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Ecological Assessment

Site Name

Land at New Barn School Phase 3

Client

Sussex Educare Ltd

Issue Date

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Author

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Project No: 11439

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About the Author

This report has been prepared by Sam Lunn, a Principal Ecologist at The Ecology Co-op, with 13 years of experience. He has Level 2 survey licences for bats and great crested newts and a level 1 survey licence for dormice and has prepared numerous European Protected Species licences. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), he 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 extensive survey work and reporting, encompassing a breadth of deliverables, 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 Sussex Educare Ltd to undertake a Preliminary Ecological Appraisal on land at New Barn School, further to a proposal to build a new 12-classroom teaching block.
Context	The site measures approximately 0.48ha and sits within a semi-rural location with the rest of the school site to the north and west and Rapkyns Care Centre further west. The wider landscape comprises pastoral fields and small woodland parcels. The habitats present within the red line boundary are limited and comprise an area of modified grassland, bare earth, hard-standing and some introduced shrubs. Tree lines that lie outside the red line plan, form the eastern and southern boundaries with a newly created hard-standing car park to the west and modified grassland and artificial pitch to the north.
Key findings	The land at New Barn School does not include any semi-natural habitats and is dominated by the presence of newly established modified grassland and bare ground. The potential for protected species to be present is very limited as the site remains surrounded by amphibian proof fencing installed during the previous application at the school.
Recommendations	A sensitive lighting scheme is required that ensures the habitats along the boundaries and any enhancement features installed within are protected from any artificial light created by the new school block.
Are further surveys required?	No.

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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 New Barn School by Sussex Educare Ltd. This report presents the findings of a walkover survey undertaken by Sam Lunn, a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM) and Natural England Level 2 Bat and Great Crested Newt Survey Class Licence holder, on 27th May 2026. 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 proposed works which include:

- a new 12-classroom teaching block
- extension of the existing car park
- new footpaths and associated external works.

Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment (EcIA) 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. It is not intended for submission in support of a planning application but can be used to inform a future Ecological Impact Assessment (EcIA).

1.2 Background

New Barn School has recently completed works in line with a previous planning application, DC/21/2350, which included a great crested newt *Triturus cristatus* mitigation licence where a large area of the school, including the area now proposed for Phase 3, was trapped under licence ,2023-65181-EPS-MIT, with all wildlife found relocated to a retained wildlife area to the north of the school including a single great crested newt. As part of planning application, DC/21/2350, the area now being put forward for Phase 3 was used as a work space and storage for materials and machinery.

The site measures approximately 0.48ha and sits within a semi-rural location with the rest of the school site to the north and west and Rapkyns Care Centre further west. The wider landscape comprises pastoral fields and small woodland parcels. The central grid reference for the site is TQ 1366 3211. Figure 1 shows the boundary of the site.

Proposed plans for the new classroom and car park are illustrated in Figure 2.



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 ©2026 Google).

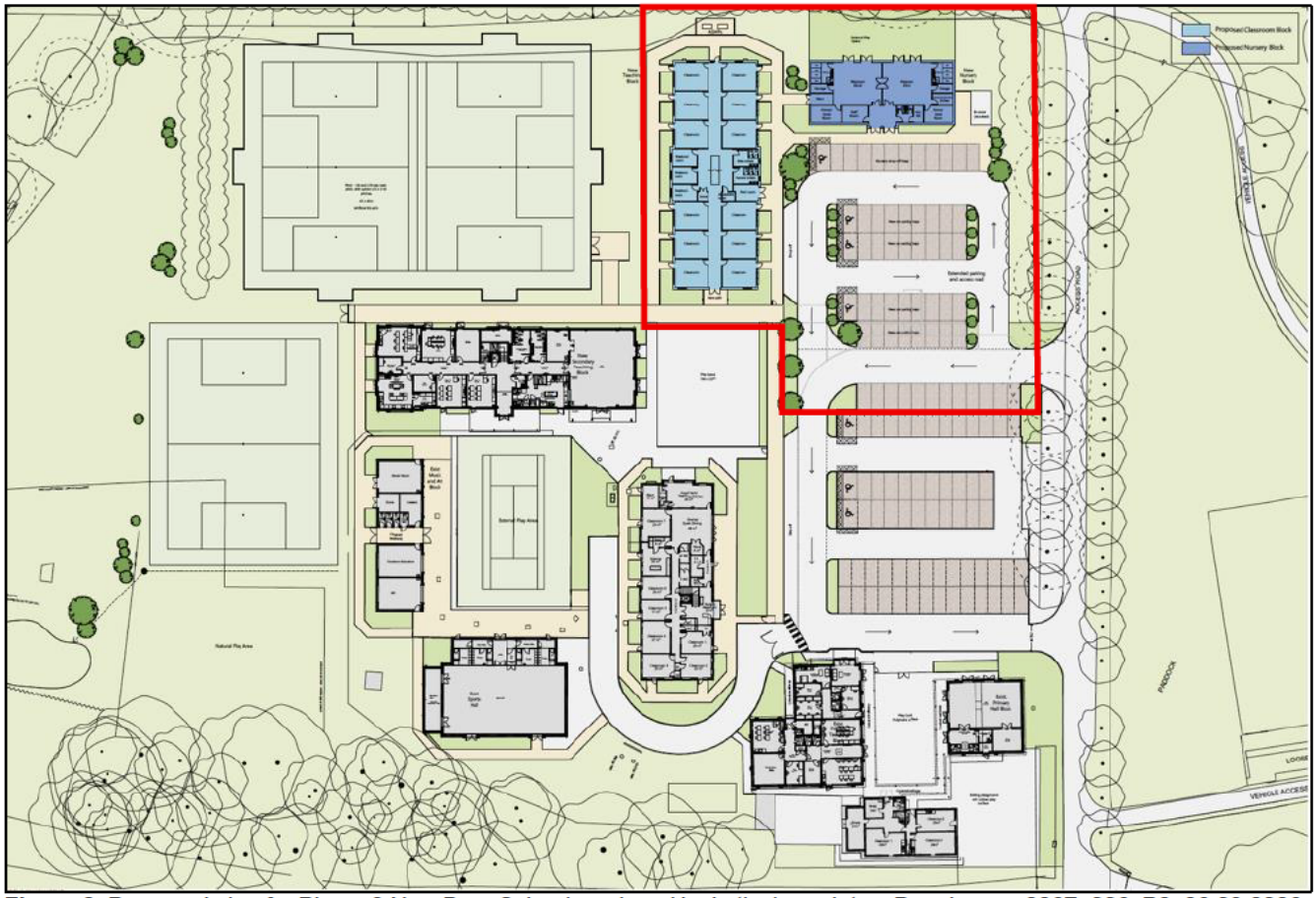

Figure 2. Proposed plan for Phase 3 New Barn School produced by Lytle Associates. Drawing no. 2267_006. P2. 26.03.2026.

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 Horsham District Council is provided in Appendix 2.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal[1], but also consider the Guidelines for Ecological Report Writing, Second Edition[2].

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 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 27th May 2026, during which the habitats contained within the site were described and evaluated in accordance with standard UK Habitat Classification (UKHab)[3]. The dominant species and indicators of important habitat types such as ancient woodland or unimproved grassland, were recorded.

UKHab survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of the survey is to provide, relatively rapidly, a record of the vegetation and wildlife habitats present. The habitat classification is based principally on vegetation, augmented by reference

[1] CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.
[2] CIEEM (2017). *Guidelines for Ecological Report Writing, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.
[3] The UK Habitat Classification Working Group (2023) *The UK Habitat Classification User Manual* at http://ecountability.co.uk/ukhabworkinggroup-ukhab

to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat.

Data was gathered through a site walkover survey and use of on-line aerial photography to broadly categorise the habitats present using the UKHab classifications[4]. 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 habitats listed under the NERC Act, 2006, are highlighted.

The UKHab methodology is a recognised tool for initial scoping of potential ecological constraints and opportunities, and for identifying potential effects of the proposed development as part of the planning application process.

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.

[redacted]

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.

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 negligible, low, moderate, or high, in accordance with best practice. Any evidence confirming the presence of bats was clearly recorded

[4] UK Habitat Classification Working Group (2018). *UK Habitat Classification – Habitat Definitions V1.0* at http://ecountability.co.uk/ukhabworkinggroup-ukhab

[5] [redacted]

including photos and samples taken (e.g. droppings), where appropriate.

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats.

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 Concern[6] 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.

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)[7]. 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.

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,

[6] 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.
[7] 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.

piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub).

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

There is one statutory designated site within the zone of influence of the site. This is Slinfold Stream and Quarry Site of Special Scientific Interest (SSSI) which is located 0.8km south-west of the site. Slinfold Stream and Quarry SSSI is designated for its geological importance rather than for nature conservation.

There are two granted EPS licences for mitigation projects within 1km of the site boundary. The closest EPS licence to the site concerns great crested newts from 2011–2017 at the Rapkyns Care Centre and Village, immediately next to the site.

There are no priority habitats within the red line area being surveyed. However, there are small woodland parcels in close proximity and the closest ancient woodland is approximately 240m to the west.

There is one granted EPS licence for mitigation projects regarding bats within 1km of the site boundary and this covers the destruction of resting places for brown long-eared bats *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus* and Nathusius' pipistrelle bats *P. nathusius*.

There are also two old EPS licences granted for great crested newts associated with the adjacent care centre, the most recent of which is dated 2015 to 2016 and covers the damage and destruction of resting places for newts. There is also the current great crested newt licence associated with planning permission, DC/21/2350, at New Barn School dated between 2023 and 2050 and covering the damage and destruction of resting places for great crested newts. The works under this licence have been completed.

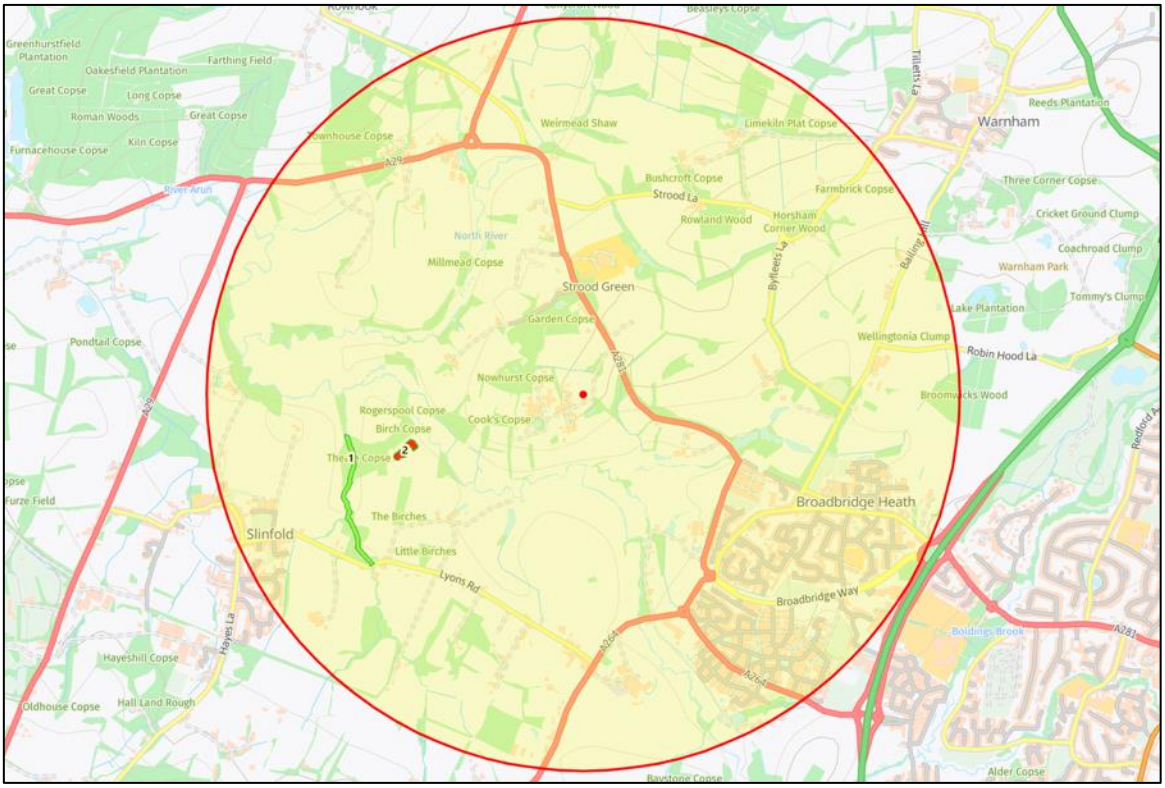

Figure 3. Designated sites within a radius of 2km of the application site. Image produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

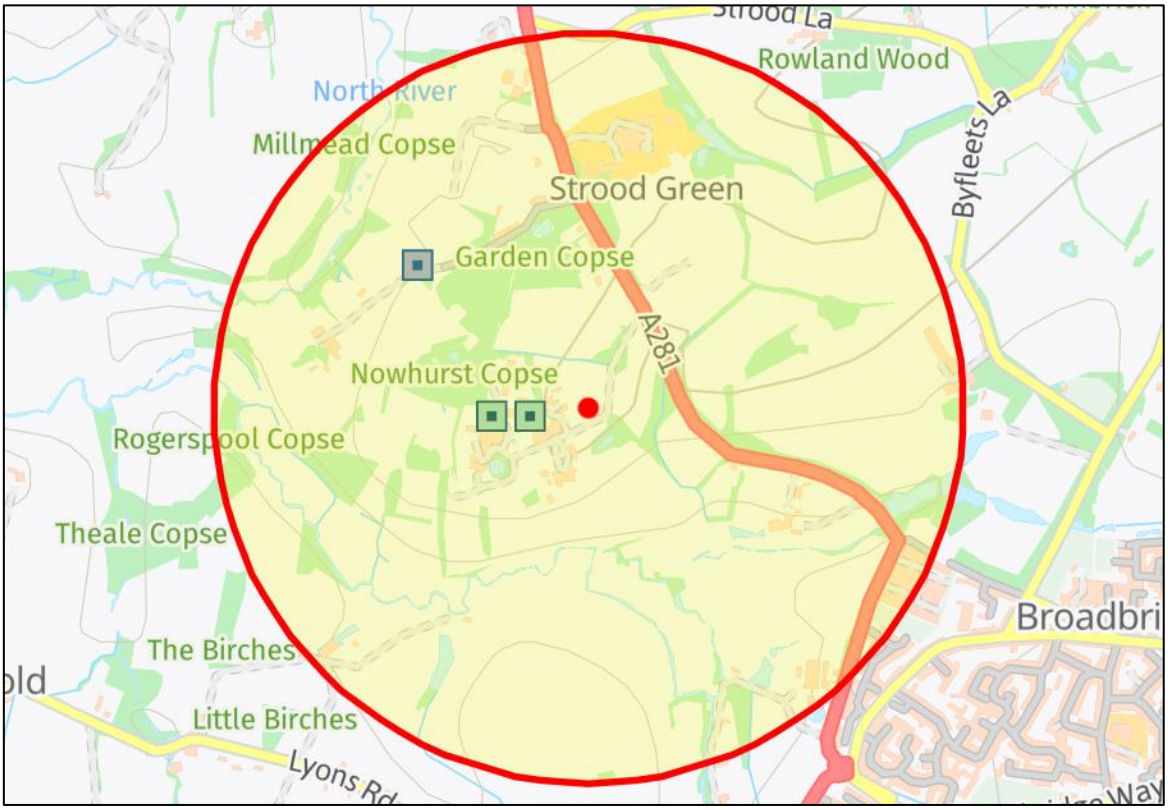

Figure 4. Granted EPS licences within 1km of the application site. Green square = great crested newt, blue square = bats. Image produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

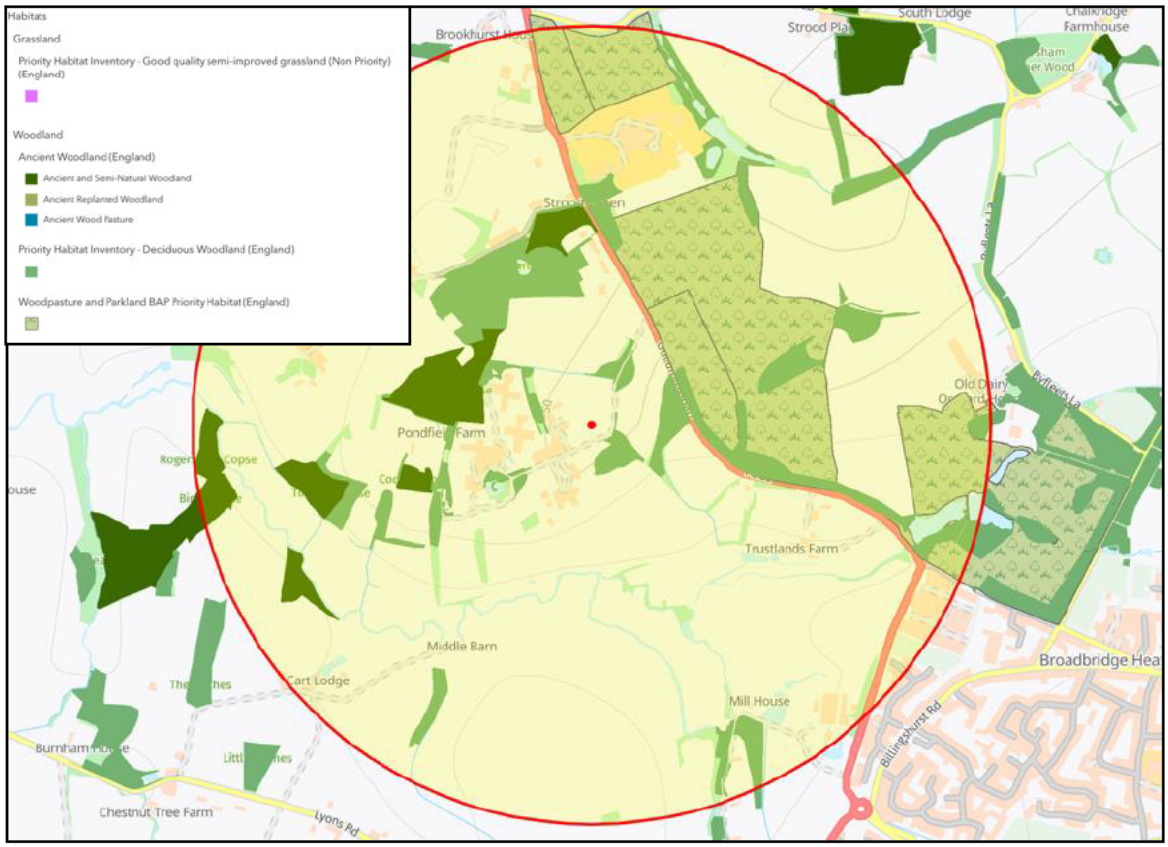

Figure 5. Habitats of importance for nature conservation. Image produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Habitats

The habitats present within the red line boundary are limited and comprise an area of modified grassland, bare earth, hard-standing and some introduced shrubs. Tree lines that lie outside the red line plan, form the eastern and southern boundaries with a newly created hard-standing car park to the west and modified grassland and artificial pitch to the north.

The modified grassland, which dominates the site, has only recently been established, evidenced by the large amount of bare ground that can be found in between patches of grass. Yorkshire-fog *Holcus lanatus* dominates the grassland with annual meadow grass *Poa annua* frequent throughout.

Table 1 below lists the UKHab habitats found at the site with the general species composition of these habitats. Note that detailed information on buildings and ponds with respect to bats and great crested newts are presented in the following sections. The habitat map for the site and key to the standard mapping symbols used is presented in Figure 6. Photographs of important areas of habitat are presented below.

Table 1. The UKHab habitat contained within the site.

Habitat type	UKHab Code	Area (ha) length (m)	Species composition	Ecological importance
Modified grassland	g4		Yorkshire-fog *Holcus lanatus*, annual meadow grass *Poa annua*, broad-leaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense*,	Low

Habitat type	UKHab Code	Area (ha) length (m)	Species composition	Ecological importance
			creeping buttercup *Ranunculus repens*, scentless mayweed *Tripleurospermum*, creeping cinquefoil *Potentilla reptans*, smooth sow-thistle *Sonchus oleraceus*, bramble *Rubus fruticosus*, dandelion *Taraxacum officinale*, cut-leaved Crane's bill *Geranium dissectum* and common bird's-foot-trefoil *Lotus corniculatus*	
Artificial unvegetated – unsealed surface	u1c		Bare ground that forms a quarter of the site with no vegetation present.	Negligible
Built up areas and gardens	u1		Introduced shrubs created as part of the previous application containing some ornamental species, dominated by *Escallonia rubra* as well as containing broad-leaved dock *Rumex obtusifolius*, common nettle *Urtica dioica*, bristly oxtongue *Helminthotheca echioides*, bird's-foot-trefoil, white clover *Trifolium repens*, creeping buttercup, Yorkshire fog, hoary ragwort *Jacobaea erucifolia*, creeping thistle.	Low
Developed land – sealed surface	u1b		Hard-standing pathway and bike storage unit.	None

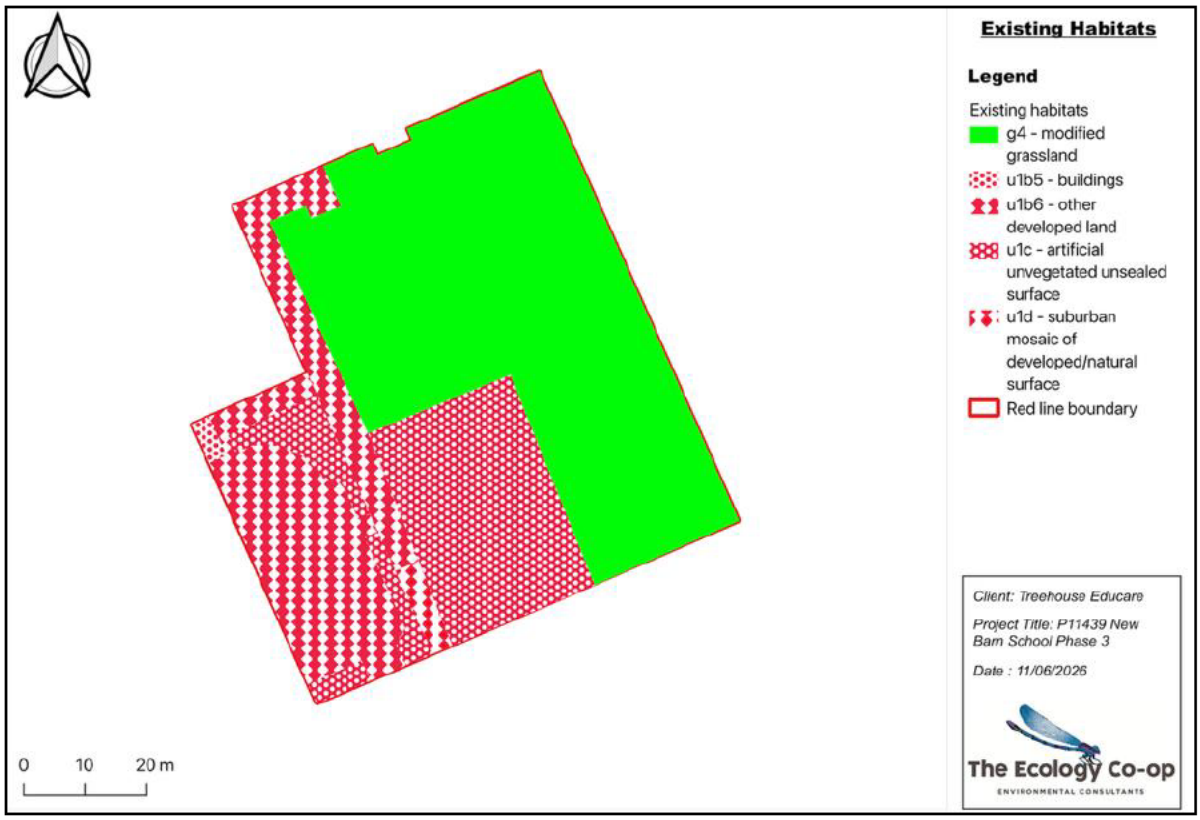

Figure 6. UKHAB map showing existing habitats within the site. The site boundary is indicated with a red line. Produced using QGIS software, version 4.06.3 – Hannover.



Photograph 1. The newly established modified grassland which has a lot of bare ground still scattered across the sward.



Photograph 2. The area of bare ground making up around 25% of the site and located in the southeastern corner. Note the amphibian proof fencing still present around the outside.



Photograph 3. The introduced shrub as part of the previous planning application adjacent to the new car park that was also created.

[redacted]

[redacted]

[redacted]

[redacted].

3.4 Bats

There are no buildings or trees present within the site and therefore the development poses negligible risk to roosting bats. There are tree lines bordering both the eastern and southern boundaries but no features were identified that could support roosting bats.

The modified grassland field that dominates the site has limited ecological value due to its lack of species diversity and as a result, its potential to provide foraging value to bats is also low. The line of trees that lies outside the site but forms the eastern and southern boundaries does have potential to provide foraging and commuting value for bats. However, some of the older existing buildings at New Barn School support very bright lights and this was reflected in the 2021 bat activity surveys for the previous application which found mostly common and soprano pipistrelle bats using the site in low numbers.

The Sussex biodiversity records search indicated the presence of six records within 1km of the site including three records for common pipistrelle bats, one record for soprano pipistrelle and one record for a brown long-eared bat as well as one unknown bat.

3.5 Breeding Birds

There are no habitats present within the site suitable for supporting breeding birds. The adjacent tree lines to the east and south are suitable and are being retained.

The Sussex biodiversity records search indicates the presence of 103 bird species within 1km of the site. A total of 23 species are red listed on the Birds of Conservation Concern list, 24 species are amber listed, 22 species are NERC S41 and 14 species are on Schedule 1 on the Wildlife and Countryside Act.

3.6 Dormice

The site contains no woodland, scrub or hedgerows suitable for dormice and the species is highly unlikely to be present. The tree lines do provide low value habitat but are not connected to higher value habitats and therefore the dormice are considered likely absent from this site.

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

3.7 Great Crested Newts and other Amphibians

There are no ponds contained by the site and eight ponds within 250m of the site (see Table 2 below). The previous survey effort for the last planning application at New Barn School identified that five of those eight ponds supported great crested newts, so the species is definitely in the area. However, the survey area focused on within this report was included in the pitfall trapping work covered under a European Protected Species licence and the amphibian proof fencing is still intact and encompasses the survey site. It is therefore unlikely for great crested newts to be present within the survey area although they are certainly present in the wider surroundings.

The Sussex biodiversity records search identified 168 records within 1km of the site. The closest record is approximately 200m away.

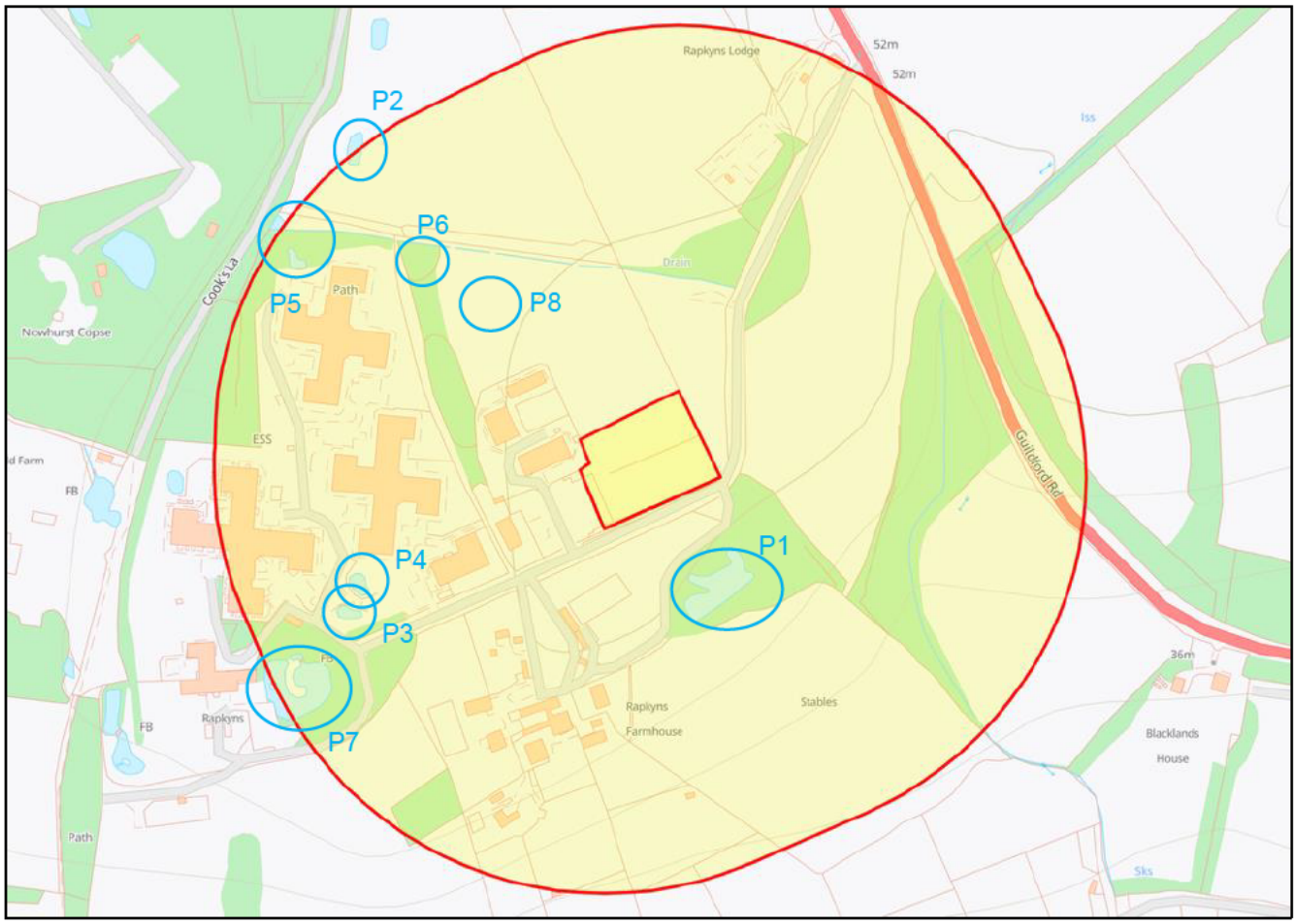

Figure 7. Ponds within 250m of the site. Image produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

Table 2. Pond descriptions

Pond	NGR	Description	HSI value	Interpretation	Population results 2021
1	TQ 13703 32042	Large deep pond, little marginal vegetation, no aquatic vegetation, within a small woodland parcel.	0.67	'Average' suitability	Negative eDNA
2	TQ 13456 32333	The pond is lined with a good level of marginal and aquatic vegetation, it is adjacent to scrub/grassland fields.	0.80	'Good' suitability	Peak count of 10 great crested newt
3	TQ 13450 32010	The pond is lined with a good level of marginal and aquatic vegetation, it is situated in the middle of a plot occupied by a residential care home.	0.58	'Below average' suitability	Peak count of 11 great crested newt
4	TQ 13462 32030	The pond is lined with a good level of marginal and aquatic vegetation.	0.59	'Below average' suitability	Peak count of 13 great crested newt
5	TQ 13411 32258	Pond within woodland, it is heavily shaded with little marginal vegetation.	0.34	'Poor' suitability	Peak count of 2 great crested newt
6	TQ 13501 32256	Small woodland pond with small amount of vegetation present, rejuvenated as part of previous application	0.67	'average' suitability	N/A
7	TQ 13424 31958	Large U-shaped pond with waterfowl. It is adjacent to the care home but	0.69	'Average' suitability	Peak count of 21 great crested newt

Pond	NGR	Description	HSI value	Interpretation	Population results 2021
		within close proximity to nearby foraging habitat.			
8	TQ1353 3222	Newly created pond built as part of the compensation measures under the European Protected Species Licence for the previous planning application.	0.8	'Good' suitability	N/A

3.8 Reptiles

The grassland habitat present within the proposed development site is sparse and provides low potential for common reptile species, such as common lizard and slow worm. However, as above with great crested newts, as the site is surrounded still by amphibian proof fencing, it is unlikely that reptiles are present within this area.

The Sussex biodiversity records search indicates the presence of grass snake *Natrix helvetica* (5 records) and adder *Vipera berus* (1 record) within 1km of the site.

3.9 Invasive Non-native Species

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

The Sussex biodiversity records search found 51 records across 21 species within 2km of the site. This included 4 species of bird, 15 species of higher plants, 1 species of invertebrate and 1 mammal species.

3.10 Other Notable Species

The site is unsuitable for other notable species such as hedgehog, stag beetle or other invertebrates due to the sparse nature of the grassland and lack of biodiversity within the sward.

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.

4 IMPACT APPRAISAL

4.1 Designated Sites

The site is outside the zone of influence of 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. Therefore, in relation to designated sites, the proposed development is considered to pose a 'negligible' impact risk.

4.2 Habitats

The site is dominated by species-poor modified grassland that has only recently established in the last couple of years and has limited ecological value. The tree lines adjacent to the site have the most potential ecological value and these will be retained.

[redacted]

4.4 Bats

There are no buildings situated within the survey site and no trees along the boundaries with suitable roosting features. No further surveys are required as the potential for roosting bats to be on site or in close proximity is none.

The newly established modified grassland has low foraging value for bats in the local area and the adjacent tree lines along the eastern and southern boundaries provide moderate foraging value for bats. However, previous survey results have shown that only common species of bats are using this area and in relatively low numbers.

In this instance, further activity surveys are not required although it is important that the potential for disturbance from artificial lights from the new proposed buildings are considered. The proposed development will need an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).

4.5 Breeding Birds

The boundary habitat on the eastern and southern boundaries provides moderate nesting bird habitat. These two linear habitats will be retained as part of the proposed development and therefore there will be no loss of nesting bird habitat. As a result, no further surveys are required.

Both linear features must be protected from accidental damage by machinery by erecting heras fencing around the site and the lighting strategy recommended for bats will also reduce the impact on nesting birds.

4.6 Dormice

The proposed development is highly unlikely to impact dormice given the absence of suitable habitats for this

species and no further surveys are recommended. The linear habitats on the eastern and southern boundaries provides some limited habitat and these are being retained and protected from construction.

As dormice are nocturnal, it is important that the potential for disturbance from artificial lights is considered, as for bats (see Appendix 3).

4.7 Great Crested Newts

Great crested newts are known to be present in the local area and there are several ponds in close proximity that are known to support breeding populations of great crested newts. However, as the survey area was included in the previous application, it was also included in the great crested newt mitigation licence and as such has amphibian proof fencing around the whole site and was part of a previous trapping and translocation effort. In addition to the above, the newly established modified grassland is of low value to great crested newts.

All of the above factors mean that it is very unlikely that a great crested newt will be present within the survey area despite the good numbers of great crested newts in the local area. No further surveys or mitigation measures are required. Once the proposed plans have been complete, the amphibian proof fencing will be removed and great crested newts in the surrounding area will be able to move into any semi-natural habitats that have been created.

4.8 Reptiles

As above for great crested newts, the newly created modified grassland is of low value to reptiles and as the survey site is currently surrounded by amphibian proof fencing, it is very unlikely that any reptiles would be present within the site, even though the surrounding habitat further west is of high suitability for reptiles.

No further surveys or mitigation measures are required.

4.9 Invasive Non-native Species

There are no non-native invasive species present. Construction vehicles should be washed prior to entering the site to ensure that none are brought in on the wheels.

4.10 Other Notable Species

As the site is unsuitable for most other notable species the proposed development is considered to have a neutral impact on these species.

5 OPPORTUNITIES FOR ENHANCEMENT

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme should include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

The developer is also encouraged to consider including bat roosting opportunities and bird nesting opportunities onto retained trees. For example, a general purpose and crevice bat box and general purpose nest boxes. As best practice, the lighting scheme should be designed to minimize light spill (see Bat Conservation Trust website), around these roosting features and potential commuting routes.

6 CONCLUSIONS

The land at New Barn School does not include any semi-natural habitats and is dominated by the presence of newly established modified grassland, bare ground, and a new hard-standing car park with small areas of introduced shrubs. The construction of a new school block, as set out in Figure 2 of this report, represents an impact that is likely to result in effects that are significant at a site level only, given the absence of any habitats of value. The precautionary mitigation set out in section 4.4, regarding a sensitive lighting scheme, must be followed to ensure that there is not a breach of the Wildlife and Countryside Act.

The enhancement opportunities identified in section 5 of this document will result in new opportunities for nesting birds and roosting bats, and likely beneficial effects for biodiversity at the site should they all be implemented in full.

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 avellanarius*, 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 principal 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 licence, 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*).

[redacted]

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 principal 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.

[redacted]

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2024)[8] 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 192b, states that council plans should "*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue*

[8] HM Government (2024). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

opportunities for securing measurable net gains for biodiversity."

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005) [9]. 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.

[redacted]

[9] 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) (2024) Ministry of Housing Communities & Local Government. Available at:
https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

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

APPENDIX 2 – Horsham District Council – Horsham District Local Plan 2023-2040 (December 2023)

Policy Number/Title	Policy Summary
Strategic Policy 13: The Natural Environment and Landscape character	The Natural Environment and landscape character of the District, including the landscape, landform and development pattern, together with protected landscapes and habitats, will be protected against inappropriate development. The Council will expect development proposals to be landscape-led from the outset so that they clearly inform the design and layout. Proposals will also be required to: 1. Protect, conserve and enhance the landscape and townscape character, taking into account features / areas identified as being of landscape importance and the individual settlement characteristics, and maintain settlement separation; 2. Maintain and enhance the Green Infrastructure Network, the Local Nature Recovery Strategy and national Nature Recovery Network and, where practicable, help to address any identified needs and deficiencies in these networks across the District; 3. Maintain and enhance the existing network of geological sites and biodiversity, including safeguarding existing designated sites and species, and secure measurable net gains in biodiversity; and 4. Incorporate SuDS into a scheme in an optimal location for their purpose whilst also securing landscape and biodiversity enhancements and delivering high-quality green spaces. Proposals will be expected to provide details to demonstrate that the 62 whole life management and maintenance of the SuDS are appropriate, deliverable and will not cause harm to the natural environment and/or landscape.
Strategic Policy 14: Countryside Protection	1. Outside built-up area boundaries and secondary settlements, the rural character and undeveloped nature of the countryside will be protected against inappropriate development. Any proposal must be essential to, and justify, its countryside location, and must meet one of the following criteria: a) Support the needs of agriculture or forestry b) Enable the extraction of minerals or the disposal of waste; c) Provide for quiet informal recreational use; or d) Enable the sustainable development of rural areas. 2. In addition, all proposals must be appropriately integrated within the landscape and be of a scale appropriate to its countryside character and location. Development will be considered acceptable where it does not lead, either individually or cumulatively, to a significant increase in the overall level of activity in the countryside, and protects, conserves, and seeks to enhance, the key features and characteristics of the landscape character area in which it is located, including; a) The development pattern of the area, its historical and ecological qualities, tranquillity and sensitivity to change; b) The pattern of woodlands, fields, hedgerows, trees, waterbodies and other features; c) The landform of the area; and d) The protection of dark skies, in particular where it may impact on a designated International Dark Sky Reserve (IDSR), Neighbourhood Plan designations and High Weald AONB Management Plan objectives.

Strategic Policy 16: Protected Landscapes	1. Development proposals within and adjacent to the High Weald AONB must demonstrate how their development proposals conserve and enhance the natural beauty of the AONB, having appropriate regard to the setting and views into and out of the AONB, the High Weald AONB Management Plan, any updates and any other relevant documents. Proposals will be required to set out any proposed mitigation or compensation measures needed to address any harm. 66 2. Small scale development that helps to support the social and economic well-being of the AONB will be supported, provided that the scheme is compatible with the purpose of the designation. 3. Major development within the AONB will only be permitted in exceptional circumstances. Applicants will be required to demonstrate why the proposal is in the public interest and what alternatives to the proposal have been considered. 4. Proposals within land that contributes to the setting of the South Downs National Park should be consistent with National Park purposes and have regard to the South Downs Local Plan, the South Downs Integrated Landscape Character Assessment, the South Downs Partnership Management Plan and any other relevant document and updates. In particular, proposals should not cause harm to the special qualities (including dark skies), local distinctiveness or sense of place, by negatively affecting views into and out of the National Park. Proposals will be required to set out any proposed mitigation or compensation measures needed to address any harm.
Strategic Policy 17: Green Infrastructure and Biodiversity	Green Infrastructure 1. Development will be supported where it can demonstrate that it maintains and enhances the existing network of green infrastructure and contributes to the delivery of public open space, the Local Nature Recovery Strategy, Nature Recovery Network, natural capital, ecosystem services and / or biodiversity. Green Infrastructure should be integral to the design and layout of development, and new provision, including green linkages, should be provided taking into account Natural England's green infrastructure guidance and the council's green infrastructure strategy. Provision should seek to optimise public access to open space and nature via foot, bicycle, wheeling, and also horse as appropriate. 2. Proposals that would result in any loss, degradation or harmful impacts to green infrastructure, or core areas of the Local Nature Recovery Strategy and Nature Recovery Network will be resisted unless it can be demonstrated that new opportunities will be provided that appropriately mitigates and / or compensates for the respective harm and ensures that the ecosystem services of the area are retained and enhanced. Development proposals will be expected to remove invasive species. 3. Proposals will be expected to retain and enhance existing priority habitats and trees, and accord with the aims and objectives of the Green Infrastructure and Local Nature Recovery Strategies. Habitat enhancement including additional hedgerow and tree planting must take account of the local landscape and habitat context. It should seek to optimise biodiversity, ecological connectivity and function, and climate change resilience. a) Development likely to affect a watercourse and its associated corridor should seek to conserve and enhance its ecological, landscape and recreational

value. This should include providing adequate natural buffer zones to the watercourse.

Biodiversity

5. The Council will support appropriate new development which delivers at least 12% biodiversity net gain and:

a) Retains and enhances significant features of nature conservation value on development sites;
b) Makes a positive contribution to biodiversity and accords with the aims and objectives of the Green Infrastructure and Local Nature Recovery Strategies, through the creation of appropriate green spaces, that provide linkages between habitats to create local and regional ecological networks that enable the movement of wildlife through development sites; and / or
c) Following the principle of 'right habitat in the right place', significantly increases woodland or other habitats for the purpose of appropriately enhancing biodiversity, carbon sequestration, pollution control, and / or flood mitigation.

6. Relevant development proposals will be expected to deliver 12% biodiversity net gain and must submit Biodiversity Net Gain information to show how this will be achieved using the mandated Biodiversity Metric or the Small Sites Metric as appropriate and must abide by the metric trading rules. Submissions must make clear what will be provided to meet no net loss and what will deliver net gains. The net gain must be achieved through the delivery of appropriate on-site biodiversity net gain or, where this is not practicable, through off-site net gain within the District especially areas, as suitable to the habitats subject to gain, identified in the District's Green Infrastructure Strategy or the Local Nature Recovery Strategy, or as agreed by the Council. All such schemes, excluding any respective element using statutory biodiversity credits, must submit for approval by the Council a funded maintenance and management plan, including monitoring / reporting and appropriate enforcement processes, that secures the biodiversity net gains for at least 30 years.

7. All other development proposals must seek to demonstrate how measurable biodiversity net gains will be delivered.

Protected Sites and Species

8. Proposals must give appropriate consideration to protected and notable species. They will be expected to protect priority species and seek to aid their recovery, and must conserve, restore and enhance priority habitats, and should create and manage appropriate new habitats, taking into account pollination, where practicable.

9. Particular consideration will be given to the hierarchy of sites and habitats, including buffer areas, within the District, or functionally linked to, as follows:

a) Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites;
b) Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs), Veteran Trees, Ancient Woodland and other irreplaceable habitats; 75
c) Local Wildlife Sites (LWS), Local Nature Reserves (LNRs) and any areas of priority habitats including traditional orchards, local geodiversity, Core Sites in the emerging NRN and other irreplaceable habitats not already identified in a & b above.

10. An appropriate buffer around woodland will be required, this will be at least 15m around Ancient Woodland or greater in accordance with good practice, and

	consideration should be given to the potential for protected species, such as bats, and impacts on hydrology. Around ancient and veteran trees a minimum buffer zone of at least 15 times larger than the diameter of the tree, or 5 metres from the edge of the tree's canopy whichever is the larger, will be required. 11. Where the felling of a tree is necessary, for example due to disease, replacement planting with a suitable tree species, age and location to retain and enhance the link with the wider network of habitats and Green Infrastructure, will be required. 12. Where development is anticipated to have a direct or indirect adverse impact on sites or features of importance to nature conservation, development will be refused unless it can be demonstrated that: a) The mitigation hierarchy has been applied and the objectives of a site's designation, where applicable, and integrity of the area will not be undermined; b) The reason for the development clearly outweighs the likely impact to notified features and / or the need to protect the value of the site; and c) Appropriate mitigation and compensation measures will be provided alongside the delivery of measurable biodiversity net gain as relevant. 13. Any development with the potential to impact the Arun Valley SPA / SAC / Ramsar site, The Mens SAC and / or Ebernoe Common SAC will be subject to a Habitats Regulation Assessment to determine the need for an Appropriate Assessment. In addition, development will be required to be in accordance with the necessary mitigation measures for development set out in the Habitat Regulation Assessment of this Plan.
Policy 18: Local Green Space	1. Local green and open spaces should be protected. Areas designated as Local Green Space, as identified on the Policies Map, will be safeguarded from development unless it can be demonstrated that: a) Development is proposed to enhance Local Green Space functions, for example through improvements to access, recreation and wildlife; or b) It is required for a statutory utility infrastructure purpose, for example water, gas, electricity or telecommunications provision. 2. Within Neighbourhood Plans, the creation of new areas of Local Green Space will be supported providing it is within reasonably close proximity to the community it serves, is local in character and is not an extensive track of land. It must also meet the relevant criteria, as set out in any relevant national planning guidance documents, in relation to scale, beauty, historic significance, recreational value, tranquillity and ecological value, and does not conflict with the strategic policies of this Local Plan.

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 Trust[10] 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 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;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- 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

[10] 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/

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.