



Elite Ecology

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**White Acres,
Biddulph**



Preliminary Ecological Appraisal

March 2021



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0. Executive Summary

This report has been prepared at the request of Mr Yasser Heald (Proprietor). Elite Ecology was commissioned to undertake a Preliminary Ecological Appraisal at White Acres, Biddulph, Staffordshire, ST8 7SJ (Central OS Grid Reference: SJ 90145 60198). The survey effort involved both a desktop study and field survey.

The current proposals are to convert the existing underground water tank into a residential dwelling, that will be accessed by digging out a section of ground for a ramp and adding a new doorway.

Staffordshire Ecological Record was commissioned to carry out an ecological data search of all protected species and sites recorded within a 2km radius of the site.

The preliminary ecological appraisal survey revealed numerous habitats on site. The phase 1 habitat map, habitat codes and target notes for the site are located within **Appendix C**. The following habitats were recorded on site (in habitat code order):

- **A3.3** – Mixed Scattered Trees
- **J1.2** – Amenity Grassland
- **J1.4** – Ornamental Shrub
- **J2.5** – Drystone Wall
- **J3.6** – Buildings
- **J4** – Bare Ground and Hard Standing Ground

No designated sites revealed from the Ecological Data Set provided by SER were located on the site or directly adjacent to the site. Therefore, the proposed development will have no impact upon any designated sites as the works are due to remain within the site boundary.

No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

Hedgehogs:

As a purely precautionary measure, it is recommended that provisions are incorporated during the construction phase. This will be to create provisions for hedgehogs to escape in the form of creating slopes or the inclusion of ramps at the end of each working day from all trenches dug into the ground. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off. Should this information be strictly adhered to, then the development works will not negatively impact on the local mammal populations. Post development, at least two [Eco Hedgehog Nest Boxes](#) should be included into the site within an appropriate location. It is also recommended that small gaps are left within any boundary fencing (if used) to enable the specimens to continue to commute through the area (an example can be found within **Figure 3**). This will ensure that the local hedgehog populations do not become fragmented within the local landscape.

Site Enhancements:

For the proposed site enhancements, please see **Section 5.4** of this report.

Biodiversity Net Gain:

There is no need for a Biodiversity Net Gain as there is no new building work being undertaken.

Contents

0. Executive Summary	2
1. Introduction	4
1.1 Report rationale	4
1.2 Site description and works.....	4
2. Survey Methodology	6
2.1 Desktop Survey	6
2.2 Field Survey.....	6
3. Desktop Survey Results	7
3.1 Statutory Sites	7
3.2 Non-Statutory Sites	7
3.3 Woodland Sites.....	7
3.4 Regionally Important Geological Sites (RIGS)	8
3.5 Species Records.....	8
4. Field Survey.....	10
4.1 Habitats.....	10
4.2 Species	11
4.3 Potential impacts of the works.....	12
5. Recommendations	13
5.1 Designated Sites.....	13
5.2 Habitats.....	13
5.3 Species	13
5.4 Site Enhancements	14
5.5 Biodiversity Net Gain	14
6. References.....	15
7. Appendices.....	16
Appendix A: Site Plans	17
Appendix B: Ecological Data Search Species Lists	18
Appendix C: Phase 1 Habitat Map	21
Appendix D: Site Photographs	22
Appendix E: Biodiversity Legislation and Policy.....	25
Appendix F: Bats and Artificial Light.....	32
8. Notice to Readers: Conditions of this Report	33

1. Introduction

1.1 Report rationale

This report has been prepared at the request of Mr. Yasser Heald (Proprietor). Elite Ecology was commissioned to undertake a Preliminary Ecological Appraisal at White Acres, Biddulph, Staffordshire, ST8 7SJ (Central OS Grid Reference: SJ 90145 60198). The survey effort involved both a desktop study and field survey.

The main purpose of this assessment was to identify the broad habitats (as stated in the JNCC Phase 1 Handbook) and the flora species present within the survey area, with any further evidence of protected species usage and/or features of potential ecological interest also included. The field survey was carried out on Monday the 8th March 2021 by **Mr. Matthew Hodgson** (Ecologist) and **Miss Sally Hall** (Assistant Ecologist).

1.2 Site description and works

The site is situated in a rural setting in the settlement of Biddulph in the county of Staffordshire.

The site contains numerous habitat types. These come in the form of amenity grassland, bare ground, hard standing ground, ornamental shrub, buildings and scattered trees. Some of these habitats could be utilised by protected species. Photographs of the site are found within **Appendix D**.

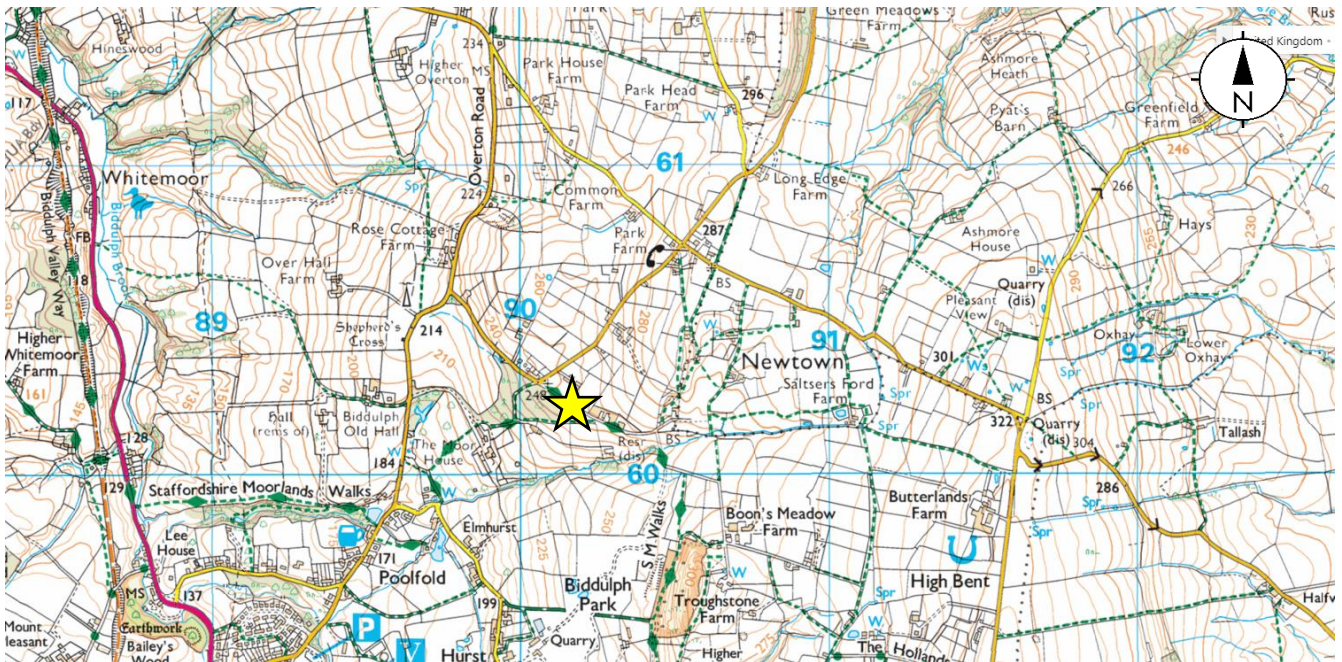
Within the wider landscape, further habitats are present. These come in the form of agricultural land, hedgerows, residential structures (and their associated gardens/land) and woodland. The habitats that surround the site also have the potential to be utilised by a variety of protected species.

The current proposals are to convert the existing underground water tank into a residential dwelling, that will be accessed by digging out a section of ground for a ramp and adding a new doorway. These works will result in both the permanent and temporary loss and/or alteration of some of the habitats located on the proposed re-development site.

Figure 1: An aerial map showing the location of the land proposed for re-development at White Acres, Biddulph (yellow star) in relation to some of the local landscape.



Figure 2: An OS map obtained from Bing showing the location of the survey site White Acres, Biddulph (yellow star).



2. Survey Methodology

2.1 Desktop Survey

A variety of resources were independently consulted to assess the known local records within the nearby area and the importance of the site within the local landscape from an ecological perspective. The resources used were the Local Records Centre, www.naturalengland.org.uk, www.ordnancesurvey.co.uk, Google Maps, Google Earth and Bing Maps. A search of other relevant nature conservation information was made through the use of the Multi-Agency Geographic Information for the Countryside (MAGIC) database.

The local records centre was contacted to provide data on all protected species and designated sites within a 2km radius of the proposed development site. Staffordshire Ecological Record (SER) was the relevant local record centre for this project.

2.2 Field Survey

A Preliminary Ecological Appraisal (previously referred to as an Extended Phase 1 Habitat Survey) was carried out using the method outlined in the JNCC Handbook for *Phase 1 Habitat Survey: a technique for environmental audit (2010)*. This method aims to map and describe the broad habitat types and notable features present on the surveyed site.

As part of the field survey, the floral species will be identified and noted down. This will consider the dominant, abundant, frequent, occasional and rare (DAFOR) species within each habitat on the survey site. The impacts of the proposed development scheme will be assessed by this report.

Each habitat will be assessed for the presence and/or the potential presence of protected species. The impacts of the proposed scheme of works on all potential protected species on site will be assessed. From this, either remedial action or recommended phase 2 presence/absence surveys will be devised.

Some of the classification codes and colours listed within the JNCC handbook may have been slightly modified for this project.

Habitat Surveys can be carried out at any time of the year, with the optimal time period falling between the months of April through until September. This survey was carried out in March 2021, which is outside of the optimal time period for flora surveys. Elite Ecology feels confident that the majority of the floral species located on the site were competently identified during the survey effort. In addition to this, Elite Ecology feels confident that this report reflects an accurate representation of the sites suitability for protected species to be present.

All sites surveyed by Elite Ecology will be run against the relevant Local Wildlife Site Criteria to assess whether or not they meet the required standards.

3. Desktop Survey Results

3.1 Statutory Sites

The ecological data received from SER confirmed the presence of one statutory protected site (e.g. LNR, SSSI, SPA, SAC or Ramsar) within the 2km search radius.

Site Name	Designation	Approx. Distance (m)	Heading
Biddulph Valley Way (Whitemoor)	Local Nature Reserve (LNR)	1200	W

3.2 Non-Statutory Sites

The ecological data received from SER revealed 11 non-statutory sites within the 2km search radius. These are as follows:

Site Name	Designation	Approx. Distance (m)	Heading
Bands Wood & Cheshire Brook Wood	Local Wildlife Site (LWS)	1000	NW
Brook Farm (south of)	LWS	1855	NW
Cloud Side	Biodiversity Alert Site (BAS)	1750	NE
Congleton Edge	LWS	2000	W
Dingle Brook	LWS	700	NE
Pleasant View	LWS and Site of Biological Interest (SBI)	1400	E
The Sprink	Retained BAS	1380	S
Troughstone Hill	LWS	820	S
Whitemore Farm (east of)	LWS	1200	W
Wren Clough	LWS	1850	NE

3.3 Woodland Sites

The information provided by SER revealed nine ancient natural or semi-natural woodland sites within the 2km search radius. These are as follows:

Site Name	Designation	Approx. Distance (m)	Heading
Ashmore Heath	Ancient & Semi-Natural Woodland and Ancient Replanted Woodland	1800	NE
Bailey's Wood	Ancient & Semi-Natural Woodland and Ancient Replanted Woodland	1670	SW
Bands Wood	Ancient & Semi-Natural Woodland	985	NW
Biddulph Brook Wood	Ancient & Semi-Natural Woodland	1200	W
Heath Hey Wood	Ancient & Semi-Natural Woodland	1365	S
Spring Wood	Ancient & Semi-Natural Woodland	1200	S
Whitemore Wood	Ancient & Semi-Natural Woodland	1250	W
Wren Clough	Ancient & Semi-Natural Woodland	1850	NE

3.4 **Regionally Important Geological Sites (RIGS)**

The information provided by SER revealed no RIGS within the 2km search radius.

3.5 **Species Records**

3.5.1 Amphibians

Within the ecological data search provided by SER, one historical (1998) record of an amphibian was revealed within the 2km search radius. The location of the record has not been provided. This was of the common toad (*Bufo bufo*).

3.2.2 Birds

Within the ecological data search provided by SER, multiple bird species were detected within the 2km search radius. A total of approximately 590 records were revealed, comprising of 55 different species. The nearest record to the site is of kestrel (*Falco tinnunculus*), located roughly 756m away. A table with the collated bird species can be found in **Appendix B**.

3.2.3 Crustacean

Within the ecological data search provided by SER, one record of a crustacean, the signal crayfish (*Pacifastacus leniusculus*), was revealed within the 2km search radius.

3.2.4 Fish

Within the ecological data search provided by SER, no fish records were revealed within the 2km radius.

3.2.5 Flora

Within the ecological data search provided by SER, 14 floral species were revealed. This includes 21 records of the protected bluebell (*Hyacinthoides non-scripta*). The nearest record is 845 metres away from the site grid reference. A table with the collated flora species can be found in **Appendix B**.

3.2.6 Invertebrates

Within the ecological data search provided by SER, 18 invertebrate species were revealed within 2km of the site. The nearest records include hornet (*Vespa crabro*), red wasp (*Vespula rufa*) and white ermine (*Spilosoma lubricipeda*), all located approximately 1,279m from the site.

3.2.7 Mammals

Within the ecological data search provided by SER, 12 mammal species were identified within the 2km search radius of the site, and six additional unidentified species of bat were recorded. The nearest record to the site was a brown hare (*Lepus europaeus*) located approximately 104m away. A table with the collated mammal species can be found in **Appendix B**.

3.2.8 Molluscs

Within the ecological data search provided by SER, one mollusc species, the large black slug (*Arion ater*), was revealed within the 2km search radius. The location has not been provided.

3.2.9 Reptiles

Within the ecological data search provided by SER, no reptile species were revealed within 2km of the site.

4. Field Survey

4.1 Habitats

The preliminary ecological appraisal revealed multiple habitats on site. The phase 1 habitat map, habitat codes and target notes for the site are located within **Appendix C**. The following habitats were recorded on site (in habitat code order):

4.1.1 A3.3 – Mixed Scattered Trees

The site has a tree lined perimeter, with apple (*Malus domestica*), beech (*Fagus sylvatica*), grey poplar (*Populus x canescens*), holly (*Ilex aquifolium*), ivy Lawson cypress (*Chamaecyparis lawsoniana*), oak (*Quercus* sp.), silver birch (*Betula pendula*) and sycamore (*Acer pseudoplatanus*). None of these trees contained any potential roosting features and it is anticipated that all these features will be retained.

4.1.2 J1.2 – Amenity Grassland

Amenity grassland makes up a significant portion of the site. At the time of the survey and with the recent mowing, it was not feasible to identify the species however it is assumed the amenity grassland is comprised of typical turf species

4.1.3 J1.4 – Ornamental Shrub

This habitat is scattered throughout the site, with bamboo (*Bambusoideae* sp.), box (*Buxus sempervirens*), bramble (*Rubus fruticosus*), creeping thistle (*Cirsium arvense*) and heather (*Calluna* sp.) all present.

4.1.4 J2.5 – Drystone Wall

Along the driveway there is a drystone wall, holding back a raised ornamental flowerbed, suitable for a variety of wildlife which use the gaps between the stone to make their homes. This will not be affected by the work.

4.1.5 J3.6 – Buildings

The underground water tank proposed for conversion has been classified as a building. This feature is accessed through an inspection hatch, which remains shut. There are no access points into this feature for any protected species, including bats for hibernation purposes. Therefore, no further survey work is required on this habitat.

In addition to this, there is one above ground building. This is constructed of single-skinned brick, with a pitched clay tile roof. These tiles are in good condition, with no obvious gaps for bats or birds to get into the structure. The structure is currently used for storage, and is not proposed to be altered by the works.

Finally, one shed is present in the south-western corner of the site. This is single-skin timber, with a pitched felt roof. This building is once again used for storage, but is of little value to protected species. This structure will not be affected by the proposed works at the site.

4.1.6 J4 – Bare Ground and Hard Standing Ground

There is a variety of hard standing ground on site which comprises of an entrance driveway and a large concrete area which serves as the water tanks roof. A large patch of bare ground is also present on the site. No plants grow here. This habitat is of **negligible** protected species potential.

4.2 Species

The preliminary ecological appraisal survey revealed that the habitats that have been outlined for the proposed development area do contain protected species potential. The following assessment has also taken into account the adjacent habitats and connectivity to the wider landscape for all protected and rare species.

4.2.1 Amphibians (including Great Crested Newts)

The site itself does not have the potential to support amphibians. In addition to this, no known ponds are located within a 250m radius of the site. Therefore, no further action is required.

4.2.2 Badgers

During the field survey, no evidence of badger presence was found on the survey site or within the zone of influence from the proposed scheme of works.

4.2.3 Bats

No suitable roosting features for bats were identified on site. Therefore, no further action in relation to bats is required.

4.2.4 Birds

As no suitable habitats for breeding birds are to be removed or impacted by the proposed works, no further action is required.

4.2.5 Hazel Dormouse

The habitats on site are not suitable for supporting any hazel dormouse specimens. Therefore, no further survey work is required.

4.2.6 Hedgehogs

The site provides suitable habitat for hedgehogs and scattered evidence has been found on site suggesting that they are on, or at the very least, commute through the development site. Therefore, further precautionary measures are required for the survey site (please see Section 5.3).

4.2.7 Invertebrates

The site is not deemed to be of high value to invertebrates. Therefore, no further assessment is required.

4.2.8 Reptiles

The habitats on site do not have the potential to support reptiles. Due to this, no further action is required.

4.3 **Potential impacts of the works**

Based upon the results from the desktop survey, field survey and using a degree of academic supposition, the uncompensated development impacts have been summarised as follows:

- Amphibians – **Negligible**
- Badgers – **Negligible**
- Bats – **Negligible**
- Birds – **Moderate**
- Flora – **Negligible**
- Hazel Dormouse – **Negligible**
- Hedgehogs – **Moderate**
- Invertebrates – **Negligible**
- Reptiles – **Negligible**

5. Recommendations

5.1 Designated Sites

No designated sites revealed from the Ecological Data Set provided by SER were located on the site or directly adjacent to the site. Therefore, the proposed development will have no impact upon any designated sites as the works are due to remain within the site boundary.

5.2 Habitats

No habitats of conservation concern were located on the site itself. Therefore, the proposed scheme of works will not impact upon any rare or valuable habitats.

5.3 Species

The site was found to contain the potential to support protected and/or rare species. Therefore, the following recommendations are required for the site:

5.3.1 Hedgehogs (*Erinaceus europaeus*):

As a purely precautionary measure, it is recommended that provisions are incorporated during the construction phase. This will be to create provisions for hedgehogs to escape in the form of creating slopes or the inclusion of ramps at the end of each working day from all trenches dug into the ground. Additionally, any pipework left on site that is greater than 150mm in diameter will need to be planked off. Should this information be strictly adhered to, then the development works will not negatively impact on the local mammal populations.

Post development, at least two [Eco Hedgehog Nest Boxes](#) should be included into the site within an appropriate location. It is also recommended that small gaps are left within any boundary fencing (if used) to enable the specimens to continue to commute through the area (an example can be found within **Figure 3**). This will ensure that the local hedgehog populations do not become fragmented within the local landscape.

Figure 3: An image of an example hedgehog tunnel (obtained from RSPB).



5.4 Site Enhancements

For the proposed development works, the following site enhancement measures could be incorporated into the site post-development. These measures are optional but are bespoke to the site surveyed for the enhancement of biodiversity.

5.4.1 Flora

At present, the site is not considered to have a diverse range of flora. Therefore, it is recommended that a small section of the site is converted into a 'wild meadow' that uses native wildflower seed mixes. A variety of these can be found on the [Meadowmania](#) or [Wildflower Turf](#) webpages.

5.4.2 Invertebrates

At present, the site is not considered to be of any importance to local invertebrate populations. In conjunction with the wildflower planting, it is recommended that one [Bumblebee Box](#) are incorporated into the scheme, along with one [Bug Hotel](#). This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

5.5 Biodiversity Net Gain

Biodiversity Net Gain needs to be ensured within the scheme of works and this will be devised once the desktop study has arrived. This will allow measures to be targeted towards species known to be in the area.

6. References

- Bat Conservation Trust (2016). Bat Surveys – Good Practice Guidelines. 3rd Edition. Bat Conservation Trust: London.
- Berthinussen, A. & Altringham, J.D. (2012). The effect of a major road on bat activity and diversity. *Journal of Applied Ecology* 49: p.p. 82–89.
- Bickmore, C. J. (2002). *Hedgerow Survey Handbook*. London: DEFRA
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (2011).
- Circular 06/05 Biodiversity and Geological Conservation – Statutory Obligations and Their Impact System (2005).
- The Conservation of Habitats and Species Regulations 2017 (Amendment). SI 2017/1012.
- The Conservation (Natural Habitats, etc.) (Amendment) Regulations 2007. SI 2007/1843, London: HMSO.
- Countryside and Rights of Way Act 2000 (c.37). London: HMSO.
- Defra (2007a) *Securing a Healthy Natural Environment: an action plan for embedding an ecosystems approach*. PB12853. Defra London.
- Defra (2007b) *An Introductory Guide to Valuing Ecosystems Services*. PB12852. Defra London.
- Dietz, C., von Helversen, O. & Nill, D. (2009) *Bats of Britain, Europe and Northwest Africa*. London: A. C. Black.
- Hutson, A.M., Spitzenberger, F., Aulagnier, S., Coroiu, I., Karataş, A., Juste, J., Paunovic, M., Palmeirim, J. & Benda, P. (2008) *Pipistrellus pipistrellus*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1.
- Institute of Ecology and Environmental Management, Professional Guidance Series.
- Institute of Ecology and Environmental Management (2006), *Guidelines for Ecological Impact Assessment in the United Kingdom*.
- Institute of Environmental Assessment (1995). *Guidance for Baseline Ecological Assessment*.
- Joint Nature Conservation Committee (2005). *The Marine Habitat Classification for Britain and Ireland, Version 04*.
- Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a technique for environmental audit*.
- Millennium Ecosystem Assessment (2005).
- National Planning Policy Framework (2018).
- The natural choice: securing the value of nature (2011) (Natural Environment White Paper).
- Natural Environment and Rural Communities (NERC) Act 2006.
- RSPB (2002). *The Population Status of Birds in the UK*.
- RSBP (2009). *Birds of Conservation Concern 3*.
- Rydell J & Racey, P A (1993) Street lamps and the feeding ecology of insectivorous bats. Recent Advances in Bat Biology, Zool Soc Lond Symposium abstracts.
- UK Biodiversity Action Plan (2007). UK List of Priority Species. Joint Nature Conservation Committee.
- Wildlife and Countryside Act 1981 (and amendments) (c.69). London: HMSO.

7. Appendices

Appendix A: Site Plans

Appendix B: Ecological Data Search Species Lists

Appendix C: Phase 1 Habitat Map

Appendix D: Site Photographs

Appendix E: Biodiversity Legislation and Policy

Appendix F: Bats and Artificial Light

Appendix A: Site Plans

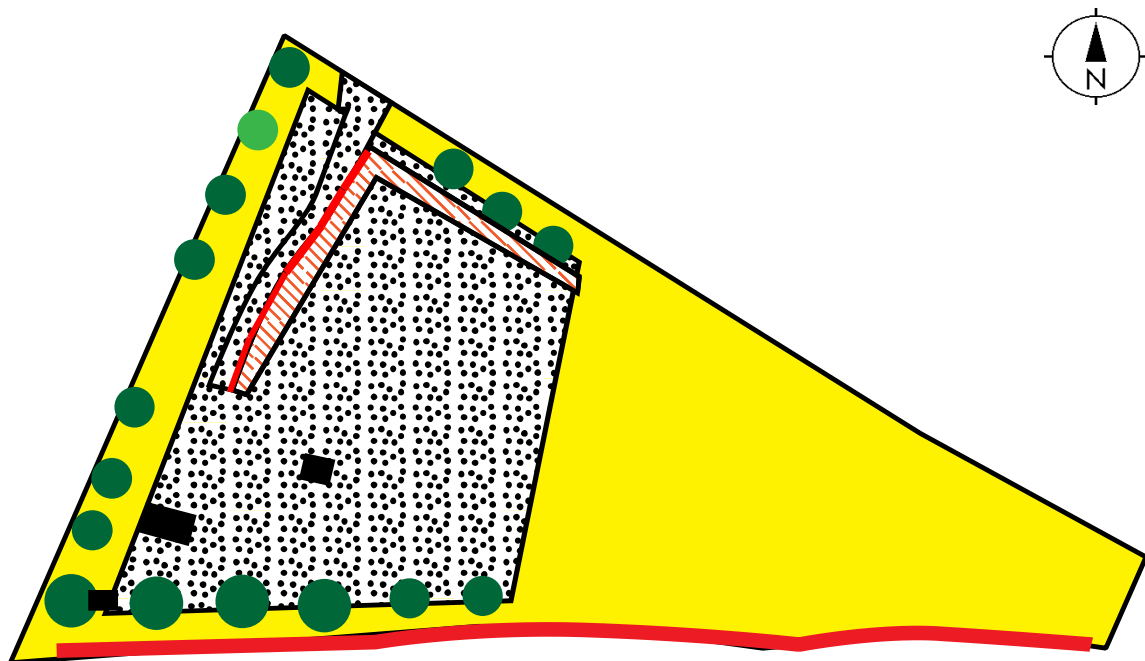
Elite Ecology has not been provided with a copy of the site plans at the production of this report.

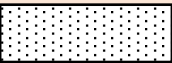
Appendix B: Ecological Data Search Species Lists

Amphibians	
Common Name	Latin Name
Common Toad	<i>Bufo bufo</i>
Birds	
Common Name	Latin Name
Barn Owl	<i>Tyto alba</i>
Black Redstart	<i>Phoenicurus ochruros</i>
Black-headed Gull	<i>Chroicocephalus ridibundus</i>
Black-tailed Godwit	<i>Limosa limosa</i>
Brambling	<i>Fringilla montifringilla</i>
British Dipper	<i>Cinclus cinclus subsp. gularis</i>
Bullfinch	<i>Pyrrhula pyrrhula</i>
Common Crossbill	<i>Loxia curvirostra</i>
Cuckoo	<i>Cuculus canorus</i>
Curlew	<i>Numenius arquata</i>
Dipper	<i>Cinclus cinclus</i>
Dunnock	<i>Prunella modularis</i>
Fieldfare	<i>Turdus pilaris</i>
Gadwall	<i>Anas strepera</i>
Golden Plover	<i>Pluvialis apricaria</i>
Grey Partridge	<i>Perdix perdix</i>
Grey Wagtail	<i>Motacilla cinerea</i>
Greylag Goose	<i>Anser anser</i>
Hawfinch	<i>Coccothraustes coccothraustes</i>
Hobby	<i>Falco subbuteo</i>
House Martin	<i>Delichon urbicum</i>
House Sparrow	<i>Passer domesticus</i>
Kestrel	<i>Falco tinnunculus</i>
Kingfisher	<i>Alcedo atthis</i>
Lapwing	<i>Vanellus vanellus</i>
Lesser Black-backed Gull	<i>Larus fuscus</i>
Lesser Redpoll	<i>Acanthis cabaret</i>
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>
Linnet	<i>Linaria cannabina</i>
Mallard	<i>Anas platyrhynchos</i>
Mistle Thrush	<i>Turdus viscivorus</i>
Peregrine	<i>Falco peregrinus</i>
Pied Flycatcher	<i>Ficedula hypoleuca</i>
Pink-footed Goose	<i>Anser brachyrhynchus</i>

Red Kite	<i>Milvus milvus</i>
Redstart	<i>Phoenicurus phoenicurus</i>
Redwing	<i>Turdus iliacus</i>
Ring Ouzel	<i>Turdus torquatus</i>
Ruddy Shelduck	<i>Tadorna ferruginea</i>
Skylark	<i>Alauda arvensis</i>
Snipe	<i>Gallinago gallinago</i>
Snow Bunting	<i>Plectrophenax nivalis</i>
Song Thrush	<i>Turdus philomelos</i>
Spotted Flycatcher	<i>Muscicapa striata</i>
Starling	<i>Sturnus vulgaris</i>
Stock Dove	<i>Columba oenas</i>
Swift	<i>Apus apus</i>
Tawny Owl	<i>Strix aluco</i>
Teal	<i>Anas crecca</i>
Tree Sparrow	<i>Passer montanus</i>
Whimbrel	<i>Numenius phaeopus</i>
Willow Warbler	<i>Phylloscopus trochilus</i>
Wood Warbler	<i>Phylloscopus sibilatrix</i>
Woodcock	<i>Scolopax rusticola</i>
Yellow Wagtail	<i>Motacilla flava</i>
Crustacean	
Common Name	Latin Name
Signal Crayfish	<i>Pacifastacus leniusculus</i>
Flora	
Common Name	Latin Name
Black Poplar	<i>Populus nigra subsp. betulifolia</i>
Bluebell	<i>Hyacinthoides non-scripta</i>
Box	<i>Buxus sempervirens</i>
Bramble	<i>Rubus intensor</i>
Bramble	<i>Rubus painteri</i>
Curly Waterweed	<i>Lagarosiphon major</i>
Indian Balsam	<i>Impatiens glandulifera</i>
Ivy-leaved Bellflower	<i>Wahlenbergia hederacea</i>
Japanese Knotweed	<i>Fallopia japonica</i>
Long-stalked Pondweed	<i>Potamogeton praelongus</i>
Monk's-rhubarb	<i>Rumex alpinus</i>
New Zealand Pigmyweed	<i>Crassula helmsii</i>
Rhododendron ponticum	<i>Rhododendron ponticum</i>
Water-soldier	<i>Stratiotes aloides</i>

Invertebrates	
Common Name	Latin Name
Buff-Tailed Bumble Bee	<i>Bombus terrestris</i>
Bumble Bee	<i>Bombus</i>
Cinnabar	<i>Tyria jacobaeae</i>
Common Carder Bee	<i>Bombus pascuorum</i>
Common Wasp	<i>Vespula vulgaris</i>
Early Bumble Bee	<i>Bombus pratorum</i>
Hornet	<i>Vespa crabro</i>
Indet. Bee	<i>Apidae</i>
Knot Grass	<i>Acronicta rumicis</i>
Large Red Tailed Bumble Bee	<i>Bombus lapidarius</i>
Red Wasp	<i>Vespula rufa</i>
Small Garden Bumble Bee	<i>Bombus hortorum</i>
Small Heath	<i>Coenonympha pamphilus</i>
Tawny Mining Bee	<i>Andrena fulva</i>
Tree Bumblebee	<i>Bombus hypnorum</i>
Western Honey Bee	<i>Apis mellifera</i>
White Ermine	<i>Spilosoma lubricipeda</i>
White-Tailed Bumble Bee	<i>Bombus lucorum</i>
Mammals	
Common Name	Latin Name
Brandt's Bat	<i>Myotis brandtii</i>
Brown Long-eared Bat	<i>Plecotus auritus</i>
Common Pipistrelle	<i>Pipistrellus pipistrellus sensu stricto</i>
Daubenton's Bat	<i>Myotis daubentonii</i>
Natterer's Bat	<i>Myotis nattereri</i>
Noctule Bat	<i>Nyctalus noctula</i>
Pipistrelle	<i>Pipistrellus pipistrellus sensu lato</i>
Pipistrelle Bat species	<i>Pipistrellus</i>
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>
Unidentified Myotis bat	<i>Myotis</i>
Whiskered Bat	<i>Myotis mystacinus</i>
Whiskered/Brandt's Bat	<i>Myotis mystacinus/brandtii</i>
Molluscs	
Common Name	Latin Name
Large Black Slug	<i>Arion (Arion) ater</i>

Appendix C: Phase 1 Habitat Map

KEY	
	A3.3 – Mixed Scattered Trees
	J1.2 – Amenity Grassland
	J1.4 – Ornamental Shrub
	J2.5 – Drystone Wall
	J3.6 – Buildings
	J4 – Bare Ground and Hard Standing Ground

Appendix D: Site Photographs**Plate 1:** View of the existing building structure not being altered at the surveyed site.**Plate 2:** View of the drystone wall with raised ornamental flowerbed at the survey site.

Plate 3: View of the amenity grassland at the survey site, surrounded by tree-lined perimeter.



Plate 4: Patch of bare ground located on the site (roof of the disused water tank), also showing the tree-lined perimeter.



Plate 5: Image of the current entrance to the underground water tank.



Appendix E: Biodiversity Legislation and Policy

General Legislation and Policy:

The framework of legislation and policy which underpins nature conservation in England. This is a material consideration in the planning process in England.

Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2010 as amended)

The Conservation of Habitats and Species Regulations 2017 consolidate and update the Conservation Regulations 1994 and the conservation of habitats and species regulations 2010 (and all their amendments). The Conservation of Habitats and Species Regulations 2017 are the principal means by which the EEC Council Directive 92/43 (The Habitats Directive) as amended is transposed into English and Welsh law.

The Conservation of Habitats and Species Regulations 2017 place duty upon the relevant authority of government to identify sites which are of importance to the habitats and species listed in Annexes I and II of the Habitats Directive. Those sites which meet the criteria are, in conjunction with the European Commission, designated as Sites of Community Importance, which are subsequently identified as Special Areas of Conservation (SAC) by the European Union member states. The regulations also place a duty upon the government to maintain a register of European protected sites designated as a result of EC Directive 79/409/EEC on the Conservation of Wild Birds (The Birds Directive). These sites are termed Special Protection Areas (SPA) and, in conjunction with SACs, form a network of sites known as Natura 2000. The Habitats Directive introduces for the first time for protected areas, the precautionary principle; that is that projects can only be permitted having ascertained no adverse effect on the integrity of the site. Projects may still be permitted if there are no alternatives, and there are imperative reasons of overriding public interest.

The Conservation of Habitats and Species Regulations 2017 also provide for the protection of individual species of fauna and flora of European conservation concern listed in Schedules 2 and 5 respectively. Schedule 2 includes species such as otter and great crested newt for which the UK population represents a significant proportion of the total European population. It is an offence to deliberately kill, injure, disturb or trade these species. Schedule 5 plant species are protected from unlawful destruction, uprooting or trade under the regulations.

The Wildlife and Countryside Act (WCA) 1981 (As amended)

The WCA, as amended, consolidates and amends pre-existing national wildlife legislation in order to implement the Bern Convention and the Birds Directive. It complements the Conservation (Natural Habitats. & c.) Regulations 1994 (as amended), offering protection to a wider range of species. The Act also provides for the designation and protection of national conservation sites of value for their floral, faunal or geological features, termed Sites of Special Scientific Interest (SSSIs).

Schedules of the act provide lists of protected species, both flora and fauna, and detail the possible offences that apply to these species.

The Countryside and Rights of Way (CROW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs.

The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Sections 41 (England) and 42 (Wales) list habitats and species of principal importance to the conservation of biodiversity. These lists supersede Section 74 of the CROW Act 2000. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

The Hedgerow Regulations make provision for the identification of important hedgerows which may not be removed without permission from the Local Planning Authority.

UK Biodiversity Action Plan

The United Kingdom Biodiversity Action Plan (UKBAP), first published in 1994 and updated in 2007, is a government initiative designed to implement the requirements of the Convention of Biological Diversity to conserve and enhance species and habitats. The UKBAP contains a list of priority habitats and species of conservation concern in the UK, and outlines biodiversity initiatives designed to enhance their conservation status. Lists of Broad and Local habitats are also included. The priority habitats and species correlate with those listed on Section 41 and 42 of the NERC Act.

The UKBAP requires that conservation of biodiversity is addressed at a County level through the production of Local BAPs. These are complementary to the UKBAP, however are targeted towards species of conservation concern characteristic of each area. In addition, a number of local authorities and large organisations have produced their own BAPs. UKBAP and Local BAP targets with regard to species and habitats are a material consideration in the planning process.

Planning Policy (England) and National Planning Policy Framework

In early 2012, the National Planning Policy Framework (NPPF) replaced much previous planning policy guidance, including Planning Policy Statement 9: Biological and Geological Conservation. The government circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System, which accompanied PPS9, still remains valid. A presumption towards sustainable development is at the heart of the NPPF. This presumption does not apply however where developments require appropriate assessment under the Birds or Habitats Directives. The latest National Planning Policy Framework was updated in February 2019, with the section in relation to conserving the natural environment being located within section 15.

Section 15, on conserving and enhancing the natural environment, sets out how the planning system should contribute to and enhance the natural and local environment by minimising impacts on biodiversity and, where possible, provide net gains in biodiversity. Opportunities to incorporate biodiversity gains into a development should be encouraged.

If a proposed development would result in significant harm to the natural environment which cannot be avoided (through the use of an alternative site with less harmful impacts), mitigated or compensated for (as a last resort) then planning permission should be refused.

Species Specific Legislation

This section contains a summary of legislation with relation to the species present or potentially present in the survey area. The reader should refer to the original legislation for definitive interpretation.

Nesting and Nest Building Birds

Nesting and nest building birds are protected under the Wildlife and Countryside Act WCA 1981 (as amended). Some species (listed in Schedule 1 of the WCA) are protected by special penalties.

Subject to the provisions of the act, if any person intentionally:

- kills, injures or takes any wild bird;
- takes, damages or destroys the nest of any wild bird while that nest is in use or being built; or
- takes or destroys an egg of any wild bird, he shall be guilty of an offence.

'Reckless' offences with regard to the disturbance of nesting wild birds included in Schedule 1 of the Wildlife and Countryside Act were added by the Countryside and Rights of Way Act 2000.

The Natural Environment and Rural Communities (NERC) Act 2006 places a duty on Government Departments to have regard for the conservation of biodiversity and maintains lists of species and habitats which are of principal importance for the purposes of conserving biodiversity in England and Wales. These lists include a number of bird species.

The reader is referred to the original legislation for the definitive interpretation.

Badger

The main legislation protecting badgers in England and Wales is the Protection of Badgers Act 1992 (the 1992 Act). Under the 1992 Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- possess a dead badger or any part of a badger;
- cruelly ill-treat a badger;
- use badger tongs in the course of killing, taking or attempting to kill a badger;
- dig for a badger;
- sell or offer for sale or control any live badger;
- mark, tag or ring a badger; and
- interfere with a badger sett by:
 - damaging a sett or any part thereof;
 - destroying a sett;
 - obstructing access to a sett;
 - causing a dog to enter a sett; and
 - disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger".

Bats

All species of bat are fully protected under a variety of domestic, European and international legislation and conventions. These include:

- Bern Convention (Appendix II)
- Bonn Convention (Appendix II)
- Conservation Regulations (Northern Ireland) 1995
- Conservation of Habitats and Species Regulations 2010
- Countryside Rights of Way Act 2000
- Eurobats Agreement
- Habitats Directive (Annexes IV and II)
- Habitats Regulations 1994 (as amended) Scotland
- NERC Act 2006
- Wildlife and Countryside Act 1981 (as amended)
- Wild Mammals Protection Act

In addition to this, some species have additional protection by being listed on the UK Biodiversity Action Plan (UKBAP).

The legislation afforded to bats makes it illegal to possess or control any live or dead specimens, to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a bat while it is occupying a structure or place which it uses for that purpose.

All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which protects birds, nests, eggs and nestlings from harm. In addition to this, some rarer species, such as barn owls are afforded extra protection.

National Planning Policy Framework, Section 15:

The published framework in 2018 replaces the previous Planning Policy Statement 9 and National Planning Policy (dated 2012).

Section 15: Conserving and enhancing the natural environment reaffirms the government's commitment to maintaining green belt protections and preventing urban sprawl, retains the protection of designated sites and preserves wildlife. It also aims to improve the quality of the natural environment and halt declines in species and habitats, protects and enhances biodiversity and promotes wildlife corridors.

Biodiversity 2020:

This sets out to halt overall biodiversity loss and support healthy well-functioning ecosystems by establishing coherent ecological networks, with more and better places for nature, to the benefit of wildlife and people. The government's policy is aimed at individuals, communities, local authorities, charities, business and government, which all have a role to play in delivering Biodiversity 2020.

Freshwater White-clawed Crayfish

The white-clawed crayfish is partially protected under Wildlife and Countryside Act 1981 (as amended). It is listed on schedule 5 and therefore afforded protection under Section 9 (1 and 5). Therefore, it is an offence to take white-clawed crayfish and to sell, or attempt to sell, any part of the species, alive or dead, or intend to buy or sell.

Great Crested Newt

The great crested newt (*Triturus cristatus*) is fully protected under a variety of legislation and conventions. These include:

- Bern Convention (Appendix II)
- Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
- Conservation of Habitats and Species Regulations 2010
- EU Habitats Directive (Annex II and IV)
- Nature Conservation (Scotland) Act 2004
- NERC Act 2006 (Section 41 England; Section 42 Wales)
- Wildlife and Countryside Act 1981 (as amended)

In addition to this, the great crested newt has been listed as a priority species on the UK Biodiversity Action Plan (UKBAP).

This legislation covers all aspects of newt life stages (eggs, efts and adult newts) and makes it illegal to damage, destroy or obstruct access to any structure or place used for shelter, protection or breeding, and to intentionally disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

Licenses can be obtained from Natural England (DEFRA) under the Conservation (Natural Habitats etc.) Regulations 1994, to permit activities for the purposes of:

- Regulation 44(2)(e): Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, or
- Regulation 44(2)(f): Preventing the spread of disease
- Regulation 44(2)(g): Preventing serious damage to any form of property or fisheries
- Or
- If there is no satisfactory alternative.

The above regulations allow people to carry out activities which would otherwise be illegal.

Hazel Dormouse

Hazel Dormouse and their habitats are protected by:

- Wildlife and Countryside Act 1981 (as amended)
- Countryside Rights of Way (CROW) 2000
- The Natural Environment and Rural Communities Act 2006
- Conservation of Habitat and Species Regulations 2010

These make it an offence to:

- Capture, injure or kill a Hazel Dormouse
- Disturb a Hazel Dormouse
- Damage or destroy breeding or nesting sites in use by Hazel Dormice
- Disturb a Dormouse whilst it is occupying a structure or place that they use for shelter or protection
- Obstruct access to any structure or place that the Dormouse uses for shelter and protection.
- To possess or control any live or dead specimens.

Otter

Otters are fully protected by the European Habitats Directive (92/43/EEC) by being incorporated in annex II of the legislation. In addition to this, otters are listed on schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take an otter.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by otters.
- To intentionally or recklessly disturb an otter whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell otters.

Reptiles

All six native reptiles within Great Britain are legally protected, with the extent of protection varying dependent upon their rarity and conservation importance.

Those that receive full protection under the Wildlife and Countryside Act 1981 (as amended) are the rare sand lizard and smooth snake. These species also receive protection under the Conservation (Natural Habitats &c.) Regulations 1994 (also referred to as the Habitats Directive). This means that they are protected from deliberate disturbance, killing, injury or capture and the habitat in which they live is also fully protected against damage or destruction. Any activity involving disturbance or damage to habitats utilised by sand lizards or smooth snakes would require a licence issued by the Department of the Environment, Food and Rural Affairs (DEFRA) following consultation with the statutory nature conservation organisation (Natural England).

The remaining four reptile species are 'partially protected' under the Wildlife and Countryside Act 1981 (as amended), with these species being slow-worm, common lizard, grass snake and adder. This means that these species are protected against intentional killing, injuring and against sale, but their habitat is not protected. In planning terms this means that the presence of these species is a material consideration and there is a requirement to ensure that any reptile interest is safeguarded. If a proposed development is likely to have an impact on these reptiles, then the statutory nature conservation organisation must be notified, particularly if capture and translocation is being proposed. In some parts of the UK, sites that support common reptile species such as common lizards and slow-worms can qualify as County Wildlife Sites. Sites of this designation may receive protection in planning policy.

Water Voles

Water Voles are fully protected under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- To intentionally kill, injure or take a water vole.
- To possess or control any live or dead specimens.
- To intentionally or recklessly damage, destroy or obstruct access to any structure, feature or place of shelter in use by water voles.
- To intentionally or recklessly disturb a water vole whilst it is in occupation of a feature or structure.
- To sell, possess or transport for the purpose of sale or publicly declare the desire to buy or sell water voles.

Non-Native Floral Species

It is an offence under schedule 9 of the Wildlife and Countryside Act 1981 (as amended) to plant or otherwise cause non-native flora to grow in the wild. This includes the transportation of earth that has previously had non-native species growing and includes the spread of the species.

All stands of non-native floral species need to be disposed of safely at a licenced landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

Appendix F: Bats and Artificial Light

Artificial lighting is known to affect bat's roosting and foraging behaviour, with lighting resulting in a range of impacts that includes roost desertion (BCT, 2009), delayed emergence of roosting bats (Downs et al., 2003), increased activity of some bat species and decreased activity by others (Stone et al., 2012).

An experimental approach using LED units, demonstrated that relatively fast-flying bat species, including the common pipistrelle, showed no significant impacts as a result of new artificial lighting, even when lighting was set at relatively high levels close to 50 lux.

In contrast, slow flying bats such as the myotis bats (*Myotis* spp.) showed sharp reductions in presence, even at low light levels of 3.6 lux (Stone et al., 2012).

Current recommendations for all bat species specifies that no bat roost should be directly illuminated.

Due to the impacts of lighting, mitigation and sensitive lighting design schemes are required for projects where bats are present. These should include bat friendly lighting plans that should aim to avoid lighting wherever possible. If this is not possible, then the minimisation of any lighting impacts is required by adopting the following measures:

➤ **To introduce lighting curfews or use of PIR sensors.**

Lighting curfews can be an effective way of avoiding impacts on bats. These curfews may involve either turning off lighting or dimming light units at specific times of the night, dimming units at key times of the year, providing the luminaire allows for this option via a control unit. Lighting to be triggered by PIR sensors can be expected to be illuminated only when required and for a low proportion of time.

➤ **To consider no lighting solutions where possible.**

Options such as white lining, good signage and LED cat's eyes should be considered as preferable. Reflective fittings may help make use of headlights to provide any necessary illumination in some areas.

➤ **To use only high pressure sodium or warm white LED lamps where possible.**

High pressure sodium and warm white LED lamps emit lower proportions of insect attracting UV light than mercury, metal halide lamps and white LED lighting. Generally, lamps should have a lower proportion of white or blue wavelengths, with a colour temperature <4200 kelvin recommended (BCT, 2014).

➤ **To minimise the spread of light.**

The light spread should be kept at or near horizontal to ensure that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Baffles, hoods, louvres and shields should be used where necessary to reduce light spill.

➤ **To consider the height of the lighting column.**

While downward facing bollard lighting is often preferable, it should be noted that a lower mounting height does not automatically reduce impacts to bats as bollard lighting can often be designed to provide up-lighting. Where bollard lighting is considered to be the most appropriate system, bollard spacing or unit density should be kept to a minimum and units should be fitted with the appropriate hoods/deflectors to reduce any up-lighting.

➤ **To avoid reflective surfaces below lights.**

The polarisation of light by shiny surfaces attracts insects increasing bat activity (BCT, 2012). Consequently, surface materials around lighting require consideration.

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