

PRELIMINARY ECOLOGICAL APPRAISAL

LAND AT ASPINALL FARM BROCKHALL VILLAGE OLD LANGHO

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A report for

Simpson Farm Dairies

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Ian Ryding August 2019

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PART 1 INTRODUCTION:

1.1 REASONS FOR STUDY:

PENNINE *Ecological* have been commissioned by Avalon Town Planning and Architectural Consultancy on behalf of Simpson Farm Dairies, to undertake an Preliminary Ecological Appraisal of land at Aspinall Farm, Brockhall Village, Old Langho, Blackburn.

The study also includes a badger survey, a full evaluation of the ecological significance of the survey findings, a statement of potential impacts, and recommended mitigation/precautionary measures where appropriate.

The surveys are required due to a proposal to extend the current Ribble Valley View holiday lodge site.

1.2 LOCATION:

The study area is situated on land north of Old Langho Road at OS grid ref SD 6986 3592.

The study area comprises the proposal field, and in the case of badger, part of the adjacent land.

The extent of the development is shown on plans submitted in support of the application, those plans are not reproduced in this report.

1.3 SITE STATUS:

The site has no statutory designation relating to ecology.

1.4 SURVEY METHODOLOGY:

1.4.1 Extended Phase 1 Habitat Survey:

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of the study area was undertaken on 8th August 2019. The site's habitats were fully mapped and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

- D = Dominant
- A = Abundant
- F = Frequent
- O = Occasional
- R = Rare

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

1.4.2 Badger Survey:

The badger survey focused on land directly affected by the proposed development and land within 50m - 100m of the site that doesn't already form part of the Ribble View park.

The survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines

- Foraging areas
- Scratching posts

1.4.3 Preliminary Bat Roost Survey:

All British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2010.

The preliminary bat roost survey was undertaken on the 8th August 2019 following the methodology outlined in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* Collins, J. Bat Conservation Trust (2016)

The surveys included non-intrusive surveys of the trees on the site in order to evaluate their bat roost potential.

The surveys were undertaken by an experienced preliminary assessor of bat roost potential.

1.4.4 Other Species:

In addition to the above, general assessments of the suitability of the site to support breeding birds and great crested newt were also undertaken as part of this study.

1.4.5 Surveyor Experience:

The surveyor and author of this report, Ian Ryding, has over 32 years experience in ecological survey and evaluation. Key skills include the following.

- Extended Phase 1 Habitat Survey/Preliminary Ecological Appraisal and National Vegetation Classification Survey.
- Highly proficient field botanist, including some difficult plant groups.
- Mammal surveys including surveys for badger, water vole*, otter*, brown hare and preliminary bat roost survey.
- Breeding and wintering bird survey.
- Extensive experience in great crested newt (GCN) survey, evaluation, licensing and mitigation. Natural England Class Licence WML-CL08 held.
- Ecological Evaluation and Impact Assessments in association with large scale commercial development and civil engineering.
- Proof of evidence in respect of nesting birds at public inquiry.

*Over 250km of river reaches surveyed in England.

1.5 SURVEY CONSTRAINTS:

1.5.1 Extended Phase 1 Habitat Survey:

There were no constraints to survey.

1.5.2 Badger Survey:

There were no constraints to survey.

1.5.3 Bat Survey:

The search for potential roosts was not constrained.

1.5.4 Other Species:

There were no constraints to the evaluation of the site in respect of breeding birds and great crested newt.

PART 2 SURVEY RESULTS:

2.1 DESK BASED STUDY:

It was decided in advance of survey that the decision whether or not to request ecological data from Lancashire Environment Record Network (LERN), would be based on the findings of the field survey.

A study was undertaken of the adjacent land in 2015 in relation to a similar scheme, which revealed very little information relevant to the site and no records that had a material influence on the proposals.

Therefore, given the site is composed of a single improved field with occasional scattered trees, and the lack of data generated by the search in 2015, it was decided not to request LERN data in 2019.

The results of the 2015 desk study revealed the following information;

- The site has no statutory wildlife or ecological designations.
- There are no Sites of Special Scientific Interest (SSSI) within 2km of the site.
- The site is not a Biological Heritage Site (BHS) and the nearest BHS, Great Wood & Mill Wood (63NE19) is approximately 200m north of the site.
- There are no known waterbodies capable of supporting GCN within 250m of the site and none within 500m that are not separated by significant barrier effects.
- The LERN data search returned no protected species records for the site.
- Species records within 250m of the site include wall brown (butterfly) only.
- Species records within 500m of the site include Indian Balsam, American mink and pipistrelle bat only.

The extent of the study is shown on the LERN Ecology Plan in the appendix.

Desk based studies were also undertaken to establish the presence of ponds within a 250m radius of the site, as part of a scoping study relating to great crested newt (GCN)

In addition, the Multi Agency Geographical Information Centre <u>www.magic.gov.uk</u> was referred to in respect of statutory sites.

2.2 EXECUTIVE STUDY:

The key findings of the site survey are outlined below.

- The site has no statutory or non-statutory designations.
- There are no statutory sites within 2km of the site.
- The site contains very common habitats of site-local (i.e. Parish) value only that includes improved grassland, several scattered trees and shrubs and a defunct boundary hedge.
- A single boundary hedgerow is the only S41* habitats on the site and will not be affected.
- There are no known S41 species associated with the site.
- Two trees have at roost potential at a 'moderate' level, both will be retained post development.
- The hedge-line provides minor foraging value for bats locally.
- Badgers use part of the site for foraging only but there are no setts on site and no setts with at least 50m of the site boundary.

- There are no impacts on badger setts and impacts on foraging/commuting badgers can be avoided by implementing precautionary measures.
- The site has no ground-nesting bird potential and low value for small numbers of common birds only not exceeding 'local' interest.
- The are no impacts on GCN or its habitat generated by the proposals.

2.3 EXTENDED PHASE 1 HABITAT SURVEY:

2.3.1 General Description:

The site of the proposed development lies immediately to the west of the existing Ribble Valley View site above the river valley of Dinkley Brook. The land slopes slightly to the north and is composed of typical dairy grassland, with occasional scattered mature trees and shrubs that are relics of former field boundaries.

The land to the east is composed of the Ribble Valley View site, beyond which lies an immature mixed plantation woodland that is approximately 20 years old.

The land to the north, west and south of the site is an extension of the dairying land associated with the farm.

2.3.2 Extended Phase 1 Habitat Survey Target Notes:

Survey locations, Target Notes and the proposed working area locations are shown on Map 1 in the Appendix. All species nomenclature follows Stace, C. (1996) 'New Flora of the British Isles' – definitive English names.

Target Note 1:

An area of improved, or possibly old ley grassland that forms the main habitat on the site. Whatever its origins, the grassland is derived from a significantly improved sward that displays little floristic diversity overall. The grassland some affinity with the **MG7** *Lolium perenne* leys and related grassland as defined in British Plant Communities.*

*(Rodwell et al. 1992)

The field is managed through a combination cattle grazing and grass cropping and had been recently grazed at the time of survey.

Species:	Abundance:	
Perennial rye-grass	D	
Red fescue	А	
Meadow-grass spp.	А	
Yorkshire-fog	LA	
White clover	LA	
Common bent	VLA	
Common sorrel	VLF	

Target Note 2:

An area of improved grassland that is representative to the swards found on the valley slopes on the northern side of the site.

Species diversity remains typically low with grasses the predominant species throughout. The grassland some affinity with the **MG6** *Lolium perenne-Cynosurus cristatus* grassland or one of its variants as defined in British Plant Communities.*

*(Rodwell et al. 1992)

Species:	Abundance:
Perennial rye-grass	D
Common bent	A
Red fescue	A
Yorkshire-fog	LA
White clover	LA
Creeping buttercup	LF
Dandelion sp.	LF
Common sorrel	LF
Dock sp.	LF
Tufted hair -grass	0
Soft-rush	VO
Cuckooflower	VO

Target Note 3:

A defunct and fragmented hawthorn-dominated hedge on the western boundary of the site. The hedge is species-poor and also contains blackthorn and a small number of mature and immature trees including sycamore, sessile oak and holly.

The hedge is heavily grazed into the hedge bottom and there is no associated ground flora, but there is a shallow dry ditch on its western side.

A wire stock fence is also present.

The hedgerow has a typical affinity with the **W21** *Crataegus monogyna-Hedera helix* scrub as defined in British Plant Communities.*

*(Rodwell et al. 1991)

Photographs showing the general conditions on the site are provided below.

Site Photographs - Habitats:



Photograph 1: The improved grassland affected by the proposal. Looking south-east.



Photograph 2: The sloping grassland described in Target Note 2. Looking north to south.



Photograph 3: The defunct western boundary hedge as described in Target Note 3.

2.4 BADGER SURVEY:

2.4.1 Survey Details and Results:

The badger survey employed standard techniques to establish if badgers are present on site or use the site for foraging/commuting. (See Section 1.3 Survey Methodology)

The following searches were undertaken.

- Searches for setts on site and within at least 50m of the site, excluding the current Ribble View site.
- Searches for foraging signs and pathways.
- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Sett Search:

The survey found no setts on the site or on the surrounding land.

Search for Foraging Signs and Pathways:

The site was thoroughly searched for badger pathways or signs of foraging. Foraging was mostly restricted to grassland within 40m of the defunct hedge and fence on the western boundary of the site. The foraging was localised and not extensive or concentrated with scattered snuffle holes noted.

Foraging was also taking place locally on the western side of that boundary.

No obvious pathways were present but the land had been disturbed by grazing cattle.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines. Two badger runs were found along the western site boundary only.

The fence/hedge-lines and gates were searched for latrine sites which were found to be absent.

The adjacent farmland to the west was searched for at least 50m (approx.) for signs of badger activity, where intermittent foraging signs (snuffle holes) were the only features found.

The land to the east was searched to eastern boundary fence, where no sign of badger activity was found.

2.4.2 Survey Conclusions:

The survey found evidence of current use of the site by badgers along the western site boundary only, where minor foraging signs and two lightly used runs are present.

No setts were found within at least 50m of the site and it is likely that the sett is some distance away >100m in mature woodland as identified during site surveys in 2015.

Map 2 in the appendix shows the extent of badger activity on and adjacent to the site.

Photographs showing badger activity on the site are presented below.

Site Photographs - Badger:



Photograph 4: Badger foraging signs near to the western site boundary.



Photograph 5: Typical run on the western boundary hedge/fence-line.



Photograph 6: Another typical run on the western boundary hedge/fence-line.

2.5 BIRDS:

2.5.1 Bird Evaluation:

Breeding bird surveys were not undertaken due to the late season and small size of the site. However, given the nature and size of the site, the level of bird use can be reasonably evaluated without recourse to survey.

The site has value for small numbers of common birds only that might use the few trees and shrubs on and adjacent to the site as nest sites.

The site is highly unsuitable for ground-nesting birds such as skylark and/or lapwing, on account of its small size, proximity of high boundary features, levels of disturbance from the well-used public right of way and agricultural cropping regime which is understood to involve silage production.

No bird species other than magpie, carrion crow and woodpigeon were noted during the survey.

2.6 BATS:

2.6.1 Preliminary Bat Roost Evaluation:

Bat Roosts:

The survey identified several trees and shrubs on and adjacent to the site where surveys were undertaken. For purposes of identification, these features were split into separate tree groups (TG) and are described individually below.

The location of the tree groups is shown on Map 2 in the appendix.

It is understood that all trees are to be retained.

TG1:

Two early-mature sessile oak and two hawthorn located in the field affected by the proposals.

None of the trees in the group had any holes or fissures suitable for roosting bats and roost potential is therefore 'negligible'.

TG2:

A single early-mature sycamore showing signs of disease and rot in the main trunk and some branches.

There are several holes in the trunk and main branches that face skywards whereby rain water can easily enter the holes.

No grease/urine staining was found around any of the holes and no droppings found on the bark.

Based on the features present TG2 is considered to have 'moderate' roost potential.

TG3:

A group of three mature sycamore and three mature hawthorn. The survey revealed an absence of holes or fissures suitable for roosting bats.

TG4:

Two dead mature sycamore with no holes and fissures suitable for roosting bats.

TG5:

This is the defunct hedge on the western boundary of the site.

The hedge is mainly composed of hawthorn with occasional mature trees including sessile oak, sycamore and holly.

The northernmost oak has bat roost potential in the form of a crack in one of its large branches. No grease/urine staining was found around the hole and no droppings found on the bark.

Based on the features present this tree is considered to have 'moderate' roost potential.

No bat roost potential was identified in any other trees/shrubs in the group.

Foraging & Commuting Routes:

Foraging potential is very localised on the site and limited to the boundary hedgerows.

Foraging potential is considered to be minor as the site is elevated above the valley of Dinkley Brook and highly exposed to the prevailing westerly wind.

In addition, the main grassland on site is very improved and will naturally have low invertebrate values. However, the coarser improved swards on the valley slopes would be expected to have some invertebrate value above that on the main proposal area.

It is likely that foraging will occur intermittently along the western boundary of the site, however there is excellent foraging along the tree-rich river corridor of Dinkley Brook that extends for over 1km to the south-west, and over 1 km to the north and east connecting to Great Wood, Mill Wood and to the River Ribble corridor.

The northern edge of the woodland to the east of the site also provides good bat foraging areas and is directly connected to the river corridor above.

Based on the habitats available on the site and those available off-site in near vicinity, it is reasonable to predict that the extensive prime off-site foraging locations along Dinkley Brook and adjacent to off-site woodland will be the key bat foraging sites locally.

Photographs of the various tree groups are provided below.

Site Photographs – Bats:



Photograph 7: On of the two oak trees in TG1.



Photograph 8: The sycamore in TG2 showing rot holes in the branches.



Photograph 9: the three mature sycamore in TG3.



Photograph 10: The two dead sycamore in TG4.



Photograph 11: Fissure in one of the main boughs of a mature oak in TG5.

2.7 GREAT CRESTED NEWT:

2.7.1 Great Crested Newt Evaluation:

There are no ponds on the site and reference to Ordnance Survey maps and online aerial photographs indicate that the nearest pond is located approximately 340m north-west of the site.

There are no other ponds within 600m (approx.) of the site, or any other waterbodies potentially capable of supporting GCN.

All of the ponds identified are separated by Dinkley Brook which is considered to be a major barrier to GCN movement/migration.

The 2015 desk study returned no records of GCN within 2km of the site.

Therefore there are no potential impacts generated on GCN or its habitat resulting from the proposals for the site.

PART 3 ECOLOGICAL EVALUATION:

3.1 EVALUATION OF SURVEY FINDINGS:

The following section discusses the significance of the survey findings. It should be noted that this part of the evaluation relates to habitats and species and includes reference to the following statutory/non-statutory instruments.

- The Wildlife and Countryside Act 1981 (and later amendments), with particular reference to protected species listed in Schedules 1, 5 and 8 of the above act.
- Conservation of Habitats and Species Regulations 2010.
- Section 41 Habitats and Species of Principal Importance in England. Natural Environment and Rural Communities (NERC) Act 2006.
- Reference to any relevant Red Data List/Book species and Nationally Scarce species not covered by the above or any other lists / schedules of species rarity or importance.
- Use of the *Biological Heritage Site Guidelines for Site Selection* (LCC, LWT 1998) has been made. This document is an invaluable tool for assessing the significance of species / habitats in Lancashire, since it sets out the minimum ecological requirements for species/habitats to be selected as a Biological Heritage Site. Biological Heritage Sites (BHS) are by definition considered to be of Lancashire County significance for their ecological interest. By implication, sites that fail to meet these guidelines would not be of County ecological significance, but may be of significance at a more local scale e.g. Borough / Parish etc. The use of this method of site evaluation is in effect application of the Ratcliffe (1977) Criteria at a more specific local County level.

The evaluation is based on the commissioned surveys and desk study only.

The following statements are relevant in respect of the above.

3.1.1 Statutory Sites:

There are no statutory wildlife sites within 2km of the site.*

*Source: MAGIC.

3.1.2 Biological Heritage Sites:

The area affected by the proposal fails to meet any of the guidelines for selection associated with the Lancashire Biological Heritage Site scheme. There is one Biological Heritage Site within 500m of the site, that is Great Wood & Mill Wood (63NE19) which is approximately 200m north of the site.

3.1.3 Section 41 (S41) Habitats and Species of Principal Importance in England Natural Environment and Rural Communities (NERC) Act 2006:

There are no S41 habitats or species on the site. The western boundary hedge is a S41 habitat but will be retained.

3.1.4 Nationally Scarce/County Red Data List Species:

There are no Nationally Scarce/County Red Data list plant species on the site.

In addition to the above, the field survey and evaluation of the site revealed the following information.

3.1.5 Vegetation – Habitats and Species:

The survey found no habitats higher than 'site-local' value. The habitats present are largely composed of improved grasslands with low biodiversity interest and occasional scattered trees.

A hedgerow is present on the western boundary which will be retained.

3.1.6 Badger:

Following the survey undertaken, it is concluded that most of the land directly affected by the development showed no sign of use by badger. Badger activity was restricted to grassland adjacent to the western boundary and land west of that boundary which is linked by two badger runs below the fence.

There is nothing to indicate that badgers won't use the proposal site for foraging as the habitat is suitable, however, the impacts generated by the proposal are considered to be minor and it is predicted that the development will have no measurable long-term effects on the badger population as no setts are affected, and extensive areas of good foraging and water supply are available in the wider landscape and within the same farm holding.

The local badger population will continue to use the area much as before and none of the main commuting routes are compromised.

As there are no setts on site or within at least 50m, unlawful disturbance is not predicted. Therefore the development does not conflict with current badger legislation and no licence is required.

3.1.7 Birds:

Nesting bird habitat is restricted to the hedgerow and few trees and shrubs on the site, there is 'negligible' ground-nesting bird potential. Therefore the site is only capable of supporting very low numbers of nesting birds only and not exceeding 'local' value.

3.1.8 Bats:

There are rot holes in two trees on the site that could potentially be used by roosting bats. (See TG2 and TG5). Roost potential in these trees is evaluated as 'moderate'.

Foraging is of minor value on account of the very exposed conditions, limited foraging areas and level agricultural improvement.

In addition very high quality foraging habitat is present off-site in near vicinity. The off-site areas are considered most likely to be the main foraging sites for bats locally.

3.1.9 Great Crested Newt:

There are no ponds on the site and the nearest pond is located approximately 340m north-west of the site. The pond and all other distant ponds identified are separated by Dinkley Brook which is considered to be a major barrier to GCN movement/migration.

The 2015 desk study returned no records of GCN within 2km of the site.

Therefore there are no potential impacts generated on GCN or its habitat resulting from the proposals for the site.

3.2 RECOMMENDATIONS

3.2.1 Vegetation – Habitats and Species:

The proposed works will directly affect an improved agricultural grassland only and no further habitat surveys or provisions are recommended.

3.2.2 Badger:

Natural England guidance *Badgers & Development A Guide to Best Practice and Licensing* was followed during the survey and evaluation of impact on the species. The guidance states that,

'the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- The numbers and status of badger setts and foraging areas that are affected by the proposal;
- the impact that the proposal is likely to have on badgers and what can be done in the way of mitigation;
- judgment on whether the impact is necessary or acceptable; and
- a recommendation on whether a licence will be required.'

The following points are relevant in this respect.

- The survey has shown that there are no setts within at least 60m of the site, therefore no setts are affected by the proposal and there are no licensing issues in respect of disturbance to any badger sett.
- The site shows no evidence of widespread foraging, and very extensive areas suitable foraging habitat occurs off-site within the same farm holding.
- The site contains no water supply that badgers might depend on.
- Badgers currently enter the site and will most likely continue to do so during the operational phase of the development.
- Badgers are common mammals and as such have no Biodiversity based designations such as the UKBAP, LBAP or NERC Act etc. and the resident population is considered to be of 'local' value.

Impacts are considered to be 'negligible' overall without mitigation, and might be generated by animals falling into service trenches during the construction phase.

Recommendations to address the potential impacts are provided below.

As stated above the overall effect on the local badger population is considered to be 'negligible', however there is a risk that animals might fall into service trenches during construction. The following points should be considered here.

- The trenches will be open for a short period of time only and will be relatively shallow.
- It is not envisaged that the service trenches will be deep and a standard minimum depth for services subject to road traffic is 800mm. As the site doesn't form part of a highway, then trench depth may be reduced. However, as a precaution where service trenches are left open overnight earth ramps should be placed at the ends of trenches to allow easy escape for any animals that might fall in.

• For trenches over 1.5m deep, the holes should be back-filled the same day or boards (plywood sheet or 'stockboard') should be placed over the trenches at night to prevent badgers from falling in.

In addition, it is understood that the site will be fenced by a timber post and rail fence, under which badgers will be able to travel unimpeded. However, if there is a need to install sheep netting at any time in the future, then simple small holes should be cut in the wire that will allow badgers to pass through. The holes should be approximately 250mm square.

If required, it is advised that one hole be provided on the northern boundary, and two provide next the runs identified below the hedge/fence-line on the western boundary.

3.2.3 Bats

There are two trees within the tree groups surveyed that have potential for roosting bats.

One is a sycamore (TG2) that has several rot holes in its branches, while the second tree is a mature oak on the western boundary (TG5) with a long fissure in a large bough.

Using the BCT guidance, both trees are assessed as having 'moderate' bat roost potential.

It is understood that the trees will be retained as part of the landscaping of the site, therefore no further survey is required unless the proposals change.

If the proposals change then a licensed inspection by a bat ecologist will be required. If the inspection proves bats to be absent, then the tree can be felled taking note of the precautions in respect of nesting birds.

If evidence of use is found, then the bat ecologist will advise what action to take in respect of licensing.

It is understood that high levels of lighting are not proposed for the site, and that lighting will follow the low-level bollard luminaire layout applied to the existing caravan park. This will ensure that potential roosts and foraging areas are not detrimentally affected by the proposals.

The following information is provided as guidance in relation to the lighting of the site.

'In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or 'commuting' bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.'*

*Bats and lighting in the UK- bats and the built environment series. Bat Conservation Trust.

Table 1 below summarises the relative impacts of light types on bats.

Preliminary Ecological Appraisal Land at Aspinall Farm, Brockhall Village, Old Langho.

Table 1: Bats & Lighting ⁺			
High Negative	 Broad spectrum lights (particularly blue-white light) with high UV. 		
Impact	Metal halide and mercury.		
	• Uplights - which light above the horizontal plane, illuminating trees and foraging		
	habitat.		
Medium	 Broad spectrum lights with low/no UV. 		
Negative	White LED, high pressure sodium.		
Impact			
Low	 Narrow Spectrum Lights with no UV content. 		
Negative	 Low pressure sodium and warm white LED.* 		
Impact	• Directional downlights - illuminating below the horizontal plane which avoid light		
	trespass into the environment.		
	* low relative attractiveness for insects compared to white light and therefore minimal impact on bats insect prey (Eisenbeis 2009).		

†Bats and Lighting - Overview of Current Evidence and Mitigation. E.L. Stone. Bat & Lighting Research Project - University of Bristol.

The following guidance provided below is appropriate in respect of bats and should consulted in relation to the lighting proposals for the site.

Type of lamp (light source)

The impact on bats can be minimised by the use of narrow spectrum lights with no UV content including low pressure sodium lamps and warm white LED.

Luminaire and light spill accessories

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire itself and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

Planting can also be used as a barrier or man-made features that are required within the build can be positioned so as to form a barrier.

Lighting column

The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill.

For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur

There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process if required.

In all instances light spillage in the direction of the trees with potential roosts, the hedged boundary and the river corridor must be avoided.

Light levels

The light should be as low as guidelines permit. If lighting is not needed, don't light.

Timing of lighting

The times during which the lighting is on should be limited to provide some dark periods.

3.2.4 Birds:

Nesting bird habitat is restricted to the few trees and shrubs on the site, there is no ground-nesting bird potential.

It is understood that the hedgerow, trees and shrubs are to be retained as landscape features on the site, so no precautions are required unless there are proposals to remove them.

If removal is required, it must be done outside of the bird breeding season during September-February. Removal in the period March-August must not be undertaken unless an ecologist has inspected the site and deemed the vegetation to be clear of nesting birds.

If breeding birds are found then a buffer zone of 5m around the nest site must be implemented to prevent disturbance until the young have fledged and left the nest. The buffer zone must be fenced off temporarily until the nest is unoccupied. The trees/shrubs containing the nest site can only be felled once the ecologist has declared the site clear of nesting birds.

3.2.5 Great Crested Newt:

The local GCN population is considered isolated from the site due to barrier effects, and there is also no suitable GCN habitat on the site.

There is no reasonable possibility of impacting on GCN or its habitat, therefore additional surveys or precautions are not recommended.

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APPENDIX:

Map1: Extended Phase 1 Habitat Map Map2: Badger & Preliminary Bat Roost Survey Map LERN Ecology Plan (2015)





