



The Ecology Co-op

ENVIRONMENTAL CONSULTANTS

Building B, Lords Wood Barns, Petworth, GU28 9BS

Tel: 01798 861 800 – E-Mail: info@ecologyco-op.co.uk – Web: www.ecologyco-op.co.uk

Preliminary Ecological Appraisal

Site Name

Princess Royal Barracks Phase 5i

Issue Date

7th August 2023

Client

Vail Williams

Author

Rozel Hopkins

Project No: P5784

The Ecology Co-operation Ltd
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ
Company number: 8905527





Document Control

Issue No	Author	Reviewer	Issue Date	Additions/alterations	Notes
Original	Rozel Hopkins MSci (Hons)	Kate Priestman MCIEEM, CEnv	07/08/2023	N/A	

Conditions of use

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.

About the Author

This report has been prepared by Rozel Hopkins, a Consultant Ecologist at The Ecology Co-op, with 3 years experience. She has both a Level 1 bat survey license and a Level 1 great crested newt licence and as a Qualifying member of the Chartered Institute for Ecology and Environmental Management (CIEEM) is bound by their code of professional conduct.

About the Reviewer

This report has been reviewed by Kate Priestman, who is a Principal Ecologist with over twenty years' experience. Kate has undertaken bat survey work and reporting, and prepared European Protected Species licences for numerous schemes. As a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and a Chartered Environmentalist (CEnv), she is bound by CIEEM's code of professional conduct.



Report Summary

Purpose	The Ecology Co-op was commissioned by Vail Williams to undertake a Preliminary Ecological Appraisal of land at Princess Royal Barracks further to a proposal for the change of use of a museum building to a food store and creation of a new access road.
Context	The site comprises an old museum building with an associated car park, access road and area of acid grassland and heathland mosaic to the south-east. A barbed wire fence separates the car park from the museum building and grassland. The site borders a road at the south and the southern boundary is formed of a road verge.
Key findings	<p>The site lies adjacent to Deepcut Barracks North Site of Nature Conservation Importance (SNCI), which is selected for its heath and acid grassland habitats. The south-eastern section of the development site itself comprises of acid grassland and heathland mosaic, which may have high conservation interest, including protected and notable plant species, due to its proximity to the SNCI.</p> <p>Previous bat surveys carried out in 2015 found that the building contains a soprano pipistrelle low conservation roost. The building also has ‘moderate’ suitability to support other bat roosts. Two silver birch trees to be impacted by the proposals have ‘moderate’ suitability to support roosting bats.</p> <p>The site contains suitable habitats for breeding birds, reptiles, great crested newts and hedgehogs. Four waterbodies are located within 250m of the development site.</p>
Recommendations	<p>The following mitigation and compensation measures are proposed prior to and during construction:</p> <ul style="list-style-type: none"> • <u>designated sites</u>: pollution control measures during construction to avoid impacts to the nearby SNCIs • <u>habitats</u>: compensatory planting of new trees and sensitive management of existing scrub habitats • <u>bats</u>: sensitive lighting scheme in consultation with an ecologist • <u>badgers</u>: pre-commencement badger check • <u>breeding birds</u>: nesting bird check (if works are carried out between 1st March and 31st August) • <u>invasive species</u>: control of buddleia spread • <u>hedgehogs</u>: hand search and relocation during site preparation. <p>The following further ecological surveys are recommended:</p> <ul style="list-style-type: none"> • <u>botanical</u>: NVC survey of acid grassland-heathland mosaic habitat • <u>roosting bats</u>: three emergence/re-entry surveys of the old museum building, a tree climbing assessment or emergence surveys of two trees and a ground-level tree assessment of one tree • <u>great crested newts</u>: HSI assessments of four waterbodies • <u>reptiles</u>: presence/likely absence surveys using refugia.
Are further surveys required?	Yes



CONTENTS PAGE

1	INTRODUCTION	1
1.1	Purpose of the Report.....	1
1.2	Background.....	1
1.3	Policy and Legislation.....	3
2	METHODOLOGY	3
2.1	Desk Study.....	4
2.2	Field Survey.....	4
2.3	Badgers.....	4
2.4	Bats.....	5
2.5	Breeding Birds.....	5
2.6	Dormice.....	5
2.7	Great Crested Newt.....	6
2.8	Reptiles.....	6
2.9	Other Notable Species.....	6
3	BASELINE CONDITIONS	6
3.1	Designated Sites and Granted EPS Licences.....	6
3.2	Habitats.....	10
3.3	Badgers.....	14
3.4	Bats.....	15
3.5	Breeding Birds.....	18
3.6	Dormice.....	19
3.7	Great Crested Newts and other Amphibians.....	19
3.8	Reptiles.....	21
3.9	Invasive Non-native Species.....	21
3.10	Other Notable Species.....	21
3.11	Survey Limitations.....	22
4	IMPACT APPRAISAL	22
4.1	Designated Sites.....	22
4.2	Habitats.....	22
4.3	Badgers.....	23
4.4	Bats.....	23
4.5	Breeding Birds.....	24
4.6	Great Crested Newts.....	24
4.7	Reptiles.....	25
4.8	Invasive Non-native Species.....	25
4.9	Other Notable Species.....	25
5	CONCLUSIONS	26
	APPENDIX 1 – Wildlife Legislation and National Planning Policy	27
	APPENDIX 2 – Surrey Heath Borough Council Planning Policy	32
	APPENDIX 3 – Reducing Impacts of Artificial Light	1



1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a Preliminary Ecological Appraisal (PEA) of land at Princess Royal Barracks by Vail Williams. This report presents the findings of a walkover survey undertaken by Rozel Hopkins, a Qualifying member of the Chartered Institute of Ecology and Environmental Management and Natural England Level 1 Bat Survey and Level 1 Great Crested Newt Class Licence holder, on 28th June 2023.

It provides details on the potential for any protected/notable species and/or habitats to be present at the site and a simple assessment of the potential ecological constraints and opportunities in relation to the change of use of a museum building to a food store and creation of a new access road. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EclA) of the proposal are provided where necessary, and possible measures to avoid, mitigate and/or compensate for significant adverse effects are summarised. The potential to incorporate ecological enhancement measures as part of the scheme is discussed, in addition to any requirement to achieve biodiversity net gain.

This PEA report is designed to inform the client and their team (as appropriate) about the initial findings of the site walkover and desk study research in relation to the site proposals, highlighting the key ecological constraints and opportunities, and any further survey requirements.

1.2 Background

This site measures 0.82ha and is situated on the northern outskirts of Deepcut, Surrey GU16 6SJ. The site currently comprises an old museum building, associated car park and greenspace. It is situated on the edge of a new housing estate at Deepcut Barracks, surrounded by mature woodland at the east, south and west. The central grid reference for the site is SU 90622 57585. Figure 1 shows the boundary of the site.

The proposed development includes a change of use of the existing museum building to a convenience store, improvements to the existing car parking area and creation of a new access road into the site at the south (Figure 2).

The site, as part of a wider area, has been subject to a number of baseline and updated ecological surveys between 2009 and 2015 by AMEC and NPA^{1,2} These surveys were to inform a larger outline application for a major residential-led development of 1,200 new dwellings, which was subsequently approved in April 2014 (planning reference: 12/0546). Condition 15 of the application required the production of a sitewide Ecological Management Strategy, which was produced in August 2015³.

Most relevant to the present development is the identification of a 'low status' soprano pipistrelle *Pipistrellus pygmaeus* roost in Building 82. This is the museum building within the present development site that is proposed

¹ AMEC (2012). *Environmental Statement – Chapter 12*.

² NPA (2015). *Update Ecological Survey Report – Princess Royal Barracks, Deepcut*

³ Nicholas Pearson Associates (2015). *Ecological Management Strategy – Princess Royal Barracks, Deepcut*.



to be converted to a store.



Figure 1. An aerial image showing the location of the site. The approximate site boundary is outlined in red. Image produced courtesy of Google maps (map data ©2023 Google).



Figure 2. The proposed plans for the works at Deepcut Barracks. Plan modified from Ubique Architects, dated 24th July 2023 (drawing no. SK-01-P5).

1.3 Policy and Legislation

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

Where possible, this report provides guidance on how the proposal can be designed to meet the requirements of both local planning policy and the National Planning Policy Framework (NPPF). Details of the NPPF can be found in Appendix 1 and relevant local planning policy by Surrey Heath Borough Council is provided in Appendix 2.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal⁴, but also consider the Guidelines for Ecological Report Writing, Second Edition⁵.

⁴ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

⁵ CIEEM (2017). *Guidelines for Ecological Report Writing, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



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 Surrey Biodiversity Information Centre (SBIC) within a radius of 1km of the site.

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 *Triturus cristatus*), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats and dormice *Muscardinus avellanarius*) 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 great crested newts, reptiles and a wide variety of notable species of conservation concern.

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

2.2 Field Survey

A site walkover survey was undertaken on 28th June 2023, during which the habitats contained within the site were described and evaluated. Since this site is relatively small in scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake comprehensive UKHab mapping of the site. All habitat types contained within the site, together with the dominant botanical species and indicators of important habitat types, such as ancient woodland or unimproved grassland, have simply been listed and described where identified.

Habitats and features at the site were evaluated for their potential to support legally protected species and/or species of conservation interest. In addition, 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. Any site-specific limitations to the survey, e.g. access constraints or seasonal constraints, are set out in section 3.11.

2.3 Badgers

Badgers *Meles meles* exploit a range of habitats, including gardens, coniferous woodland, deciduous woodland, mixed woodland and arable land. They live in an underground system of tunnels and nesting chambers, known as a sett, with territories ranging from 30ha to 150ha or more.

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



2.4 Bats

Bats can use a wide range of features for roosting purposes, 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.

A detailed building inspection was carried out in accordance with best practice guidance as set out by the Bat Conservation Trust⁶; the inspection comprised identification of potential access points and 'Potential Roost Features' (PRFs) that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. The survey included a ground-based external inspection around the building and internal inspection of any enclosed loft spaces or roof voids, where safe access was possible.

The potential for roosting bats for each feature, or group of features was assessed as negligible, low, moderate, or high, in accordance with best practice. Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended.

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats. Further surveys are recommended as appropriate.

2.5 Breeding Birds

Birds can use a wide range of natural and artificial habitats when breeding, including trees, hedgerows, fields, houses and garden sheds. 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 Concern⁷ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981).

2.6 Dormice

Dormice are found in deciduous woodland and hedgerows, feeding on flowers, pollen, fruits, insects and nuts, favouring hazel *Corylus avellana* and honeysuckle *Lonicera periclymenum* for food and as bedding. The site was broadly assessed for its potential to support dormice. 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.

⁶ Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

⁷ Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 114, pp 723-747.



2.7 Great Crested Newt

Great crested newts breed in ponds during the spring and spend the rest of the year feeding on invertebrates primarily in semi-natural habitats including woodland, hedgerows, marshes and tussocky grassland. A desk study was undertaken to identify ponds and wet ditches within 500m of the site that might support breeding great crested newts. Where access permission was 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 (HSI) (Oldham et al 2000)⁸. The value of the site for terrestrially foraging great crested newts and any features that might be used by hibernating newts has also been assessed.

Further surveys are recommended as appropriate, in accordance with best practice guidance (English Nature 2001)⁹.

2.8 Reptiles

The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* 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.

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). Further surveys are recommended as appropriate.

2.9 Other Notable Species

The site's habitats were broadly assessed for their potential to support species of principal importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse *Micromys minutus*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with particular 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 and Granted EPS Licences

Surrey Biodiversity Information Centre found four statutory designated sites and five non-statutory Sites of Nature Conservation Importance (SNCIs) located within 1km of the site. These are listed in Table 1 and the

⁸ 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.

⁹ English Nature (2001). *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.



location of the statutory designated sites shown in Figure 3. The closest of the designated sites is Deepcut Barracks North SNCI, the boundary of which lies directly to the east of the proposed development site. This site has interest for its heath and acid grassland habitats, with 25 plant species typical of grassland of conservation interest in Surrey being recorded on the site, including Allseed *Radiola linoides*.

There are four granted EPS licences for mitigation projects within 1km of the site boundary (Figure 4). The closest EPS licence is on the site itself, for the destruction of a brown-long eared and common pipistrelle resting place, dated in 2021 (2020-49683-EPS-MIT).

Priority deciduous woodland habitat, listed under Section 41 of the NERC Act 2007, is located near to the development site. The closest pocket of woodland in this area is located 14m south of the site, on the far side of the road (Figure 5).

Table 1. Designated sites within 1km of Deepcut Barracks.

Site name	Designation	Features listed on citation	Proximity
Statutory designated sites			
Colony Bog and Bagshot Heath	SSSI (Site of Special Scientific Interest)	A Site of Special Scientific Interest notified under Section 28 of the Wildlife and Countryside Act 1981. Notified in 1988. "Colony Bog and the associated complex of bog, wet and dry heath and other habitats within this site form one of the finest surviving tracts of predominately wet heathland in south-east England, as well as being the largest in the London Basin. Also included is some rich unimproved grassland. A large part of the site is military land, and a separate block to the north is managed as a Country Park. The wide range of habitats within the site support a rich variety of plants and animals, including county and national rarities, many of which are dependent on high quality heathland or bog for their survival. The site supports many characteristic heathland birds, including strong breeding populations of nightjar <i>Camprimulgus europaeus</i> , woodlark <i>Lullula arborea</i> , and Dartford warbler <i>Sylvia undata</i> , all birds listed on Annex 1 of the Birds Directive."	880m east
Thursley, Ash, Pirbright and Chobham	SAC (Special Area of Conservation)	The heathland is a series of large fragments of previously more continuous areas and is principally dominated by heather – dwarf gorse <i>Calluna vulgaris</i> – <i>Ulex minor</i> dry heathland. These are transitions to wet heath and valley mire, scrub, woodland, acid grassland, including types rich in annual plants. This habitat supports an invertebrate species, including the nationally rare white-faced darter <i>Leucorhinia dubia</i> , as well as sand lizard <i>Lacerta agilis</i> and smooth snake <i>Coronella austriaca</i> . Selected under Article 4(4) of the Habitats and Species Directive (92/43/EEC) for the habitat types and/or species that this site supports which are rare or threatened within a European context, specifically; i. Depressions on peat substrates of the <i>Rhynchosporion</i> , ii. European Dry Heaths, iii. Northern Atlantic wet heaths with <i>Erica tetralix</i> (Wet heathland with Cross-leaved Heath).	870m east
Thames Basin Heaths	SPA (Special Protection Area)	Classified under Article 4.1 of EC Directive 79/409 on the Conservation of Wild Birds (the Birds Directive) as it is regularly used by 1% or more of the Great Britain populations of the following species listed in Annex 1 in any season: nightjar; 7.8% Great Britain population, woodlark; 9.9% Great Britain population, Dartford warbler; 27.8% Great Britain population.	880m east



Basingstoke Canal	SSSI	A Site of Special Scientific Interest notified under Section 28 of the Wildlife and Countryside Act 1981. Notified in 1985, revised 1994. "The Basingstoke Canal, together with associated "flashes" and heathland, is nationally important for aquatic plants and invertebrates. The transition from calcareous spring water to slightly acidic conditions produces an extremely diverse flora, containing approximately half (87) of Britain's native aquatic higher plant species, including 5 nationally scarce species. The Basingstoke Canal is botanically the most species-rich aquatic system in England. Twenty-four species of dragonfly occur on the Canal and other insects, including two nationally rare (Red Data Book) species, are well represented". NB. The SSSI extends under, but does not include bridges. The SSSI includes the canal and the vegetation to the top of the bank on either side except where private gardens extend to the water's edge, where the boundary is taken as the water's margin i.e. excludes gardens).	910m south
Non-statutory designated sites			
Deepcut Barracks North	SNCI (Site of Nature Conservation Importance)	The site is selected for heath and acid grassland habitats and for the potential of woodland areas to be restored to heath. 25 plant species typical of grassland of conservation interest in Surrey have been recorded on the site. The Surrey Rare Allseed <i>Radiola linoides</i> has been recorded on the site. The site's position is important as it lies adjacent to Colony Bog and Bagshot Heath SSSI.	Adjacent to eastern boundary
Frith Hill	SNCI	The site is selected for its large area of heathland, which includes H3 <i>Ulex minor-Agrostis curtisii</i> heath, a community uncommon in Surrey. Much of the woodland was originally heathland, and has the potential to be restored to heath. Sparrowhawks (<i>Accipiter nisus</i>) are thought to be breeding on the site. The site is close to Colony Bog SSSI and forms part of a large ecological unit made up of semi-natural woodland and heathland that stretches all along the Chobham Ridges.	40m west
Frimley Fuel Allotment	SNCI	The site is selected for its large area of heathland, which includes some H3 <i>Ulex minor-Agrostis curtisii</i> heath, a community uncommon in Surrey. Much of the woodland was originally heathland, and it is likely that it has the potential to be restored to heath. The Surrey Scarce bristle bent <i>Agrostis curtisii</i> has been recorded on the site. The site is close to Colony Bog SSSI and forms part of a large ecological unit made up of semi-natural woodland and heathland that stretches all along the Chobham Ridges.	430m north
Richmond Hill	SNCI	The site is selected for its areas of heath and large areas of woodland which were once heathland, and have potential to be restored to heath. The site is immediately adjacent to Ash to Brookwood Heaths SSSI and the Basingstoke Canal SSSI, and is likely to be visited by species that use the SSSIs. Woodcock has been seen on the site.	700m south-west
Old Windmill Hill	SNCI	An area of much disturbed heathland within a Scots pine <i>Pinus sylvestris</i> plantation. The site was recommended by the RSPB and has good potential for restoration to heathland.	845m south-east

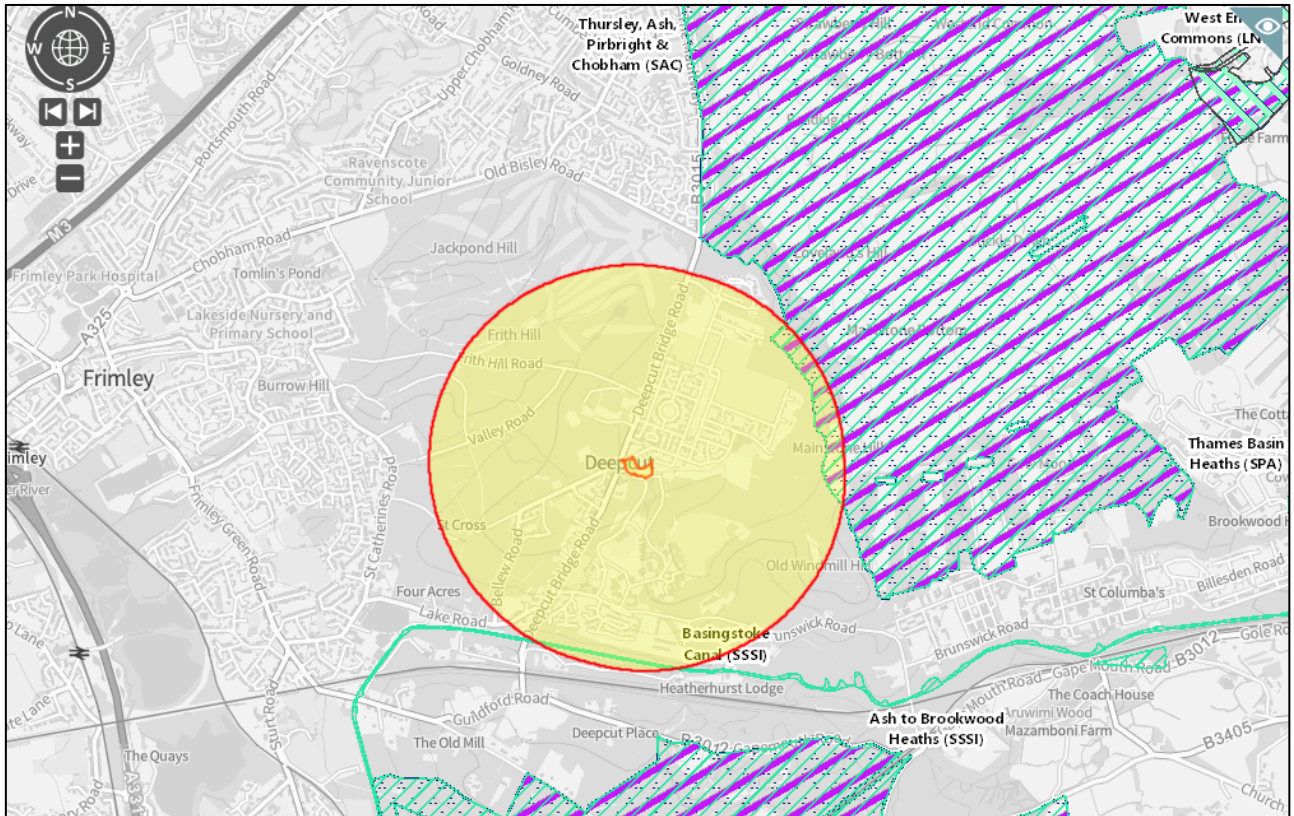


Figure 3. Statutory designated sites within a radius of 2km of the application site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

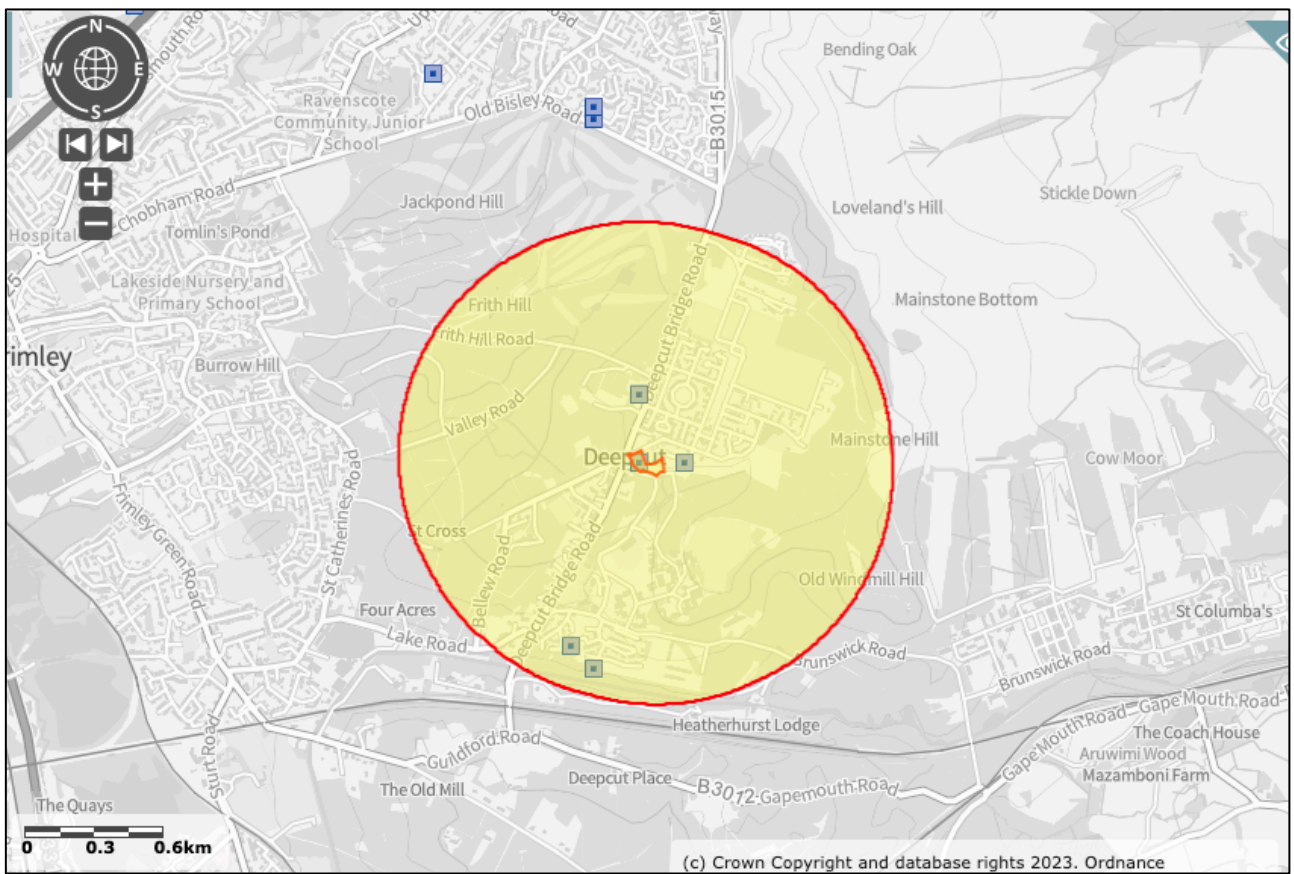


Figure 4. Granted EPS licences within 1km of the application site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

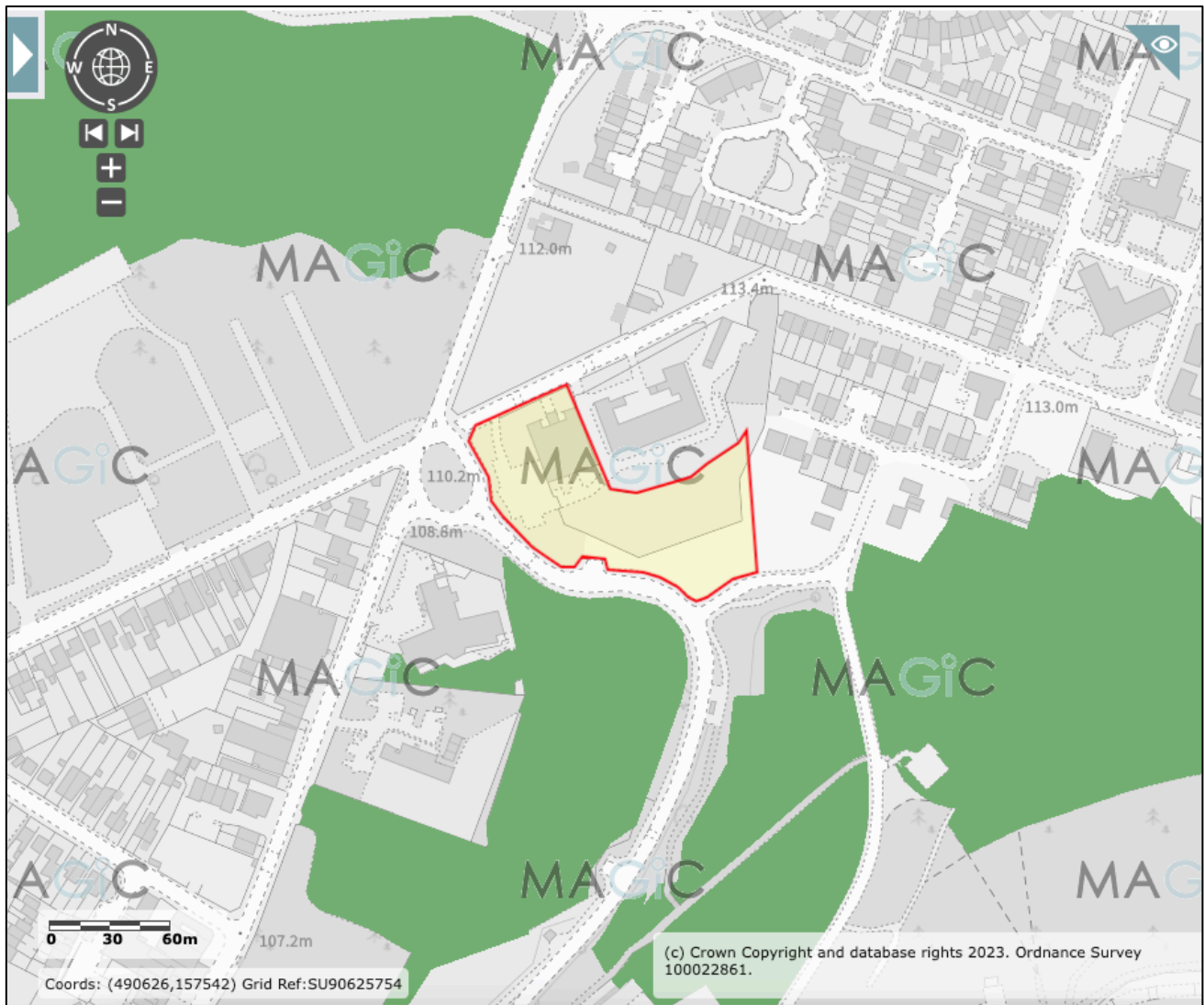


Figure 5. Priority deciduous woodland habitat (green) in proximity to the development site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Habitats

The site comprises an old museum building with an associated car park, access road and area of acid grassland and heathland mosaic to the south-east. A barbed wire fence separates the car park from the museum building and grassland. The site borders a road at the south and the southern boundary is formed of a road verge. Two mature silver birch *Betula pendula* trees are located within the grassland.

The majority of the south-eastern grassland is dominated by heath grass *Danthonia decumbens*, sweet vernal *Anthoxanthum odoratum*, common bent *Agrostis capillaris* and trailing tormentil *Potentilla erecta*. Other species recorded include wall barley *Hordeum murinum*, Yorkshire fog *Holcus lanatus*, false oat-grass *Arrhenatherum elatius*, fescue grass *Festuca* sp., brown bent *Agrostis vinealis*, cocksfoot *Dactylis glomerata*, creeping bent *Agrostis stolonifera*, common sedge *Carex nigra*, ribwort plantain *Plantago lanceolata*, chickweed *Stellaria media*, milk thistle *Lactuca serriola*, common sorrel *Rumex acetosa*, common knapweed *Centaurea nigra*, field horsetail *Equisetum arvense*, common bird's-foot-trefoil *Lotus corniculatus*, self-heal *Prunella vulgaris*, hop trefoil *Trifolium campestre*, field bindweed *Convolvulus arvensis*, yarrow *Achillea millefolium*, oxeye daisy



Leucanthemum vulgare, ragwort *Jacobaea vulgaris*, mouse-ear hawkweed *Pilosella officinarum*, spear thistle *Cirsium vulgare*, hare's-foot clover *Trifolium arvense*, vetch *Vicia* sp., with small patches of scattered bracken *Pteridium aquilinum*, broom *Cytisus scoparius*, bramble *Rubus* spp. and gorse *Ulex europaeus*. A denser patch of bracken and bramble is located along the southern boundary. An area of gorse and ling *Calluna vulgaris* is present in the north-eastern corner of the grassland, and silver birch saplings are located in the south-western corner.

Patches of dense scrub are located around the site. This includes a patch of buddleia, willow *Salix* sp. and silver birch located adjacent to the south-western corner of the museum and areas of hazel *Corylus avellana* and black pine *Pinus nigra* scrub along the west and southern areas of the car park.

The road verge at the south appears to have been managed for wildflower value and is dominated by common knapweed and oxeye daisy. Other species recorded include perennial rye *Lolium perenne*, cocksfoot, creeping bent and false oat-grass, ribwort plantain, toadflax *Linaria vulgaris*, hedge bedstraw *Galium mollugo*, sheep sorrel *Rumex acetosella*, smaller cat's-tail *Phleum bertolonii*, salad burnet *Sanguisorba minor*, lady's bedstraw *Galium verum*, vipers bugloss *Echium vulgare* and hop trefoil. There are patches of dense scrub along this verge also including areas dominated by gorse and buddleia with bracken silver birch, hazel, sycamore *Platanus occidentalis*, broom, black pine, holly *Ilex aquifolium* and bramble. Patches of bare ground are interspaced in the scrub along the south-eastern corner of the site. A silver birch monolith is located in the south-western corner of the verge.

An area of longer grassland is located in the northern section, adjacent to the existing access road. This is dominated by perennial rye, cocksfoot, creeping bent and ribwort plantain with smaller number of species listed in the previous section also identified. One pedunculate oak *Quercus robus* and four mature Scots pines *Pinus sylvestris* are located in this section of grassland.



Photograph 1a (left) & b (right). Left – View north-east over the car park and barbed wire fencing. Right – Area of grassland along the southern elevation of the museum building.



Photograph 2a (left) & b (right). Left – View north-east of the buddleia scrub and access road adjacent to the museum. Right – View east over the acid grassland habitat.



Photograph 3a (left) & b (right). Left – View south-west over the acid grassland. Right – View east over the acid grassland and patches of ling.



Photograph 4a (left) & b (right). Left – View south-east over the acid grassland with the two mature silver birch trees. Right – The car park located in the western section of the site.



Photograph 5a (left) & b (right). Left – View north-east towards the Scots pine trees and unmanaged grassland adjacent to the museum building. Right – View south-east over the northern boundary and museum building.



Photograph 6a (left) & b (right). Left – The south-western corner of the site, showing mature Scots pine and a wildflower verge. Right – View west along the road verge at the south of the site, including a silver birch monolith.



Photograph 7a (left) & b (right). Left – View south of the area of the site to be joined to an existing road. Right – View north of the proposed path of the new access road at the south.



Photograph 8a (left) & b (right). Views east of the road verge at the south of the site.



Photograph 9a (left) & b (right). Views of the dense scrub located on the road verge at the south of the site.

3.3 Badgers

No evidence of setts or digging by badgers was seen within the site boundary. However, a mammal run was identified heading north to south through the south-eastern section of the grassland (Photograph 10). Hairs picked up from the fence line in the south-eastern corner indicate that foxes are using this run, but it is not possible to rule out use by badgers at this stage.



Photograph 10a (left) & b (right). Left – Mammal run across eastern section of the site. Right – Possible access point in the south-eastern corner used by animal making runs.

The Surrey biological information centre provided no records of badger in the search area.

3.4 Bats

One building is present on the site: an old museum building which has had a historical soprano pipistrelle roost within it. In addition, two trees on site were subject to ground-level tree assessments at the time of visit (named Tree 6 and Tree 7 to reflect report by Keen Consultants¹⁰). These are all described in Table 2, together with any features with the potential to support roosting bats.

The acid grassland and dense scrub within the site would attract a varied resource of invertebrate prey for foraging and commuting bats. The mature woodland and heathland surrounding the site in combination provide a variety of habitats that are likely to support a wide variety of bat species, including rarer bats such as Western barbastelle *Barbastella barbastellus*. Overall, the site is assessed as having moderate value for foraging and commuting bats and may be used as part of a wider resource.

The biodiversity records search indicates the presence of common pipistrelle *Pipistrellus pipistrellus* and brown long-eared bat *Plecotus auritus* within 1km of the site. The closest of these was a brown long-eared bat recorded located approximately 55m north of the site from July 2004.

Table 2. Potential roost features for bats.

Building / Tree	Description of features	Assessment of suitability
Old Museum Building	A brick building of a complex structure with a slate hipped roof. Generally the building is in good repair, however there are a large number of lifted, slipped and cracked slate tiles across the roof, particularly close to the hips. In addition, gaps were identified due to missing mortar under hip tiles on the south and northern elevations. Access points were also seen under hip tiles	Moderate bat roost suitability

¹⁰ Keen Consultants (2023). *Tree Survey for land at former Museum, Deepcut, GU26 6SJ*



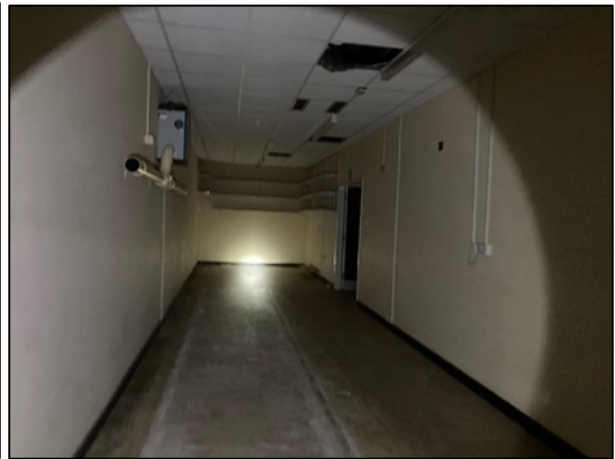
	<p>and between the soffit box and wall top on the southern and western elevations.</p> <p>Internally, the building is single-storey with a central atrium and multiple side rooms. The central atrium has a vaulted ceiling and therefore no loft voids. However, the side rooms have suspended ceilings with traditional loft voids above. A number of the ceiling tiles were broken, slipped or missing, allowing inspection into small areas of the loft from the ground. It appeared as if the lofts were mostly lined with bitumen or plastic sheeting with rockwool on the floor. No evidence of bats could be seen from the ground but may have been missed due to the lack of safe access into the voids.</p>	
Tree 6	<p>A mature silver birch tree with codominant stems within the grassland area. Flaking bark was seen on both the underside and topside of the northern stem. A small rot hole was also identified on a south-facing section of the southern stem at a height of around 2.5m.</p>	Moderate suitability
Tree 7	<p>A mature silver birch tree within the grassland area. Two rot holes were identified at a height of 1.5m on the west and eastern faces. These appeared to connect to an internal cavity that runs through the trunk. A small rot hole was also identified on the western side of the trunk at a height of around 4m.</p>	Moderate suitability



Photograph 11a (left) & b (right). Left – View of southern elevation of building. Right – View of south-western corner of building.



Photograph 12a (left) & b (right). Left – Western elevation of museum building. Right – View of north and eastern elevations of museum building.



Photograph 13a (left) & b (right). Left – Internal view of main atrium of museum building.



Photograph 14a (left) & b (right). Views of slipped ceiling tiles in the suspended ceiling over the side rooms.



Photograph 15a (left) & b (right). Left – Tree 6, a mature silver birch with codominant stems. Right – Tree 7, a mature silver birch.



Photograph 16a (left) & b (right). Left – Map showing locations of museum building (blue outline) and trees (white). map produced courtesy of Google maps (map data ©2023 Google). Right – Rot hole seen at 1.5m on Tree 7.

3.5 Breeding Birds

The areas of dense scrub close to the building, car park and southern boundaries and all of the mature trees have the potential to support a variety of common nesting birds.

The Surrey biodiversity records search provided bird records for 10 species within the search area: greenfinch *Chloris chloris*, grey wagtail *Motacilla cinerea*, robin *Erithocus rubecula*, blue tit *Cyanistes caeruleus*, great tit *Parus major*, goldcrest *Rehulus regulus*, wren *Troglodytes troglodytes*, great spotted woodpecker *Dendrocopas*



major, green woodpecker *Picus viridis*, red kite *Milvus milvus*, sparrowhawk *Accipiter nisus* and woodpigeon *Columba pallumbus*.

3.6 Dormice

The scrub habitats along the southern border of the site have potential to support common dormouse, however they are isolated from other suitable woodland in the local landscape by an access road. In addition, this scrub is expected to be retained under the proposed works. Therefore, no further surveys are recommended for this species. However, if any scrub along this boundary is to be removed in the future then presence/likely absence nest tube surveys for this species will be required.

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

3.7 Great Crested Newts and other Amphibians

The grassland and dense scrub habitats within the site are suitable for commuting, foraging and refuge purposes for great crested newts.

Using aerial imagery, seven waterbodies were identified within 250m of the site, which is the typical distance great crested newts will travel from their breeding pond¹¹. These are shown in Figure 6 and detailed in Table 3.

A road separates these waterbodies from the site; however, this is not deemed a sufficient barrier due to the size of the road and presence of large areas of suitable habitat on both the site and within the wider landscape, including longer grassland, scrub and mature woodland.

No amphibian records were returned by the Surrey Biodiversity Information Centre.

¹¹ Froglife (2001) *Great Crested Newt Conservation Handbook*, page 10 - https://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

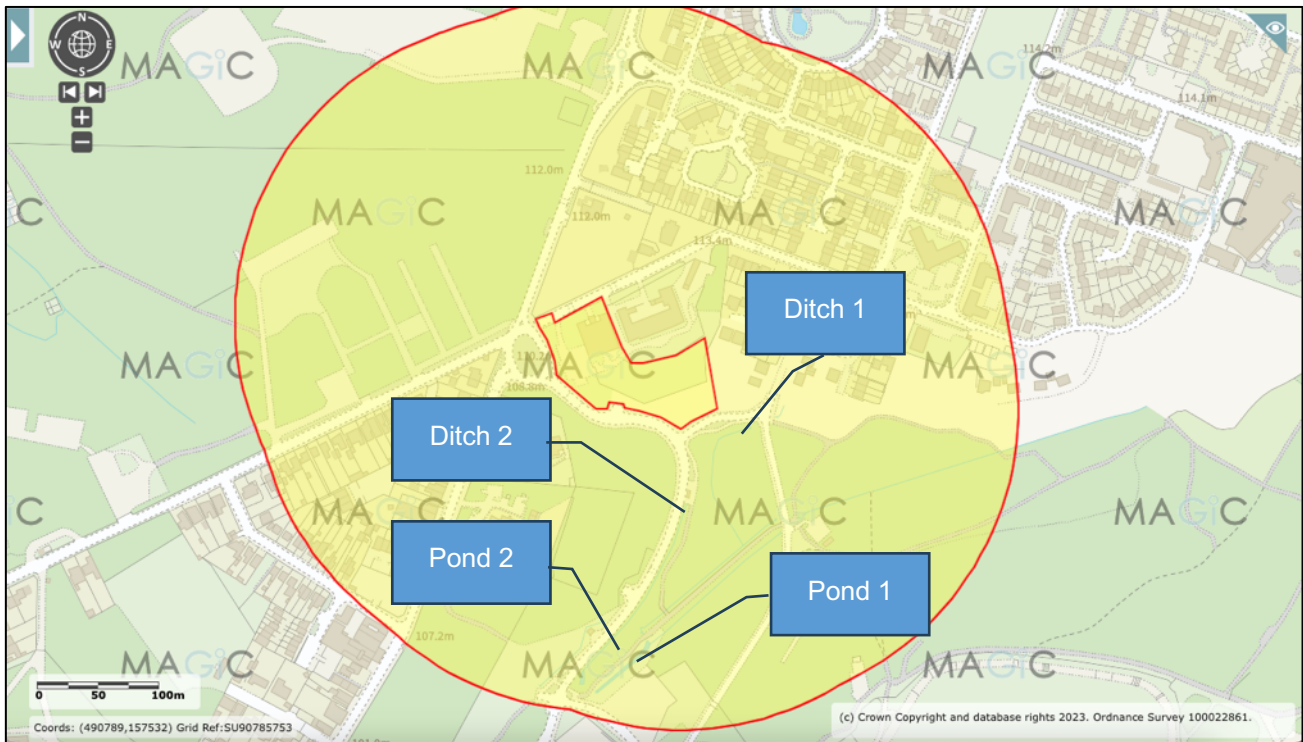


Figure 6. Ponds within 250m of the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).



Table 3. Pond descriptions

Waterbody	NGR	Description	Proximity to Site	Survey recommendations
Ditch 1	SU 90722 57540 (closest section to site)	Ditch system located within mature woodland. Sections are culverted under roads and paths.	18m south	Obtain access for scoping assessment.
Ditch 2	SU 90700 57507 (closest section to site)	Ditch system located within mature woodland edge.	60m south	Obtain access for scoping assessment.
Pond 1	SU 90663 57378	Pond within mature woodland, connected to Ditch 1	170m south	Obtain access for scoping assessment.
Pond 2	SU 90645 57387	Pond within mature woodland, connected to Ditch 2	210m south	Obtain access for scoping assessment.

3.8 Reptiles

The grassland habitat present within the proposed development site is potentially suitable for common reptile species, particularly common lizard and slow worm, owing to the presence of favourable habitats. There are areas of suitable habitat for sand lizards *Lacerta agilis* and smooth snakes *Coronella austriaca* within designated sites in the wider area, but the site itself has limited value for these species due to the lack of sandy banks and mature heathland.

No reptile records were identified within 1km of the site, however records for sand lizard and smooth snake were identified within a 10km square overlapping the site by SBIC. This means that these species are present within the wider landscape.

3.9 Invasive Non-native Species

Buddleia shrubs were identified within the site boundaries. Although not listed on Schedule 9 of the Wildlife and Countryside Act, this is a non-native and invasive species. No other invasive species were identified.

The Surrey biodiversity records search indicates the presence of Japanese Knotweed *Fallopia japonica*, montbretia *C. x crocosmiiflora*, three-cornered garlic *Allium triquetrum*, variegated yellow archangel *Lamium galeobdolon subsp. argentatum* and Indian balsam *Impatiens glandulifera* within 1km of the site.

3.10 Other Notable Species

The grassland and scrub have suitability for nesting, foraging and commuting hedgehogs. No records of this species were provided by SBIC.

There are a number of records of notable invertebrates within 1km of the site. Species include:

- brilliant emerald dragonfly *Somatochlora metallica*



- common darter *Sympetrum striolatum*
- grayling *Hipparchia semele*
- silver-studded blue *Plebejus argus*
- scarce blue-tailed damselfly *Ischnura pumilio*
- *Panzeria puparum* (a true fly)

The closest record was for the true fly, located 250m west of the development site.

3.11 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.

Due to health and safety risks from the suspended ceiling tiles, it was not possible to access internal loft voids. In addition, access to the external northern, western and eastern elevations was not possible due to Heras fencing positioning. However, inspections of the building were carried out using binoculars to look for evidence of bats or suitably features from a distance, although it is possible that some evidence may have been missed.

4 IMPACT APPRAISAL

4.1 Designated Sites

Four statutory and five non-statutory designated sites are located within 1km of land at Princess Royal Barracks. The closest of these is Deepcut Barracks North SNCI, located adjacent to the eastern boundary of the site. Frith Hill SNCI is also located 40m to the west.

Due to the non-residential nature of the works, which utilises existing infrastructure on the site, and the site's distance from the statutory designated sites within the area, no direct nor indirect impacts from the development are anticipated. However, impacts to closer non-statutory SNCIs, including Deepcut Barracks North adjacent to the development site, may occur during the construction and operational phases. These impacts may include noise, light and dust pollution during construction. As such, best working practices relating to noise levels, dust suppression through damping and surface water and operational waste management will help to minimise any risk of impacts. Any lighting during the construction phase must be sympathetic to nocturnal wildlife (such as bats and dormice) based on guidelines from the Bat Conservation Trust (summarized in Appendix 3) and run on sensors.

4.2 Habitats

The site contains habitats of potentially high ecological value, including mixed scrub, an area of acid grassland-heathland mosaic and wildflower road verge. The majority of these are to be retained by the proposed works, with existing hardstanding and buildings being utilised by the development where possible. However, some



areas of natural habitats will be lost through the creation of a new access road and hardstanding in the northern section of the site. For instance, a small area of scrub is to be removed to create hardstanding at the rear of the store. However, this area is primarily comprised of buddleia an invasive species. The remaining areas of scrub are to be retained by the proposed works and should be subject to limited management to maximise their value for wildlife, only being cut once every two years to control spread into grassland areas.

In addition, an area of the acid grassland mosaic habitat will be lost by the new access road. Due to the presence of protected and notable plant species recorded locally and the adjacent Deepcut Barracks North SNIC's designation for its grassland of conservation interest, including Surrey Rare Allseed, there is a risk of a breach of legislation in respect of protected plants from these works. The potential for impacts on protected plant species at the site cannot be known until a detailed botanical survey is undertaken.

A National Vegetation Classification (NVC) survey is recommended to determine the botanical communities present within the site grassland and heathland mosaic at the south-east of the site and to determine whether any notable/protected plant species are present which could be impacted by the proposed works. This must be carried out in the optimal botanical season (May to August) and include an assessment of the core habitat areas using quadrats for later analysis to determine the NVC botanical communities present. This will enable a full assessment of the significant of potential impacts from the development and provide detailed mitigation for the site and recommended enhancements for retained areas of grassland and heath.

Areas of grassland will also be lost for a new cycle stand and parking spaces, however this section of grassland is more species-poor than the area to the south-west.

Two mature silver birch trees will be lost by the construction of the new access road. To compensate for the loss of these, new silver birch trees should be planted at a ratio of 3:1 elsewhere within the site, ideally along the northern or western boundaries of the site.

4.3 Badgers

No badger setts were identified on or near the proposed development footprint during the assessment. However, since there is potential evidence of badgers commuting across the site, the following measures are recommended to prevent harm to badgers during construction:

- all food or waste food must be stored securely overnight;
- tools and hazardous materials must be stored securely; and
- deep excavations must either be covered overnight or a ramp places in them to provide a means of escape.

In addition, immediately prior to works commencing it is recommended that a repeat badger walkover is carried out by a suitably qualified ecologist to look for any new signs of badger foraging or digging.

4.4 Bats

Due to previous surveys carried out in 2015, the museum building has been confirmed as a historic soprano pipistrelle roost. In addition, the building has 'moderate' suitability to support other bat roosts. Due to the



building's previous occupation by bats, three bat emergence/re-entry surveys are recommended to determine the present importance of this building to bats. Without further surveys the level of impact upon bats cannot be fully assessed. To ensure adequate coverage of all potential roost features, it is estimated that four observers will be required for each survey visit to observe all suitable roost features. To ensure that the survey effort conforms with interim guidance on the use of night vision aids, produced by the Bat Conservation Trust, three night-vision cameras supported by infra-red lighting will be used to support surveyors.

These surveys can be undertaken between May and mid-September (although September is considered to be a sub-optimal survey month). These surveys will be completed at dusk or at dawn, during suitable weather conditions for bat activity to observe any bats emerging or re-entering roosts. Surveyors will use ultrasonic recording equipment to try and establish the species of bat present. If bats are discovered, further surveys to classify the nature of the roost (day/maternity/social) may be required.

In accordance with the Bat Conservation Trust guidelines, the overall potential for Tree 6 and Tree 7 to support bats are rated as 'moderate'. Therefore, tree climbing assessments of these trees should be undertaken where safe to do so, using an endoscope where necessary to investigate any potential roost features identified as well as looking for direct evidence of use. Alternatively, dusk or dawn bat emergence/re-entry surveys can be carried out to determine the presence of bats roosting within the features. In addition, a pedunculate oak (Tree 5) was suggested to be managed through the removal of deadwood from the crown in the Tree Survey report¹⁰. If these works are to be carried out, this tree will require a Ground Level Tree Assessment (GLTA) and associated bat surveys to its value for roosting bats.

An EPS licence will be required for any actions that would directly disturb, modify or destroy a bat roost. This would include measures to replace the existing roosting habitat such as designing integral bat roosting opportunities into the building fabric such as bat tiles and internal voids/access points for bats, depending on the scale of impact.

As the site may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. It is recommended that any lighting scheme on the site is developed in consultation with an ecologist, using ecologically-sensitive principles in accordance with advice given and guidance an ecologist is consulted on any proposed lighting The proposed development is likely to require an 'produced by the Bat Conservation Trust (summarised in Appendix 3).

4.5 Breeding Birds

The building, scrub and mature trees on site have the potential to support common nesting birds. Therefore, the demolition of this building and/or removal of the shrub and tree must 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. If an active nest is identified, works will need to be postponed until the young have fledged.

4.6 Great Crested Newts

The habitats on-site have suitability for great crested newts and four waterbodies are located within 250m. If any of this support a population of great crested newts, their presence upon the proposed development site cannot



be ruled out. The works have the potential to destroy habitat suitable for great crested newts within the proposed zone of impact.

It is recommended that access to all waterbodies is sought to undertake Habitat Suitability Index (HSI) assessments to determine if they have potential to support great crested newts. Where a waterbody is identified to have sufficient suitability further survey effort will be required, including presence/absence and population surveys as applicable.

If the presence of great crested newts is confirmed within any of the waterbodies within the local area, a mitigation strategy will need to be developed which is likely to require the need for a European Protected Species (EPS) licence to allow the development to proceed legally. Mitigation and compensation measures would be required under such a licence, for example careful timing of activities, trapping out of the site and translocation of great crested newts to a receptor site which would be enhanced to support them.

4.7 Reptiles

The proposed development would result in the loss of suitable reptile habitat at the site, including approximately 400m² of longer grassland and scattered scrub to facilitate an access road and new store plant area. This is highly likely to impact on reptiles and a survey is therefore recommended for this site. The standard approach to reptile presence/absence surveys requires 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 presence of reptiles is confirmed through such a survey, a reptile mitigation strategy is likely to be required by the planning authority.

4.8 Invasive Non-native Species

Buddleia is not a Schedule 9 species but is invasive so care should be taken during site preparation to prevent it from spreading. Removal of the buddleia in advance of the commencement of work is recommended, with all arisings appropriately removed and destroyed.

4.9 Other Notable Species

The hedgehog has suffered dramatic declines in population in recent decades¹² although it remains fairly widespread. Habitats within the site have the potential to be used by this species for foraging, commuting and shelter and some of this will be lost during the proposal. Where any suitable habitats for hedgehogs are removed, site preparation must be preceded by a hand search to ensure that, in the event a hedgehog is present, it can be moved safely to suitable habitat to be retained within the site.

¹² British Wildlife (December 2016) Britain's Hedgehogs: research and the conservation effort in the face of serious decline. British wildlife Vol. 28, pp78-86)



5 CONCLUSIONS

The land at Princess Royal Barracks comprises of buildings and hardstanding with an area of acid grassland-heathland mosaic at the south-east and areas of mixed scrub and wildflowers along the southern and western boundaries. The proposed works have the potential to impact upon a number of protected species and habitats of ecological value the following further ecological surveys are recommended:

- botanical: NVC survey of acid grassland-heathland mosaic habitat
- roosting bats: three emergence/re-entry surveys of the old museum building, a tree climbing assessment or emergence surveys of two trees and a ground-level tree assessment of one tree
- great crested newts: HSI assessments of four waterbodies
- reptiles: presence/likely absence surveys using refugia.

It is important that no habitat clearance or other site preparation work should be undertaken until planning permission has been granted and all relevant protections for habitats of importance and protected species have been detailed and implemented. Please be advised that any work to remove or modify habitats outside of typical management may undermine a future planning application.

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 the 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’ (SACs), SPAs 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 2017, as amended (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, now known as National Site Network sites under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, receive the highest level of protection under the Regulations 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’ to the conservation objectives 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 *Satyrium 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.

Environment Act (2021)

The Environment Act sets a target of halting the decline in species through the inclusion of a legally binding 2030 species abundance target. Aiming to restore natural habitats and enhance biodiversity, the Act requires new developments to improve or create habitats for nature (through mechanisms such as mandatory Biodiversity Net Gain), and tackle deforestation. Going forwards, UK businesses will need to look closely at their supply chains as amongst other measures they will be prohibited from using commodities associated with wide-scale deforestation. Woodland protection measures are also strengthened through the Act.

The Act enables the reform of the Habitats Regulations and further improves protection for nature through the establishment of Local Nature Recovery Strategies that support national Nature Recovery Networks. In addition, the Act provides for the production of Protected Site Strategies and Species Conservation Strategies, aimed at supporting the design and delivery of strategic approaches to deliver better outcomes for nature.

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 2021)¹³ 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.

Paragraph 179b, which states that council policies should “*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and*

¹³ HM Government (2021). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf



identify and pursue opportunities for securing measurable net gains for biodiversity.” The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)¹⁴. 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 five years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2021 (Stanbury et al, 2021), which provides an up to date assessment of the conservation status of birds in the UK.

References

Protection of Badgers Act (1992). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1992/51/contents>

Circular 06/2005 (2005). Government Circular: Biodiversity and geological conservation – statutory obligations and their impact within the planning system. Office of the Deputy Prime Minister, London. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf

¹⁴ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”). Available at: <http://jncc.defra.gov.uk/page-1373>

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”). Available at: <http://jncc.defra.gov.uk/page-1374>

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations”). Available at: <http://jncc.defra.gov.uk/page-1379>

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

Countryside and Rights of Way (CRoW) Act (2000). HMSO London. Available at: <http://www.legislation.gov.uk/ukpga/2000/37/contents>

Defra (2011) Biodiversity 2020: A strategy for England’s wildlife and ecosystem services. Available at: www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services.

Defra (2013) Progress Update. Available at: www.gov.uk/government/publications/biodiversity-2020-simple-guide-and-progress-update-july-2013.

Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 114, pp 723-747.

Natural Environment and Rural Communities (NERC) Act (2006). HMSO London. Available at: http://www.legislation.gov.uk/ukpga/2006/16/pdfs/ukpga_20060016_en.pdf

National Planning Policy Framework (NPPF) (2021) Ministry of Housing Communities & Local Government. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1005759/NPPF_July_2021.pdf

Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at: <http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 – Surrey Heath Borough Council Planning Policy

Table 4. Summary of Surrey Heath Borough Council Core Strategy and Development Management Policies 2011-2028.

Policy number/title	Policy summary
<p>CP14A - Biodiversity and Nature Conservation</p>	<p>For development proposals, particular regard will be given to SPAs, SACs, SSSIs, NNR, SNCI, LNRs and ancient woodland.</p> <p>Outside of these areas, new development will where appropriate need to contribute to this protection and management of biodiversity.</p> <p>Within locally designated sites development will not be permitted unless it is necessary for appropriate on site management measures and can demonstrate no adverse impact to the integrity of the nature conservation interest. Development adjacent to locally designated sites will not be permitted where it has an adverse impact on the integrity of the nature conservation interest.</p>
<p>CP14B - European Sites</p>	<p>The Council will only permit development where it is satisfied that this will not give rise to likely significant adverse effect upon the integrity of the Thames Basin Heaths Special Protection Area and/or the Thursley, Ash, Pirbright & Chobham Common Special Area of Conservation.</p> <p>All new residential (net) development within 5km of the Thames Basin Heaths Special Protection Area is considered to give rise to the possibility of likely significant effect. Accordingly only new development that complies with the following requirements will be permitted. No (net) new residential development will be permitted within 400m of the SPA and non-residential development within 400m of the SPA will be required to demonstrate that it is not likely to have a significant effect either alone or in combination with other plans or projects.</p> <p>Proposals for residential development elsewhere in the Borough will be required to provide appropriate measures to avoid adverse effects upon the Thames Basin Heath Special Protection Area in accordance with the Borough Councils adopted Avoidance Strategy (or as subsequently amended).</p> <p>These measures could include: contribution towards SANGs.</p>



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 to 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 Trust¹⁵ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring 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. Consideration should be given to 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 cat's 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;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;

¹⁵ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features;
- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- lighting spectra: peak wavelength >550nm
- colour temperature: <2700K (warm)
- reduction in light intensity
- minimal UV emitted
- upward light ratio of 0% and good optical control.

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London. Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) Ecological Consequences of Artificial Night Lighting. Island Press. ISBN 9781559631297.

CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>



Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011. Available at: <https://www.theilp.org.uk/resources/free-resources/>

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats. Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATSGuidelines8_lightpollution.pdf?v=1542109376

End.
