

Elite Ecology

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St Bega's Chapel, Cleator Moor



Preliminary Ecological Appraisal

October 2021



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0. Executive Summary

This report has been prepared at the request of Mr. Spencer Fretwell (Proprietor) on behalf of the client. Elite Ecology were commissioned to undertake a Preliminary Ecological Appraisal of St Bega's Chapel, Whitehaven Road, Cleator Moor, CA25 5PG (Central OS Grid Reference: NY 01091 15514). This survey effort involved both a desktop study and field survey being undertaken.

Under the current proposals, the existing structure on site it to be demolished and replaced with 3 new semi-detached dwellings and 4 detached dwellings.

Cumbria Biodiversity Data Centre (CBDC) were 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 and in the area surrounding. The phase 1 habitat map, habitat codes and target notes for the site are located within Appendix D. The following habitats were recorded on site (in habitat code order):

- ➢ A2.1 − Dense Scrub
- ➢ A3.3 − Scattered Trees
- C3.1 Tall Ruderal
- ➢ G2 − Running Water
- ➢ J2.5 Wall
- J2.6 Drainage Ditch
- J3.6 Buildings
- J4 Bare ground

No designated sites that were revealed by CBDC fell on the proposed re-development site itself. Therefore, the proposed re-development will have no impact upon any local 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.

Badgers: Although no badger setts were observed on or immediately offsite at the time of the survey, activity patterns of this species can change over a short time. There was evidence seen of tracks used by badgers so they are likely foraging within the site. It is therefore recommended that an update badger survey is undertaken if works do not commence within 6 months of the survey date (March 2022).

Additionally, during construction works, excavations should be left closed overnight, or a mammal ladder installed. The ladder needs to be of a size suitable for badgers and can be constructed out of a piece of wood/timber.

Bats: Due to the main house and outbuilding having low potential for bats, a minimum of one activity survey is required during the survey season of May to September. It has been deemed that five surveyors are required to adequately cover the structures.

Birds: All tree and shrub removal should be undertaken outside of the bird breeding season (the bird breeding season runs from March to August, inclusive). If vegetation and/or trees are required to be removed during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than 24 hours before these are to be removed. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to all active bird nests under the Wildlife and Countryside Act 1981. Adequate compensatory bird boxes are required to ensure no negative impacts are incurred by the works (see **section 5**).

Hedgehogs: If trees, scrub or dense vegetation is cleared between the 1st November and 31st March, then an inspection by a suitably qualified ecologist is required to ensure no hibernating hedgehogs are present on site. It is recommended that precautionary measures are incorporated if construction is undertaken at other times of the year. This will be to create provisions for hedgehogs to escape from all trenches dug into the ground, by creating slopes or providing ramps at the end of each working day. 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.

Reptiles: Due to the potential for reptiles to be present within the habitats located on the survey site, it will be necessary to undertake a full presence/absence survey for reptiles to assess the impacts the proposed scheme of works will have on the local reptile populations. This involves seven survey visits between April to October, avoiding July and August, with the optimal survey seasons being April, May and September.

Biodiversity Net Gain:

Biodiversity Net Gain needs to be ensured within the scheme of works and this will be devised utilising the latest DEFRA Metric.

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1 Introduction

1.1 <u>Report rationale</u>

This report has been prepared at the request of Mr. Spencer Fretwell (Proprietor). Elite Ecology were commissioned to undertake a Preliminary Ecological Appraisal of St Bega's Chapel, Whitehaven Road, Cleator Moor, Cumbria, CA25 5PG (Central OS Grid Reference: NY 01091 15514). This survey effort involved both a desktop study and field survey being undertaken.

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 the 2nd September 2021 by **Mr. Connor Wild**, MSc, Ecologist and **Mr. David Whitehead**, Assistant Ecologist.

1.2 Site description and works

The site is situated in a semi-rural setting in the town of Cleator Moor in the county of Cumbria.

The site consists of one building, tall ruderal, scattered scrub, hardstanding, and scattered trees and a brook. A small brook runs through the site near to the western boundary. Photographs of the site are found within **Appendix D**.

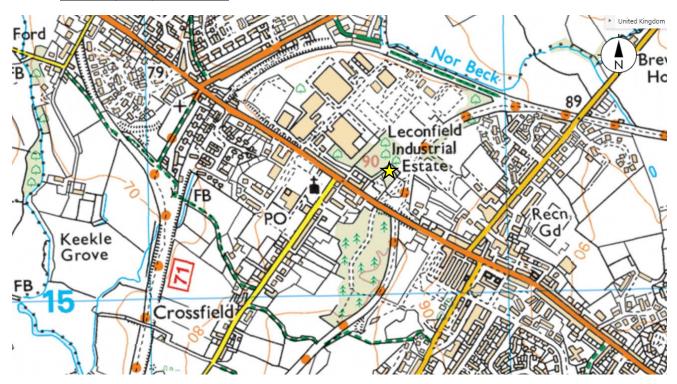
Within the wider landscape, further habitats are present. These come in the form of agricultural land, standing and running water bodies, woodland, residential structures (and their associated land/gardens), industrial units and hedgerows. The habitats that surround the site also have the potential to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

Under the current proposals, the existing structure on site is to be demolished, to be replaced with 3 new semi-detached dwellings and 4 detached dwellings. 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 St Bega's Chapel, Cleator Moor (yellow star) in relation to some of the local landscape.



Figure 2: An OS map taken from Bing Maps of St Bega's Chapel, Cleator Moor (as shown by the 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, <u>www.naturalengland.org.uk</u>, <u>www.ordnancesurvey.co.uk</u>, 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 2km of the proposed development site. Cumbria Biodiversity Data Centre (CBDC) 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 September 2021, which is inside 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 site's 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 <u>Statutory Sites</u>

The ecological data received from CBDC did not provide information on the presence of statutory protected site (e.g. LNR, SSSI, SPA, SAC or Ramsar) within the 2km search radius from the site.

3.2 Non-Statutory Sites

The ecological data received from CBDC did not provide information on the presence of non-statutory sites within the 2km search radius from the site.

3.3 Regionally Important Geological Sites (RIGS)

The ecological data received from CBDC did not provide information on the presence of RIGS sites within the 2km search radius from the site.

3.4 Ancient woodland

The ecological data received from CBDC did not provide information on the presence of Ancient woodland sites within the 2km search radius from the site.

3.5 Species Records

3.5.1 Amphibians: including Great Crested Newt (GCN)

Within the ecological data search provided by CBDC, 46 records of amphibian species were detected common frog (*Rana temporaria*), common toad (*Bufo bufo*), GCN (*Triturus cristatus*), palmate newt (*Lissotriton helveticus*) and smooth newt (*Lissotriton vulgaris*).

The most recent of these records is of smooth newt occurring approximately 200m from the proposed re-development site.

3.5.2 Birds

Within the ecological data search provided by CBDC, multiple bird species were detected. A table with the collated bird species recorded can be found within Appendix B.

The closest records to the site of interest are of buzzard (*Buteo buteo*) which were located 400m from the re-development site.

3.5.3 Crustacean

Within the Ecological Data Search provided by CBDC, no records of crustacean species were detected.

3.5.4 Invertebrates

Within the ecological data search provided by CBDC, multiple records of invertebrate species were detected. The closest records are of wall (*Lasiommata megera*) and latticed heath (*Chiasmia clathrata*), with this being sighted approximately 300m from the surveyed site.

3.5.5 Fish

Within the ecological data search provided by CBDC, one record of fish species was detected. This was of Atlantic salmon (*Salmo salar*).

3.5.6 Flora

Within the ecological data search provided by CBDC, 15 records of 8 species were identified. A table with the collated flora species recorded can be found within Appendix B.

The closest record is of Japanese knotweed (*Fallopia japonica*) located approximately 500m to the south-east of the site recorded.

3.5.7 Mammals

Within the ecological data search provided by CBDC, 247 records of 20 mammal species were recorded, including 8 bat species. The closest records to the site of interest are of Eurasian red squirrel (*Sciurus vulgaris*) located approximately 200m from the site.

3.5.8 Reptiles

Within the ecological data search provided by CBDC, one record of one reptile species were identified. This was of slow-worm (*Anguis fragilis*) located approximately 1,900m from the site.

4 Field Survey

4.1 <u>Habitats</u>

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

4.1.1 A2.1 – Dense Scrub

Scrub makes up the majority of the site and can be found to the south and west of the building on site. The species identified are bramble (*Rubus fruticosus*), gorse (*Ulex europaeus*), ground ivy (*Glechoma hederacea*) and Himalayan blackberry (*Rubus armeniacus*). This habitat has **moderate** protected species potential.

4.1.2 A3.3 – Scattered Trees

This habitat is found on the western boundary and in various other places to the north of the building. The species present on site include alder (*Alnus glutinosa*), pussy willow (*Salix caprea*) and silver birch (*Betula pendula*). This habitat has **moderate** protected species potential.

4.1.3 C3.1 – Tall Ruderal

Tall ruderal habitat can be found located primarily amongst certain section of the scrub in the southern section of the site. Species include dock (*Rumex obtusifolius*), downy vetch (*Vicia sativa*), field thistle (*Cirsium discolor*) and hogweed (*Heracleum sphondylium*). This habitat has **moderate** protected species potential.

4.1.4 G2 – Running Water

A small brook runs through the woodland near to the western boundary. This is to be retained and will not be affected by the proposed works. No evidence of otter (*Lutra lutra*) or water vole (*Arvicola amphibius*) were found on site.

4.1.5 J2.5 – Wall

A small portion of dry-stone wall is found along the eastern boundary of the northern section of the site. This habitat could be used as refugia by reptiles and small mammals, and as such is of **moderate** protected species' potential.

4.1.6 J2.6 – Drainage Ditch

There is one drainage ditch located on site near to the southern boundary. There was minimal water within the drainage ditches at the time of the survey. The banks of the drainage ditches are steep, and the proposed plans will not affect them.

4.1.7 J3.6 - Buildings

External Inspection:

The surveyed structure has cavity brick walls, with a pitched, clay tile roof. In addition to this, there are adjoining single-storey, flat-roofed sections on the western, eastern and northern elevations. The structure has a plastic fascia with a wooden soffit. One gap is apparent on the south-eastern aspect and there are some gaps in the mortar. At the front of the structure, there are also some gaps between the wooden fascia and the roof tiles and some of the lead flashing is slightly lifted. All of these gaps could be utilised by crevice-dwelling bats. No cracks or crevices in the external walls are apparent and all doors and windows are intact. The roof tiles are in good condition with very few lifted or dislodged tiles. No evidence of birds' nest have been found externally.

Internal Inspection:

The structure was inspected internally for evidence of roosting bats and nesting birds. The structure is currently in use for storage purposes. The internal inspection revealed a vaulted roof covered in plyboard. Some sections of the plyboard are missing revealing a bitumen felt under the roof tiles with timber beam support. No anecdotal evidence of bats such as droppings or feeding remains were identified. In addition to this, a lot of natural light is coming into the structure through the windows. No evidence of nesting birds was identified internally.

Summary of the building inspection

The structure has been deemed to have '**low'** potential for bats and '**negligible**' potential for birds to nest.

Therefore, a minimum of one activity survey is required during the bat survey season (May to September, inclusive).

4.1.8 J4 – Bare Ground

Bare ground makes up much of the site to the front of the property. The only species present are dandelion (*Taraxacum officinale*) and thistle (*Cirsium* sp.). This habitat is of **low** protected species potential.

4.2 <u>Species</u>

4.2.1 Amphibians (including GCN)

Although there is a small drainage ditch on site, this was not deemed to be suitable for amphibians. There are no other suitable waterbodies are on site and there are no ponds within a 500m radius of the site. Therefore, no further action is required.

4.2.2 Badgers

At the time of the P.E.A, no badger setts were recorded on site or within the sphere of influence of the works. However, possible evidence of badgers has been found to be within the area commuting through the site. In addition to this, some records of badger have been revealed from the ecological data search. Further action is required (**see section 5.3**).

4.2.3 Bats

The building on site shows **low** potential for bat roosting, and as such further survey effort is required.

No roosting features were noted within the trees on site.

The hedges and scrub on site offer good foraging and commuting for bats.

Please refer to **section 5.3** for the required further action.

4.2.4 Birds

The trees and scrub on site contain the potential to support nesting birds. Therefore, further measures are necessary for the survey site (**see section 5.3**).

4.2.5 Flora

No rare floral species were recorded on the survey site and no further action is required.

4.2.6 Hedgehogs

Hedgehogs are likely to commute through the site and as such, precautionary measures are required (**please see section 5.3**).

4.2.7 Invertebrates

The site itself is only though to support common species. Therefore, any impacts of the works will be of minimal impact to this species group. As such, no further surveys are required, although some enhancement guidance for invertebrates can be found in **section 5.5** of this report.

4.2.8 Otters and Water Vole

No evidence of otter (*Lutra lutra*) or water vole (*Arvicola amphibius*) were found on site. Additionally, the stream on site will not be affected by the proposed works. Therefore, no further action is required.

4.2.9 Reptiles

No evidence of reptile presence was found on site during the initial site survey. However, the scrub and tall ruderal habitats are suitable for reptiles and there is not much disturbance within these areas. The site is well connected to additional suitable reptile habitat, with further action being required (**please see section 5.3**).

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 – Low

No suitable water bodies are on site. No ponds within a 500m radius of the site.

Badgers – Low

Some possible signs of badger activity were uncovered on the survey site. However, activity patterns of this species can change over a short time and badgers are known to be in the area from the ecological data search.

Bats – Unknown

The main building and outbuilding show high potential for bat roosting. Without further survey, it is unknown what the impacts will be.

> Birds – High

The trees and scrub on site contain the potential to support nesting birds.

> Flora – Negligible

No protected or rare floral species were identified on the survey site.

Hedgehogs – Moderate

Hedgehogs are likely to commute through the survey site. As such, the proposed re-development works may impact negatively on hedgehogs without any compensation and mitigation.

Invertebrates – Low

The habitats on site are generally common and do not provide much potential for rare invertebrate species.

> Otters – Low

No evidence of otters was found on site and the proposed works will not impact on any potential habitat.

Reptiles – Unknown

Scrub and tall ruderal habitats are suitable for reptiles and there is not much disturbance within these areas at this site. The site is well connected to additional reptile habitat. The impacts are unknown as their presence at the site is unknown.

> Water Voles – Low

The proposed works will not be of detriment to any potential water vole habitat under the current proposals, with no further surveys required.

5 Recommendations

5.1 Designated Sites

No designated sites that were revealed by the ecological data search provided by CBDC fell on the proposed re-development site itself. Therefore, the proposed re-development will have no impact upon any local designated sites as the works are due to remain within the site boundary.

5.2 <u>Habitats</u>

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

5.3 Species

The following are recommendations that are likely to be a minimum requirement for any future development of the site.

5.3.1 Badgers

Although no badger setts were observed on or immediately offsite at the time of the survey, activity patterns of this species can change over a short time. There was evidence seen of tracks used by badgers so they are likely foraging within the site. It is therefore recommended that an update badger survey is undertaken if works do not commence within 6 months of the survey date (March 2022).

Additionally, during construction works, excavations should be left closed overnight, or a mammal ladder installed. The ladder needs to be of a size suitable for badgers and can be constructed out of a piece of wood/timber.

5.3.2 Bats

Due to the main house and outbuilding having low potential for bats, a minimum of one activity survey is required during the optimal survey season of mid-May to August. It has been deemed that five surveyors are required to adequately cover the structures.

No artificial lighting is to be shone on any scattered trees, shrubs, linear features, woodland, or waterways. For the site itself, an artificial lighting plan is required. All lighting must avoid the features of interest for the local bat populations. This is required due to the habitats within the local landscape meaning there is likely to be foraging and commuting bats within the local landscape.

5.3.3 Birds

All tree, scrub and building removal should be undertaken outside of the bird breeding season (the bird breeding season runs from March to August, inclusive). If vegetation and/or structures are required to be removed during the bird breeding season, then a further inspection by a suitably qualified ecologist is required no more than 24 hours before these are to be removed. This is to ensure that no active nest site is illegally destroyed, due to the protection afforded to all active bird nests under the Wildlife and Countryside Act 1981. Adequate compensatory bird boxes are required to ensure no negative impacts are incurred by the works.

To compensate for the loss of nesting opportunities at the site, it is necessary to include the following bird boxes on site:

- > Three Robin and Wren FSC Nest Boxes.
- Three <u>Apex Bird Boxes.</u>
- Two Large Bird Nest Boxes.
- One <u>Eco Barn Owl Box</u>.

5.3.4 Hedgehogs

If trees, scrub or dense vegetation is cleared between the 1st November and 31st March, then an inspection by a suitably qualified ecologist is required to ensure no hibernating hedgehogs are present on site.

It is recommended that precautionary measures are incorporated if construction is undertaken at other times of the year. This will be to create provisions for hedgehogs to escape from all trenches dug into the ground, by creating slopes or providing ramps at the end of each working day.

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.

5.2.5 Reptiles

Due to the potential for reptiles to be present within the habitats located on the survey site, it will be necessary to undertake a full presence/absence survey for reptiles to assess the impacts the proposed scheme of works will have on the local reptile populations. This involves seven survey visits between April to October, avoiding July and August, with the optimal survey seasons being April, May and September.

5.4 <u>Site Enhancements</u>

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 <u>Meadowmania</u> or <u>Wildflower Turf</u> 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 <u>Bumblebee Box</u> are incorporated into the scheme, along with one <u>Bug Hotel</u>. This will enhance the site for the local invertebrate populations, which will thus attract species further up in the trophic level.

5.4.3 Hedgehogs

The site could be enhanced for the local Hedgehog (*Erinaceus europaeus*) population by installing <u>Eco Hedgehog Nest Boxes</u> around this area. This will create more opportunities for hedgehogs within the local landscape.

5.5 Biodiversity Net Gain

Biodiversity Net Gain needs to be ensured within the scheme of works and this will be devised utilising the latest DEFRA Metric.

6 References

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7 Appendices

Appendix A: Site Plans

Appendix B: The Ecological Data Tables

Appendix C: Phase 1 Habitat Map

Appendix D: Site Photographs

Appendix E: Biodiversity Legislation and Policy

Appendix F: Bats and Artificial Light

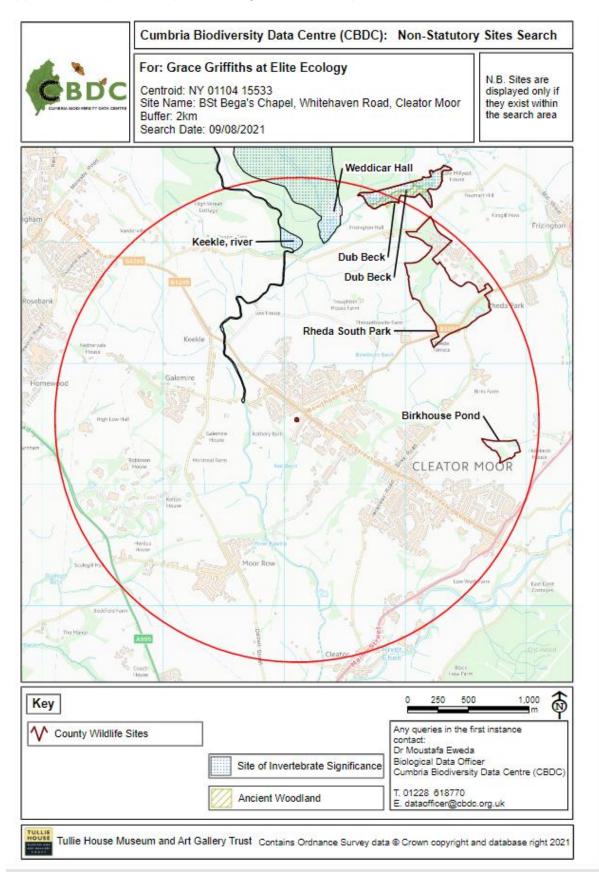
Preliminary Ecological Appraisal

Appendix A: Site Plans



Appendix B: The Ecological Data Tables

Appendix B1: Species map and Designated sites map



Appendix B3: Ecological data species list

Latin Name	Common Name
Amphibian	
Bufo bufo	Common Toad
Lissotriton helveticus	Palmate Newt
Lissotriton vulgaris	Smooth Newt
Rana temporaria	Common Frog
Triturus cristatus	Great Crested Newt
Bird	
Anas crecca	Teal
Acanthis cabaret	Lesser Redpoll
Acanthis flammea	Common (Mealy) Redpoll
Accipiter nisus	Sparrowhawk
Actitis hypoleucos	Common Sandpiper
Alauda arvensis	Eurasian Skylark
Alcedo atthis	Kingfisher
Anas platyrhynchos	Mallard
Anser anser	Greylag Goose
Anser brachyrhynchus	Pink-footed Goose
Anthus pratensis	Meadow Pipit
Anthus trivialis	Tree Pipit
Apus apus	Swift
Ardea cinerea	Grey Heron
Athene noctua	Little Owl
Aythya ferina	Pochard
Aythya fuligula	Tufted Duck
Branta canadensis	Canada Goose
Buteo buteo	Buzzard
Carduelis carduelis	Goldfinch
Certhia familiaris	Treecreeper
Chloris chloris	Greenfinch
Chroicocephalus ridibundus	Black-headed Gull
Cinclus cinclus	Dipper
Coloeus monedula	Jackdaw
Columba livia	Feral Pigeon
Columba oenas	Stock Dove
Columba palumbus	Woodpigeon
Corvus corone	Carrion Crow
Corvus frugilegus	Rook
Cuculus canorus	Cuckoo
Cyanistes caeruleus	Eurasian Blue Tit
Cygnus cygnus	Whooper Swan
Cygnus olor	Mute Swan
Delichon urbicum	Common House Martin

Dendrocopos major	Great Spotted Woodpecker
Emberiza citrinella	Yellowhammer
Emberiza schoeniclus	Common Reed Bunting
Erithacus rubecula	Robin
Falco tinnunculus	Kestrel
Ficedula hypoleuca	European Pied Flycatcher
Fulica atra	Eurasian Coot
Gallinago gallinago	Snipe
Gallinula chloropus	Moorhen
Garrulus glandarius	Jay
Haematopus ostralegus	Oystercatcher
Hirundo rustica	Swallow
Larus argentatus	European Herring Gull
Larus canus	Common Gull
Larus fuscus	Lesser Black-backed Gull
Larus marinus	Great Black-backed Gull
Linaria cannabina	Linnet
Locustella naevia	Grasshopper Warbler
Loxia curvirostra	Red Crossbill
Lymnocryptes minimus	Jack Snipe
Mareca penelope	Wigeon
Mareca strepera	Gadwall
Mergus merganser	Common Merganser
Motacilla alba	Pied Wagtail
Motacilla cinerea	Grey Wagtail
Muscicapa striata	Spotted Flycatcher
Numenius arquata	Curlew
Oenanthe oenanthe	Wheatear
Parus major	Great Tit
Passer domesticus	House Sparrow
Passer montanus	Tree Sparrow
Perdix perdix	Grey Partridge
Periparus ater	Coal Tit
Phalacrocorax carbo	Cormorant
Phasianus colchicus	Pheasant
Phoenicurus phoenicurus	Redstart
Phylloscopus sibilatrix	Wood Warbler
Phylloscopus trochilus	Willow Warbler
Pica pica	Eurasian Magpie
Picus viridis	European Green Woodpecker
Podiceps cristatus	Great Crested Grebe
Prunella modularis	Dunnock
Pyrrhula pyrrhula	Eurasian Bullfinch
Regulus regulus	Goldcrest

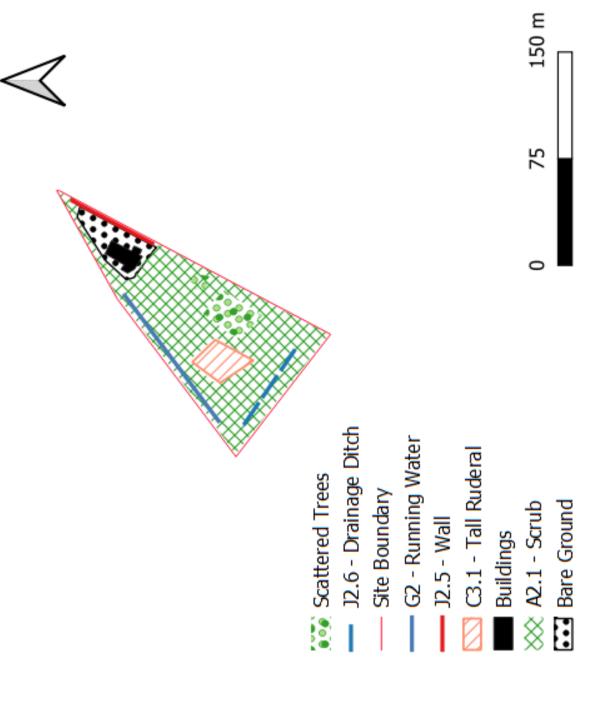
Riparia riparia	Sand Martin
Saxicola rubetra	Whinchat
Saxicola rubicola	Stonechat
Scolopax rusticola	Woodcock
Sitta europaea	Eurasian Nuthatch
Spatula clypeata	Shoveler
Spinus spinus	Siskin
Streptopelia decaocto	Collared Dove
Strix aluco	Tawny Owl
Sturnus vulgaris	Starling
Tachybaptus ruficollis	Little Grebe
Tringa nebularia	Greenshank
Tringa totanus	Redshank
Troglodytes troglodytes	Eurasian Wren
Turdus iliacus	Redwing
Turdus merula	Blackbird
Turdus philomelos	Song Thrush
Turdus viscivorus	Mistle Thrush
Vanellus vanellus	Lapwing
Fish	
Salmo salar	Atlantic Salmon
Flora	
Crocosmia pottsii x aurea = $C. x$	Montbretia
crocosmiiflora Dactylorhiza fuchsii	Common Spotted-orchid
Dactylorhiza purpurella	Northern Marsh-orchid
Fallopia japonica	Japanese Knotweed
Galanthus nivalis	Snowdrop
Hippophae rhamnoides	Sea-buckthorn
Hyacinthoides non-scripta	Bluebell
Impatiens glandulifera	Indian Balsam
Invertebrate	
Anax imperator	Emperor Dragonfly
Anthonomus rectirostris	Bird-Cherry Weevil
Arctia caja	Garden Tiger
Barynotus squamosus	Barynotus squamosus
Bembidion testaceum	Pale Pin-palp
Boloria selene	Small Pearl-bordered Fritillary
Cercyon nigriceps	Cercyon nigriceps
Chiasmia clathrata	Latticed Heath
Coenonympha pamphilus	Small Heath
Cordulegaster boltonii	Golden-ringed Dragonfly
Diarsia rubi	Small Square-spot
Dolycoris baccarum	Hairy Shieldbug
Ecliptopera silaceata	Small Phoenix

Elaphropus parvulus	Elaphropus parvulus
Elodes minuta	Elodes minuta
Erynnis tages	Dingy Skipper
Erynnis tages tages	Dingy Skipper
Gabrius bishopi	Gabrius bishopi
Grypus equiseti	Horsetail Weevil
Hipparchia semele	Grayling
Hydraecia micacea	Rosy Rustic
Laccobius atrocephalus	Scavenger Beetles
Lasiommata megera	Wall
Melanchra persicariae	Dot Moth
Microscydmus nanus	Microscydmus nanus
Nebrioporus depressus	Nebrioporus depressus
Orthetrum cancellatum	Black-tailed Skimmer
Orthetrum coerulescens	Keeled Orthetrum
Pachybrachius fracticollis	Pachybrachius fracticollis
Polygonia c-album	Comma
Pterostichus cristatus	Pterostichus cristatus
Scolopostethus grandis	Scolopostethus grandis
Stenus pusillus	Stenus pusillus
Sympetrum striolatum	Common Darter
Tabanus sudeticus	Dark Giant Horsefly
Thamiocolus viduatus	Thamiocolus viduatus
Tyria jacobaeae	Cinnabar
Xanthorhoe ferrugata	Dark-barred Twin-spot Carpet
Reptile	
Anguis fragilis	Slow-worm
Mammal	
Capreolus capreolus	Roe Deer
Cervus elaphus	Red Deer
Lutra lutra	European Otter
Meles meles	Eurasian Badger
Mustela nivalis	Weasel
Mustela putorius	Polecat
Neovison vison	American Mink
Chiroptera	Bats
Myotis daubentonii	Daubenton's Bat
Myotis mystacinus	Whiskered Bat
Myotis nattereri	Natterer's Bat
Nyctalus noctula	Noctule Bat
Pipistrellus	Pipistrelle
Pipistrellus pipistrellus	Pipistrelle
Pipistrellus pipistrellus	Common Pipistrelle
Pipistrellus pygmaeus	Soprano Pipistrelle

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Erinaceus europaeus	West European Hedgehog
Sorex araneus	Eurasian Common Shrew
Sorex minutus	Eurasian Pygmy Shrew
Lepus europaeus	Brown Hare
Oryctolagus cuniculus	European Rabbit
Sciurus carolinensis	Eastern Grey Squirrel
Sciurus vulgaris	Eurasian Red Squirrel

Appendix C: Phase 1 Habitat Map



Appendix D: Site Photographs

Plate 1: Woodland on the East boundary



Plate 2: Scattered scrub



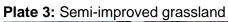




Plate 4: Tall ruderal habitat around the main house



Plate 5: Southern species poor hedge with trees.



Plate 7: Steel barns



Plate 8: Steel barn interior



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 NERCAct.

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 myotid 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 cats 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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No reliance should be made on any such comments in relation to the structural integrity of the features located on the surveyed site. All information within the report is based solely on evidence that has been found on site during the service provided. No individual opinion or inference will be made other than that of the suitably qualified ecologist appointed to the project.