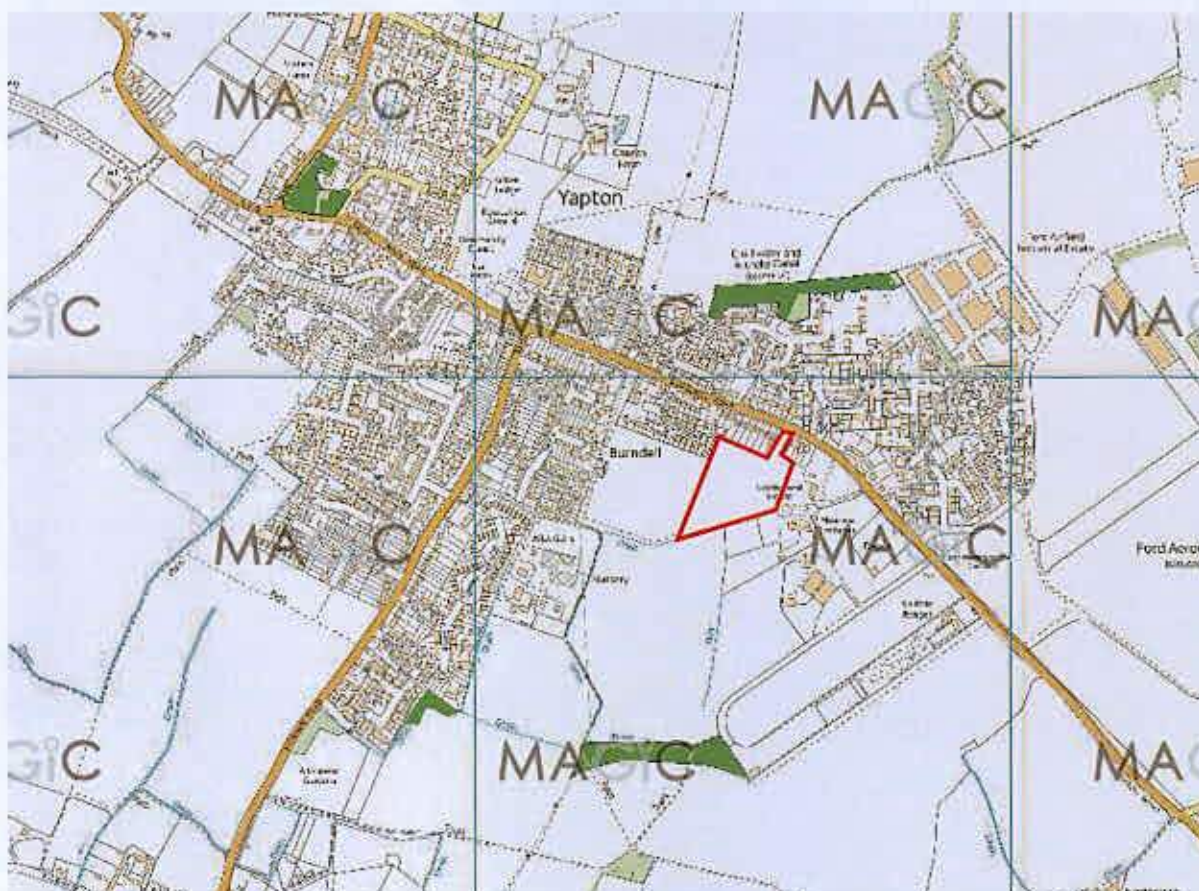


Figure 3. Designated sites within a radius of 2km of the application site with the proposed site outlined in red. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Phase 1 Habitats

Table 1 below lists the Phase 1 Habitat categories found at the site, with target notes on specific features of interest and the general species composition. Note that detailed information on buildings and ponds with respect to bats and great crested newts are presented in the following sections. The Phase 1 Habitat Map for the site and key to the standard mapping symbols used are presented in Figure 4 and 5.

Table 1. The Phase 1 habitats contained within the site.

Habitat type	JNCC Code	Area(Ha)/ Length (meters)	Target note including general species composition
Scrub-scattered	A2.2		There are scattered bramble <i>Rubus fruticosus</i> and nettle <i>Urtica dioica</i> scrub patches along the field edges of the site. Other species scattered along the boundaries include lords and ladies <i>Arun maculatum</i> , cleavers <i>Galium aparine</i> , ragwort <i>Senecio sp.</i> , ivy <i>Hedera helix</i> , docks <i>Rumex spp.</i> , hogweed <i>Heracleum sphondylium</i> and creeping thistle



			<i>Cirsium arvense</i> .
Improved grassland	B4		The main body of the site comprises dense, tussocky improved grassland with the following species: Yorkshire fog <i>Holcus lanatus</i> , perennial rye grass <i>Lolium perenne</i> , creeping bent <i>Agrostis stolonifera</i> , cocks foot <i>Dactylis glomerata</i> , false oat grass <i>Arrhenatherum elatius</i> , common mouse-ear <i>Cerastium fontanum</i> , red clover <i>Trifolium pratense</i> , cut-leaved cranesbill <i>Geranium dissectum</i> , cow parsley <i>Anthriscus sylvestris</i> , hogweed <i>Heracleum spp.</i> , oak saplings <i>Quercus spp.</i> , common sorrel <i>Rumex acetosa</i> , ragwort <i>Jacobaea vulgaris</i> , ribwort plantain <i>Plantago lanceolata</i> , dandelion <i>Taraxacum officinale</i> , mosses <i>Bryophyta spp.</i> , creeping thistles <i>Cirsium arvense</i> , daisy <i>Bellis perennis</i> , and broadleaved docks <i>Rumex obtusifolius</i> .
Broadleaved Parkland/scattered trees	A3.1		There is a line of trees and shrubs along the ditch situated along the southern boundary. Species include an ivy covered oak <i>Quercus spp.</i> , ash <i>Fraxinus excelsior</i> , field maple <i>Acer campestre</i> , elder <i>Sambucas nigra</i> and hazel <i>Corylus Avellana</i> stands. There is an ash tree with holes and also covered in ivy. Trees are scattered along the western boundary of the site with a row of poplar spp. covered in dense ivy.
Intact hedge-species poor	J2.1.2		The hedgerow along the eastern boundary of the site is species poor and consists mainly hawthorn <i>Crataegus monogyna</i> , and blackthorn <i>Prunus spinosa</i> with some brambles within the hedge. The base of the hedgerow consists bramble, common nettle, broadleaved docks, ivy, cleavers <i>Galium aparine</i> , ragwort, cow parsley, false oat grass.
Hedge with trees-species rich	J2.3.1		There is a hedge with trees just outside the western boundary of the proposed development site, bordering an arable field on the other side of the ditch. Species identified includes hazel, ivy, bramble, oak, elder, rose <i>Rosa spp.</i> , hawthorn, blackthorn and dogwood <i>Cornus sanguinea</i> . This hedgerow is outside of the proposed development site but borders the ditch.
Fence	J2.4		There is a close-board fence line along part of the southern and western boundaries of the site. There is a wire fence line along the eastern boundary and part of the northern boundary.
Dry ditch	J2.6		There is a ditch along the western and southern boundaries of the proposed development site. The ditch holds water in places however some sections were dry. The banks are approximately 1.5m high and quite steep. The banks are devoid of vegetation with some visible large mammal



Figure 4. Phase 1 map of the site set onto aerial imagery.

Polygons



A2.1

Scrub - dense/
continuous



A2.2

Scrub - scattered



B4

Improved grassland

Lines



A3.1

Broadleaved Parkland/
scattered trees



	J2.1.2	Intact hedge - species-poor
	J2.3.1	Hedge with trees - native species-rich
	J2.4	Fence
	J2.6	Dry ditch

Figure 5. Key for Phase 1 habitat map



Figure 6. The grassland within the proposed development site.



Figure 7. The wet ditch running along the southern boundary of the site.



Figure 8. The scrub along eastern boundary of the site.

3.3 Badgers

There are a number of mammal runs across the site and leading into the site from adjacent gardens. No signs of any badger activity were seen during the survey assessment, though there are habitats of value for this species within the site and surrounding landscape. It is likely that if any setts were situated within 30m of the site boundary, then some evidence of badger activity would have been observed.

Records of badgers are not provided by the records centre, due to the sensitive nature of this information.

3.4 Bats

There are no buildings within the proposed site. There are a number of trees along the boundaries of the site that may have roosting potential for bats. The hedgerows, trees and grassland along with the wet ditch offer suitable habitat for foraging and commuting bats.

The Sussex Biodiversity Record Centre (SxBRC) provided 21 bat records in the search area comprising 9 identified species within the search area: serotine *Eptesicus serotinus* – 3 records, common pipistrelle *Pipistrellus pipistrellus* – 5 records, soprano pipistrelle *Pipistrellus pygmaeus* – 1 records, brown long-eared bat *Plecotus auritus* – 1 records, Nathusius's pipistrelle *Pipistrellus nathusii* – 2 records, Noctule bat *Nyctalus noctula* – 1 record, Natterer's bat *Myotis nattereri* – 1 record, Western Barbastelle *Barbastella barbastellus* – 4 records and unspecified bat records (8 records). The closest of these was



natterers, noctule and pipistrelle bat record approximately 245m from the site, dated from 2000-2010. Barbastelle bats (an annex II species) were recorded in 2015 1.5km and 1.7km west of the nearest site boundary.

3.5 Breeding Birds

All of the scrub, saplings, and semi-mature trees have the potential to support a variety of common nesting birds. The dense, tussocky grassland within the site offers some cover for ground nesting birds however, the field appears to be used by dog walkers, which creates disturbance within the proposed site.

SxBRC provided numerous bird records for the search area concerning a total of 258 species. Most of these species are relatively common and widespread, but the list includes 36 species of principle importance for conservation (S41 NERC Act 2007), and 58 species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, 30 species are red listed on the Birds of Conservation Concern. Records for lapwing *Vanellus vanellus* in 2010, 2011, 2014 and 2016, barn owl *Tyto alba* in 2010, 2011, 2013, 2014 and 2016, skylark *Alauda arvensis* in 2014, 2015, 2016 and 2017, and nightingale *Luscinia megarhynchos* in 2011 were identified within 2km of the proposed development site.

3.6 Dormice

The hedgerows within the site provide some suitable habitat for dormice with species including hazel, blackthorn, hawthorn, bramble scrub and oak. The hedgerows bordering the site are connected to hedgerows in the surrounding landscape however, the connectivity is poor and there are no parcels of woodland connected to this hedge network in the wider landscape.

While no records of this species were provided by SxBRC, this species is known to be under-recorded and could occur in any suitable habitat.

3.7 Great Crested Newts and other amphibians

A single pond was identified 8m from the boundary of the proposed site and no other ponds were identified within 500m of the proposed site from the site visit or studying background mapping and aerial imagery (see Figure 9 & 10). The pond is located within a garden surrounded by trees and bramble scrub and there is a drain leading from the garden into the pond which may be used for water run-off from the property and gardens. It appears that this pond may only have been created in recent years and it is not visible on aerial imagery.

A Habitat Suitability Index (HSI) assessment was carried out on the pond and it scored 'below average' (see Appendix 2), although access to all of its banks were not possible. The terrestrial habitat within the proposed site offers suitable habitat for foraging and commuting great crested newts.

SxBRC provided 59 amphibian records in the search area. This included 13 records for great crested newt *Triturus cristatus*, 15 records for smooth newt *Lissotriton vulgaris*, 5 records for palmate newt *Lissotriton helvetica*, 21 records for common frog *Rana temporaria* and 5 records for common toad *Bufo*



bufo. The closest record for great crested newt was at 933m from the boundary of the site, dated 2002.

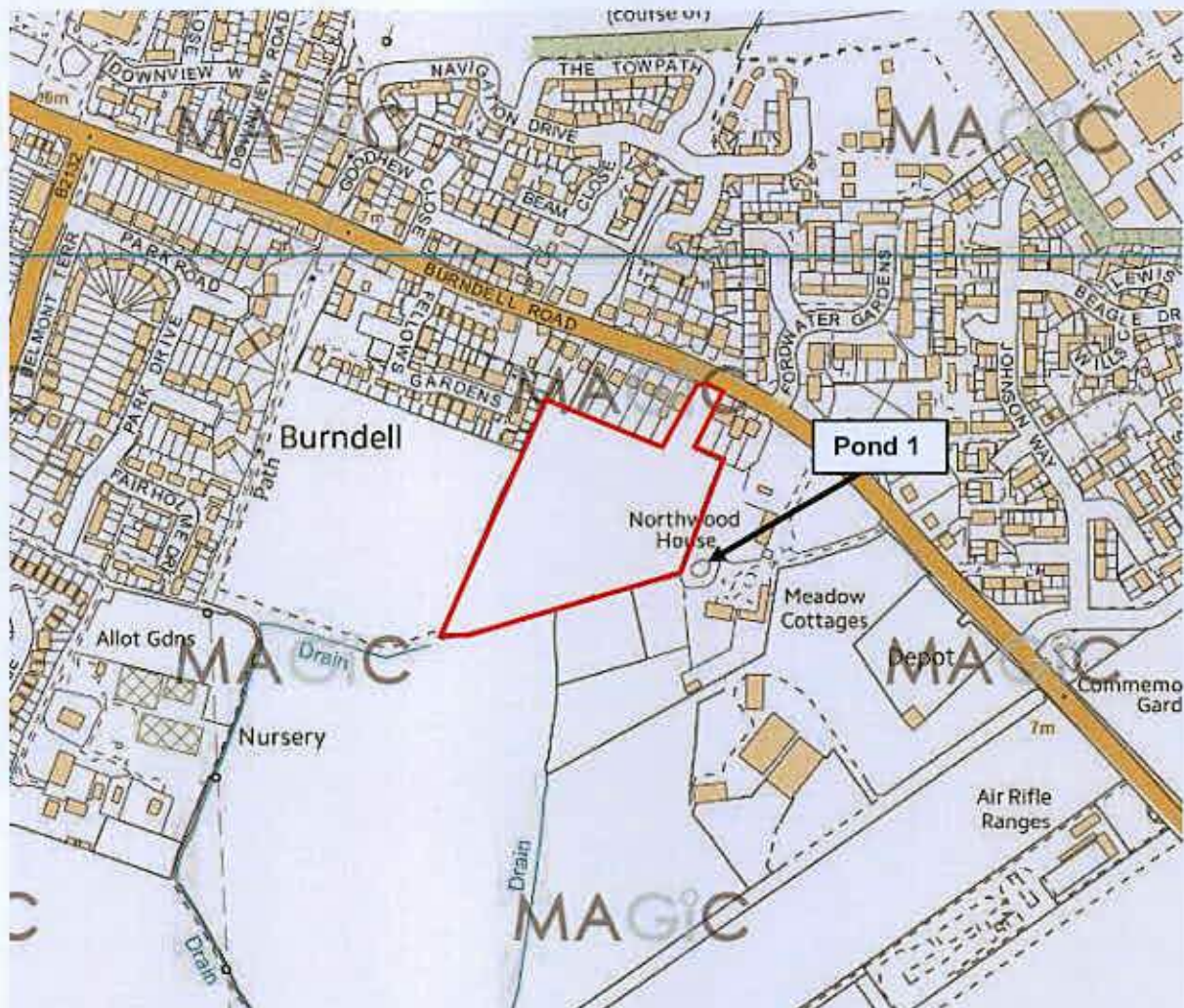


Figure 9. Map showing the location of the single pond within 500m of the proposed site.



Figure 10. Pond 1 adjacent to the proposed site.

3.8 Reptiles

The grassland habitat present within the proposed development site is potentially suitable for common reptile species, particularly grass snake and slow worm. The dense tussocky grassland, piles of wood and cut brash and dense scrub bordering the site offer suitable cover for foraging reptiles. There is a pond adjacent to the proposed site and ditches bordering the site which may offer suitable habitat for foraging grass snakes.

SxBRC provided 13 reptile records in the search area. The closest of these was for common lizard at 259m from the boundary of the site, dated 2002-2010.



Figure 11. The dense, tussocky grassland across the site.



Figure 12. One of the piles of cut brush and dead wood within the site which could be used as a hibernaculum by some reptiles.



3.9 Riparian wildlife

There is a wet ditch along the southern and western boundaries of the proposed site. The ditch is dry in places however it does hold water. The banks of the ditch measure 1.5m deep and the water did not appear to be very deep. The ditch was assessed for its suitability to support water voles. No potential burrows, feeding remains or latrines were observed and the suitability of this ditch for this species appeared to be low given the lack of taller succulent vegetation near to the banks and the lack of water.

SxBRC provided 1 record of water vole in the search area and this record was at 1.5km from the boundary of the site, dated in 1997.

3.10 Invasive non-native species

No evidence of invasive non-native species was found during the walkover survey.

SxBRC provided 140 records of non-native birds, 108 records for flowering plants, 1 records for mammals in the search area. The majority of the bird records are recorded at the same site, Yapton Wicks Farm and the closest of these was at 1.3km from the boundary of the site, dated 2000. The closest record for flowering plants is dated in 2013 at 430m from the nearest site boundary. Records for Eastern Grey Squirrel *Sciurus carolinensis* in 2007 and 2010 were identified and the closest record is at 290m from the nearest site boundary.

3.11 Other notable species

SxBRC identified 37 records for West European Hedgehog *Erinaceus europaeus* between 1998 and 2017, 2 records for brown hare *Lepus europaeus* in 2003 and 2013 and 1 record for harvest mouse *Micromys minutus* in 2000-2010. There is some scrub habitat and piles of cut brash and wood within the proposed site which offers suitable cover for foraging hedgehogs and brown hare. The proposed site does not provide suitable habitat for harvest mice, which favors very tall grassland, sedges and reeds.

3.12 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

3.12.1 Great Crested Newts

Full access was not available to Pond 1 at the time of survey, though close access to the bank nearest the development site boundary was available.



4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Designated sites

The proposed site is outside of the zone of influence from all designated sites and, based on this, there are no identified mechanisms of impact on designated sites as a result of the proposed residential development.

4.2 Habitats

The proposed development will result in the direct loss of dense, tussocky improved grassland and some scrub contained within the site. It is understood that there are no trees or hedgerows being removed from the boundaries of the site, as there is an existing access route. The hedgerows and ditches will be enhanced as part of the proposed residential development.

4.3 Badgers

Since there is high potential for badgers to be foraging and commuting across the site, the following measures are recommended to prevent harm to badgers during construction.

- A pre-construction walkover survey should be undertaken in advance of construction/site preparation to determine whether new setts have been established
- All food or waste food must be stored securely overnight
- Tools and any hazardous materials must be stored securely
- Deep excavations must be either covered overnight or a ramp placed in them to provide a means of escape

4.4 Bats

The dense, tussocky grassland within the site and hedgerows bordering the site are likely to be used by foraging and commuting bats as part of a wider resource across the landscape. Bat activity surveys are recommended to gain a better understanding of the importance of the site to bats and potential impacts of the development on the existing bat population using the site. In accordance with current survey guidelines and considering the potential value of the site and its context, this should include a minimum of two walked transect surveys within the active season (April to mid-October).

There are at least 3 trees along the boundaries of the proposed site that were identified to have features with low to moderate potential to support roosting bats. In accordance with Bat Conservation Trust Guidelines, it is recommended that a single emergence survey is carried out on the suitable trees with static surveyors and a night vision camera.

As the site may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lighting is considered. The proposed development should include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).



4.5 Breeding Birds

All the hedgerows, scrub and trees along the site boundaries have a high potential to support a variety of common nesting birds. It will be essential for any future development to consider the nesting bird season and any vegetation removal and/or building demolition should be timed outside of the nesting bird season (typically 1st March to 31st August), unless features are first searched by a suitably qualified ecologist and no active nests are found.

4.6 Dormice

The proposed development does not result in significant impacts on the hedgerow and scrub habitats bordering the site. The connectivity to surrounding suitable habitat is poor and there are no parcels of woodland in the surrounding landscape that could support a population of dormice. SxBRC did not identify any records for dormice within 2km of the proposed site. The hedgerows and trees are being retained as part of the proposed development and therefore the proposed development does not result in significant impacts on the hedgerows and trees bordering the site. As such, no further surveys are required.

4.7 Great Crested Newts

Pond 1 scored 'below average' on the Habitat Suitability Index (HSI) assessment however the terrestrial habitat surrounding the pond and within the proposed development site is suitable to support foraging and commuting great crested newts.

An appropriate approach to assess this pond would be to gain access from the owners of the neighbouring property and carry out an environmental DNA (eDNA) assessment to identify likely presence/absence of great crested newts. An eDNA assessment is made by taking at least 20 water samples from a pond between mid-April and the end of June and then sending the samples to a laboratory for assessment for the presence of great crested newt DNA. If great crested newts are identified either following the first presence/absence survey or following the eDNA assessment, then a population assessment would be required.

The population survey follows best practice guidelines as described with Natural England's 'Great Crested Newt Mitigation Guidelines'. In accordance with these guidelines, six surveys are carried out on evenings when the ambient temperature is not less than 5 degrees Celsius between mid-March and mid-June with three surveys being carried out between mid-April and mid-May. This timing ensures that surveys are carried out when newts are most likely to be breeding, thus maximising the potential to identify newt presence and establish a population.

If great crested newts are identified, then an appropriate mitigation strategy will be required. The mitigation strategy should outline both how the species would be protected throughout the development process and how the development would provide enhancements to maintain and grow the population.



4.8 Reptiles

The proposed development would result in the loss of suitable reptile habitat at the site. This is highly likely to impact on reptiles and a survey is therefore recommended to establish the species and population size of reptiles present (if any). The standard approach to reptile presence/absence surveys require a minimum of eight site visits, first to set out artificial refuges ('reptile mats'), followed by seven survey visits. The optimal months for survey are April, May and September but they can be undertaken at any time from April to October, provided weather conditions are suitable.

If the presence of reptiles is confirmed through such a survey, a reptile mitigation strategy is likely to be required by the planning authority. This would probably involve the capture and translocation of reptiles to a suitable receptor site nearby.

4.9 Other notable species

The site offers some suitable habitat for hedgehogs and records for this species were identified by SxBRC. No further surveys are recommended and at present there are no set survey guidelines for the survey of hedgehogs. However, a precautionary approach is recommended. A suitably qualified ecologist should pull the log and brash piles apart by hand, with all suitable material that could be used as a refuge removed from the site or placed into a designated 'receptor area'. If any hedgehogs are identified in hibernation (between November and early March usually), then either the area where the hedgehog is found should remain undisturbed or at the discretion of a suitably qualified ecologist, it may be possible to move the animal with the material that it is hibernating in to a safe location.

4.10 Designated Sites

The site is outside the zone of influence from all designated sites and, based on this and the small scale of the development, there are no identified mechanisms of impact on designated sites as a result of the proposed development.

4.11 Conclusions.

The proposed development would see the loss of dense, tussocky improved grassland, large log and brash piles and some scattered scrub, which may support reptiles and great crested newts. The hedgerows, trees and shrubs will be retained as part of the development and the ditches along the boundaries are to be enhanced.

Opportunities exist to offset impacts through the creation and enhancement of new and existing habitats, for example bat roosting and bird nesting can be created through the installation of permanent roosting/nesting features into a number of the proposed new residential dwellings and garages.

The site would benefit from native shrub planting along the retained boundary hedgerows and tree lines. The hedgerows consist of hawthorn and blackthorn along with some hazel and oak. Therefore, planting species such as dogwood *Cornus sanguinea*, wayfaring-tree *Viburnum lantana*, spindle *Euonymus europaeus*, wild privet *Ligustrum vulgare*, and guelder rose *Viburnum opulus*, will provide a greater



variety and an increased food source for birds, small mammals and invertebrates.

If any protected species are found during the proposed work, work should be stopped immediately, and an ecologist must be contacted for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op, info@ecologyco-op.co.uk, www.ecologyco-op.co.uk, Office: 01798 861800.



APPENDIX 1 –Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The 'Birds Directive', 'Habitats Directive' and 'Natura 2000 Sites'.

The Council Directive 79/409/EEC on the Conservation of Wild Birds ("the Birds Directive") sets a framework for the protection of wild birds. Under the directive, several provisions are made including the designation and protection of 'Special Protection Areas' (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the "Habitats Directive") directs member states of the EU to take measures to maintain favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the directive (for example Bechstein's bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austropotamobius pallipes*. Together with 'Special Areas of Conservation' (SPAs), designated under the Birds Directive, SACs form a network across Europe of protected areas known as the 'Natura 2000 sites'.

Annex IV lists species in need of more strict protection, these are known as "European Protected Species (EPS)". All bat species, common dormice *Muscardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The 'Habitats Regulations'

The Conservation of Habitats and Species Regulations 2010 (the "Habitats Regulations") is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 ("the 1994 regulations") in England and Wales.

'Natura 2000' sites receive the highest level of protection under this regulation which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where 'likely significant effects on the integrity of the site are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to;

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb wild animals of such species;
- Deliberately take or destroy their eggs (where relevant);
- Damage or destroy a *breeding or resting place* of such an animal;
- Possess, control, sell or exchange any live or dead animal or plant, of such species;
- Deliberately pick, collect, cut, uproot or destroy a wild plant of such species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for



specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- A licence can be granted for the purposes of "preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment" (Regulation 53 (2) (e)).
- A licence can be granted if "there are no satisfactory alternatives" to the proposed action.
- A licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended.

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.
- Disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrion w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).

Natural Environment and Rural Communities (NERC) Act (2006)



The NERC Act (2006) created the statutory nature conservation body Natural England, and places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Protection of Badgers Act (1992)

The Badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a Badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting badgers between the end of November and the start of July.

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2012) sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

The NPPF states that the wider benefits of an ecosystem should be recognised, and the presence of a protected species is a material consideration for a development proposal (Circular 06/2005, 2005).

In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- Minimising impacts on existing biodiversity and habitats,
- Providing net gains in biodiversity and habitats, wherever possible,
- establishing coherent ecological networks that are more resilient to current and future pressures.

UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK's response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government's response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for



protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade. Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK's leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the 'Red', 'Amber' and 'Green' lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every 5 years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2015 (Eaton et al, 2015), which provides an up to date assessment of the conservation status of birds in the UK.

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APPENDIX 2 –Great crested newt 'Habitat Suitability Index' values

Table 1. HSI calculation for Pond 1 assessed during the survey.

	Pond 1	
NGR	SU985027	
SI attribute	SI value	Notes
Location	1.00	SE England
Pond area	0.28	140m ²
Pond drying	0.50	Sometimes
Water quality	0.67	Moderate
Shade cover	1.00	50
Water-fowl	1.00	Absent
Fish presence	0.67	Possible
No. ponds	0.10	0
Terrestrial habitat	0.67	Moderate
Macrophytes	0.33	2%
H.S.I. value	0.52	'below average'



APPENDIX 3 Reducing impacts of artificial light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust⁸ should be considered while designing the lighting scheme. This includes the following measures:

Do not:

- provide excessive lighting. Use only the minimum amount of light needed for the task.
- directly illuminate bat roosts or important areas for nesting birds

Avoid:

- installing lighting in ecologically sensitive areas such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.
- using reflective surfaces under lights.

Do:

- consider employing a competent lighting designer who will apply the principals of providing the right light, in the right place, at the right time and controlled by the right system.
- minimise the spread of light to at, or near horizontal and ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required.
- consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures.
- consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- use temporary close-boarded fencing until vegetation matures, to shield sensitive areas from lighting.
- limit the times that lights are on to provide some dark periods. The task being lit often varies, for example roads are less used after 23.00hrs and car parks are empty. A lighting designer can vary the lighting levels as the use of the area changes reducing lighting levels or perhaps even switching installations off after certain times. This use of adaptive lighting can tailor the installation to suit human health and safety as well as wildlife needs.

⁸ Bat Conservation Trust (2014) Artificial Lighting and Wildlife - Interim Guidance: Recommendations to help minimise the impact artificial lighting. Available at: http://www.bats.org.uk/pages/bats_and_lighting.html



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End.
