



Preliminary Ecological Appraisal

Land of West Church Lane,
Climping

November 2021

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Vivid and Climping Homes Ltd

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Contents

1.	Introduction.....	1
2.	Methodology.....	2
3.	Baseline Conditions	5
4.	Evaluation	11
5.	Discussion and Recommendations	16
6.	Conclusions	21
7.	References	22
8.	Glossary of Terms.....	23

Appendices

Appendix A – Habitat map

Appendix B – Photographs and target notes

Appendix C – Legislation

Appendix D – Plant species list

Appendix E – Suggested compensatory planting

Appendix F – Bird and bat box designs

Non-technical Summary

Phlorum Ltd was commissioned by Vivid and Climping Homes Ltd to undertake a Preliminary Ecological Appraisal which was carried out at land west of Church Lane, Climping on the 3rd October 2020, in order to determine whether any ecological constraints could affect the proposed works for the site.

Current proposals are for the construction of a residential development to include the provision of green space. A new junction will be required between A259 and Church Lane. It is understood the woodland within the southern and western site extent will be retained with the exception of an area of hedge and trees within the south eastern site extent to make way for the new junction. Ponds will also be created as part of the plans. The survey area extended over approximately hectares 25 (ha).

The main findings of the surveys are as follows:

- ❖ The site is not subject to any statutory designations. The nearest statutory site is Climping Beach SSSI located 1.2km to the south east.
- ❖ Habitats present on the site consist of arable land, ruderal vegetation, hedge and trees, broad leaved semi natural woodland and evergreen hedgerow.
- ❖ The site had potential to support populations of bats, great crested newts, breeding birds and badgers.
- ❖ Further surveys in regard to great crested newts, badgers and bats are recommended to determine if and how they are using the site. A precautionary approach to breeding birds is recommended.
- ❖ Further information on precautionary working practices and additional surveys together with recommended mitigation and enhancement measures are discussed in Section 5.

1. Introduction

Background

- 1.1 Phlorum Ltd has been commissioned by Vivid and Climping Homes Ltd to undertake a Preliminary Ecological Appraisal, to inform the potential ecological constraints of proposed future development of land at Church Lane, Climping, West Sussex (hereafter referred to as “the site”).
- 1.2 The purpose of the Preliminary Ecological Appraisal was:
 - ❖ to identify the major habitats present;
 - ❖ to identify the potential for any legally protected species to be present; and
 - ❖ to recommend any additional ecological surveys, if required.
- 1.3 As part of the assessment, a desktop review and a site visit were carried out. The results of which were used to assess the nature conservation importance of the site and the potential of the site to support protected species.
- 1.4 This report has been compiled in accordance with current guidelines (British Standard 42020:2013 Biodiversity. Code of Practice for Planning and Development, 2013 and CIEEM, 2017 and 2018).
- 1.5 It is understood that the proposed development is for the construction of a new residential development. A new junction will be required between A259 and Church Lane. It is understood the woodland within the southern and western site extent will be retained with the exception of an area of hedge and tress within the eastern site extent to make way for the new junction. Ponds will also be created as part of the plans.

Site Description

- 1.6 The site at Church Lane is within a relatively rural location within the centre of Climping in West Sussex. The site is bounded to the north by residential housing, and Horsemere Green Lane and to the east by Church Lane. Yapton Road bounds the site to the west and Crookthorn Lane is directly south.
- 1.7 In wider surrounds, agricultural land dominates the landscape south, east and west with residential properties and commercial buildings to the north. Littlehampton is located approximately 1.5km to the east and the coastline is approximately 1.3km to the south.
- 1.8 The National Grid Reference for the centre of the site is grid reference TQ 00082 02044. The survey area extended over approximately 25 hectares (ha).

2. Methodology

Desk Study & Consultations

- 2.1 The desktop study involved conducting database searches for statutory and non-statutory designated sites, legally protected species and features of interest within a 2km radius of the site. The data search was based on available information provided by the following sources:
- ❖ Sussex Biodiversity Records Centre (SxBRC, 2020);
 - ❖ Multi-Agency Geographical Information for the Countryside (MAGIC, 2020);
 - ❖ Ordnance Survey mapping; and
 - ❖ Aerial photography.

Habitat Survey and Assessment

- 2.2 Phlorum Limited carried out an ecological survey of the site on 3rd October 2020. The survey was carried out by a suitably qualified ecologist, Kim Roll - Baldwin who has over two years professional experience of undertaking ecological surveys. The weather conditions during the survey were clear and dry.
- 2.3 The field survey comprised a walkover inspection of the land and habitats present. The survey followed standard Phase 1 survey methodology (JNCC, 2010) and covered all accessible parts of the site, including boundary features. Habitats were described and mapped (Figure 1: Appendix A). A list of plant species was compiled, together with an estimate of abundance made according to the DAFOR scale (Appendix D).
- 2.4 This assessment provides information on the habitats in the survey area and identifies actual or potential presence of legally protected or otherwise notable species/habitats in or immediately adjacent to the site.
- 2.5 Target notes highlighting a particular feature of ecological interest are provided in Appendix B, with associated photographs.
- 2.6 Scientific names are given after the first mention of a species, thereafter, common names only are used. Nomenclature follows Stace (2010) for vascular plant species.

Protected Species Assessment

- 2.7 The potential for the site to provide habitat for protected species was assessed from field observations in conjunction with results of the desk study. The site was inspected for indications of the presence of protected species including:

- ❖ Habitat considered suitable to support widespread reptile species including areas with a scrub/grassland mosaic and potential hibernation sites;
 - ❖ On-site ponds offering potential breeding opportunities for great crested newts (*Triturus cristatus*) and the presence of suitable terrestrial habitat including hedgerows and rough grassland;
 - ❖ The presence of features in, and on trees, indicating potential for roosting bats Chiroptera, including knot and rot holes, loose bark. Secondary evidence of bats including staining, droppings and feeding remains were also looked for;
 - ❖ The presence of nesting habitat for breeding birds, including mature trees, dense scrub and hedgerows and direct evidence of bird nesting including bird song, old nests etc.;
 - ❖ Habitats considered suitable to support badger (*Meles meles*) setts, and evidence in the form of hair, pathways and latrines;
 - ❖ Presence of woodland and or hedgerows providing suitable habitat to support hazel dormice (*Muscardinus avellanarius*); and
 - ❖ Riparian habitat supporting suitable features for water voles (*Arvicola amphibius*) and otters (*Lutra lutra*), and the
 - ❖ Presence of nationally protected and/or invasive plants.
- 2.8 The potential presence for protected species is categorised as **Negligible, Low, Moderate, High** or **Present**, based on the findings of the field survey and on the evaluation of existing data.
- 2.9 The purpose of this assessment is to identify whether more comprehensive Phase 2 surveys for protected species or mitigation should be recommended.

Caveat

Data Search Constraints

- 2.10 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Survey Constraints

- 2.11 Ecological surveys are limited by factors that affect presence of plants and animals such as seasonality. Whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the environment.
- 2.12 The survey was carried out at the end of the growing season and therefore many species may not have been visible above ground or readily identifiable.

- 2.13 The appraisal does not constitute a full botanical survey, or a Phase 2 pre-construction survey that would include accurate GIS mapping for invasive or protected plant species. This survey provides a preliminary view of the likelihood of protected species occurring on the site based on the suitability of the habitat, known distribution of the species in the local area and any direct evidence on the site. It is therefore used as a tool to recommend further protected species surveys (or other species of significant nature conservation interest) if on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present.
- 2.14 It is however considered that the survey was sufficiently rigorous to assess the ecological value of the site.

Limitations

- 2.15 This appraisal also does not constitute as a full invasive species survey. All surveys are subject to the conditions on site at the time of the survey. Site surveys are non-intrusive and rely on the visual identification of aboveground growth. If parts of a site are inaccessible then these areas can often not be surveyed, unless they can be viewed from other areas. If any aboveground growth is being managed or has been disturbed or covered, or the below ground growth is dormant, then it may be impossible for us to identify invasive plants in these areas during our non-intrusive survey.

3. Baseline Conditions

Aerial Photography and OS Maps

- 3.1 Aerial photographs and OS maps show the site to be predominantly arable land with a housing estate directly to the north of the site. The wider surrounds consist of a series of agricultural fields with an associated network of hedgerows.
- 3.2 There are no on-site water bodies. Aerial photography indicates there are seven ponds located within 500m of the site boundary.

Statutory and Non-Statutory Designated Sites

Statutory Sites

- 3.3 The closest statutory designated site is Climping Beach SSSI. Table 1 provides a list of Statutory sites within 2km of the site.

Table 1: Statutory Sites within 2km of the site

Site Name	Reason for Designation	Area (ha)	Distance from the Site (km)
Climping Beach SSSI	A vegetated shingle beach with a sand dune system behind. Plant communities including yellow horned poppy (<i>Gaillardia flavum</i>), sea kale (<i>Crambe maritima</i>) and sea beet (<i>Beta vulgaris</i>). The intertidal zone consists of soft mud and sands which support large population of marine invertebrates. The invertebrates are an important food source for wintering birds. 300 sanderling have been recorded in this site in winter – 1% of the European population,	65.8	1.2 South East

Non-statutory Sites

- 3.4 The closest non-statutory sites are the Climping Sand Dune System Local Geographic Site and the Littlehampton Golf Course and Atherington Beach LWS (local Wildlife Site). Table 2 provides a list of Non-Statutory sites within 2km of the site.

Table 2: Non-Statutory Sites within 2km of the site

Site Name	Reason for Designation	Area (ha)	Distance from the Site
Littlehampton Golf Course & Atherington Beach LWS	A dry fixed dune grassland with several rare plants including sea holly (<i>Eryngium maritimum</i>). The whole area is of ornithological importance particularly for migrant birds. Several pairs of reed warblers breed in small patches of reed.	45.8	1.7km South East
Elmer Rocks LWS	A shingle beach supporting a diverse flora. The only local site for Little Robin (<i>Geranium purpureum</i>). Ringed plovers attempt to nest in most years and many waders feed in the intertidal area.	20.1	1.9 South West

3.5 There are two designated road verges within 2km of the site, Eldon Wat and Bridge Road Littlehampton Designated Road Verge.

3.6 The Local Geological Site (LGS) Climping Sand Dune System Local Geographic Site is located 1.2 km south east.

Site Summary

3.7 The site comprised of arable land, ruderal vegetation, hedge and trees, broad leaved semi natural woodland and evergreen hedgerow.

3.8 The main habitats recorded within the site are described below. Additional details are shown on the habitat survey plan in Appendix A, and the target notes are listed in Appendix B.

Arable Land

3.9 The majority of the site consisted of an 'L' shaped field used for growing crops (Photograph 1 in Appendix B).

Ruderal Vegetation

3.10 The northern boundary of the site consisted of a small areas of ruderal vegetation with species mallow (*Malva sylvestris*), stinging nettles (*Urtica dioica*), broad leaved dock (*Rumex obtusifolius*), cow parsley (*Anthriscus sylvestris*), and perennial rye grass (*Lolium perenne*) (Photo 2 in Appendix B).

Hedge and Trees

- 3.11 The eastern boundary of the site consisted of rows of trees with species such as hawthorn (*Crataegus monogyna*), sycamore (*Acer pseudoplatanus*), and oak (*Quercus* sp.) (Photo 3 in Appendix B).

Broad Leaved Woodland

- 3.12 The southern boundary of the site consisted of an area of broad-leaved woodland which connected to an area adjacent off the site with a diverse structure comprising of young and mature trees. Species included silver birch (*Betula pendula*), ash (*Fraxinus excelsior*), beech (*Fagus sylvatica*) and English oak (*Quercus robur*). Parts of this woodland had an understory of brambles (*Rubus fruticosus* agg) and ivy (*Hedera helix*) (Photo 4 in Appendix B). Several of the trees were obscured with thick ivy.
- 3.13 The western boundary of the site consisted of a beech dominated planted woodland (Photo 5 in Appendix B). The trees in this area were semi mature with an understory of thick brambles at the field margin (Photo 6 in Appendix B). A few of the beeches were obscured by ivy.

Evergreen Hedgerow

- 3.14 A short area of evergreen hedgerow was present where houses bordered the site on the north west boundary (Photo 7 in Appendix B).

Protected Species

- 3.15 Legislation relating to the protected species referred to in this section is included in Appendix C.
- 3.16 The following paragraphs detail the suitability of the on-site habitats to support protected species and include information from the data search for protected, rare and otherwise notable species returned within a 2km radius.

Reptiles

- 3.17 The data search returned recent (post-2005) records of slow worms (*Anguis fragilis*), grass snake (*Natrix helvetica*), and common lizard (*Zootoca vivipara*) within 2km of the site.
- 3.18 The majority of the site consisted of arable land which is considered to be sub optimal for reptiles. Overall, the varied habitat structure favoured by reptiles for basking, foraging and hibernating was absent due to the nature of the site.
- 3.19 Overall, the site was assessed as having **low** potential to support reptiles.

Amphibians

- 3.20 The data search returned recent (post-2005) records of great crested newt (*Triturus cristatus*), common toad (*Bufo bufo*), smooth newt (*Lissotriton vulgaris*) and common frog (*Rana temporaria*) within 2km of the site.

- 3.21 Aerial photographs and maps show ponds seven ponds within 500m of the site and two drainage ditches, with nearest located 100m south of the site.
- 3.22 The areas of on-site marginal woodland, hedgerow and scattered scrub provide suitable terrestrial habitat for great crested newts and other amphibians. The arable field may be used by great crested newts passing between off – site ponds.
- 3.23 Although the site is bound to the south, west and east by roads which may restrict movement of some amphibians in these directions these roads are not considered to pose a significant barrier to the movement of great crested newts.
- 3.24 It is considered that the site offers **negligible** potential for breeding newts and **moderate** potential for foraging and commuting newts.

Bats

- 3.25 The data search returned recent (post-2005) records of bats from the genera pipistrelle (*Pipistrellus*), long-eared (*Plecotus*), *Myotis*, serotine (*Serotinus*), and noctule (*Nyctalus*) occurring within the 2km search area.
- 3.26 During the survey potential bat roosting features were seen in the woodland on the southern and western boundary of the site. Trees with densely covered ivy and mature trees with split limbs were seen (TN1, TN2 and TN3). These features have the potential to support roosting bats. A photograph of TN2 is provided in Appendix B, Photograph 4.
- 3.27 The boundary trees and on-site woodland blocks provide suitable foraging and commuting habitat for bats and provide connectivity to offsite habitat to the east and west.
- 3.28 Overall the site and woodland and hedge habitat provide **moderate** potential for foraging and commuting bats. The habitat within the arable provides **negligible** potential for roosting bats, but the woodland, hedge and tree habitat provides **moderate** potential for roosting bats. Overall, it is considered that the site offers **moderate** potential for roosting bats.

Birds

- 3.29 Several Red or Amber listed Birds of Conservation Concern¹ (BoCC), and notable² bird species were returned by the data search that may utilise habitats within the site. Species include red kite (*Milvus milvus*), European herring gull (*Larus argentatus*), and starling (*Sturnus vulgaris*).

¹ Birds of Conservation Concern status is prioritised into high concern (Red), medium concern (Amber) and low concern (Green) (Eaton et al, 2009). Red-list species are those that are globally threatened according to the IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and have not shown a substantial recent recovery. Amber-list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations. Green-list species are those that fulfil none of the criteria.

² Notable Birds are based on a list of birds that are particularly scarce or vulnerable either at national or a regional level. The majority of these bird species are designated as Schedule 1 species, under the Wildlife and Countryside Act 1981 (as amended), or listed as red or amber-listed BoCC.

- 3.30 During the survey it was noted that the areas of broad-leaved woodland and hedge and trees on the western, southern and eastern border provided suitable habitat for breeding birds.
- 3.31 Overall, it is considered that the site offers **high** potential for breeding birds.

Badgers

- 3.32 Records for this species are kept confidentially and were not returned by the data search.
- 3.33 During the survey no setts or secondary signs of badgers such as footprints or hairs were observed. Due to the large size of the site secondary signs may have been missed.
- 3.34 Overall, it was considered the site offered **moderate** potential for breeding badgers and **moderate** potential for foraging badgers.

Hazel Dormice

- 3.35 The data search returned no recent (post-2005) records of hazel dormice (*Muscardinus avellanarius*) within 2km of the site.
- 3.36 The areas of woodland on site were not considered suitable for dormice due to the limited species diversity within the areas. The woodland was isolated from other suitable habitat and absence of other woodland blocks.
- 3.37 Overall, it was considered that the site offered **negligible** potential to support breeding dormice.

Other Mammals

- 3.38 The data search returned recent (post-2005) records of water vole (*Arvicola amphibius*) within 2km of the site. The data search returned no recent (post-2005) records of otter within 2km search area.
- 3.39 The site did not contain the aquatic habitat and vegetation of a type that would support breeding water vole or otter.
- 3.40 Overall, it was considered that the site offered **negligible** potential to support breeding water voles or otters and **negligible** potential to support commuting and foraging water voles or otters.

Stag Beetles

- 3.41 The data search returned no recent (post-2005) records of stag beetle (*Lucanus cervus*) within 2km of the site.
- 3.42 No direct evidence of stag beetles was seen on the site. However, the presence of dense vegetation could have provided the dead wood required for this species.
- 3.43 Overall, the site offered **low** potential for stag beetle.

Invasive Plants

- 3.44 The data search returned recent (post-2005) records of Japanese knotweed (*Reynoutria japonica*), giant hogweed (*Heracleum mantegazzianum*), and Himalayan balsam (*Impatiens glandulifera*) occurring within the 2km. These plants are listed as invasive in Schedule 9 of the Wildlife and Countryside Act (1981 amended).
- 3.45 During the survey no invasive species were noted.

4. Evaluation

- 4.1 On the basis of the information available from the habitat survey and desk study, the site has been evaluated in terms of its potential for biodiversity, support of protected species and habitats, and the contribution the area makes as part of the wider landscape. The nature conservation value of the site has been assessed following standard criteria developed by CIEEM (2017 and 2018) and in accordance with BS 24040:2013. This is provided below.
- 4.2 The biodiversity value of protected species within the site is a preliminary evaluation based upon the desk study records, habitat suitability and the conservation status of the species in question. It should be noted that where European Protected Species (EPS) or species of Principle Importance for the Conservation of Biodiversity are present on-site they may be valued at a lower level/scale where it is considered likely that populations would not be of sufficient importance to justify designation at a higher level. However, regardless of their biodiversity value, such species are still subject to national and/or European legislation.
- 4.3 Key aspects of relevant planning policy regarding conservation, including an explanation of species referred to as being of 'Principal Importance for Conservation of Biodiversity' and European Protected Species and habitats, are provided in the Legislation section in Appendix C.

Geographic Evaluation

Features of International Importance

- 4.4 Features of International Importance are principally sites covered by international legislation or conventions. The Conservation of Habitats and Species Regulations 2017 (as amended) implements the Natural Habitats and Wild Fauna and Flora (92/43/EC) (Habitats Directive) in England and Wales. The Regulations mainly deal with the protection of sites with certain habitats and populations of species that are important for nature conservation in a European context, i.e. Special Areas of Conservation (SAC's) and Special Protection Areas (SPA's).
- 4.5 The site is not subject to any international statutory nature conservation designations. The closest site of International Importance is Arun Valley SPA located 10 km to the north. The site does not provide any supporting habitat for this designated site.

Features of National Importance

- 4.6 Features of national importance include SSSIs which are designated under the Wildlife and Countryside Act 1981 (as amended). The site is not subject to any national statutory nature conservation designations and it is not considered that any habitats or populations or assemblages of species within the site would meet the criteria for the designation of SSSIs at an appropriate geographic level³.
- 4.7 The closest site of national importance for nature conservation is Climping Beach SSSI located 1.4 km to the south east. The site does not provide any supporting habitat for this statutory designated site.

Features of Regional (i.e. Sussex) Importance

- 4.8 The site does not include any features of value at this level neither is it likely to be selected as a SNCI based on the results of the current survey.

Features of District (i.e. Littlehampton) Importance

- 4.9 The site is relatively small and does not support any features that were considered to be of value at this level.

Features of Local (i.e. Climping) Importance

- 4.10 The site does not support any features that were considered to be of value at this level.

Features of Value Immediate Vicinity (c. 250m) of the Project

- 4.11 The on-site vegetation is of value within the immediate vicinity and provides suitable habitat to support protected species including great crested newts, badgers, breeding birds and bats. It also forms part of the wider ecological network of habitats in the locality, providing wildlife corridors for mobile species to move through the landscape.

Summary

- 4.12 Overall, on the basis of the survey results and the above criteria, habitats within the site are considered largely to be of ecological value within the immediate vicinity only. The site provides suitable habitat to support several protected species and groups including great crested newts, badgers, breeding birds and bats. However, populations of these are unlikely to be locally significant.

Local Plan

- 4.13 It is considered that the statutory Arun Local Plan (Adopted 2011 - 2031) contains the following nature conservation policies relevant to the site. A summary of these policies is provided below. The full text of the relevant policies is contained in the Legislation section in Appendix C and this should also be referred to.

³ JNCC Guidelines for selection of biological SSSIs (see <http://jncc.defra.gov.uk/page-2302#download>).

Arun Local Plan (2011 - 2031)

Arun's Local Plan strategic objective for the Natural Environment is:

- ☞ "To plan for climate change and work in harmony with the environment to conserve natural resources and increase biodiversity."

Policy SD.SP2 Built-up Area Boundary

Built Up Area Boundaries are defined for the main towns and villages in the District and shown on the Policies Maps. Development should be focused within the Built Up Area Boundaries and will be permitted, subject to consideration against other policies of this Local Plan.

Policy CSP1 Countryside

Outside the Built-Up Area Boundaries (as identified on the Policies Maps) land will be defined as countryside and will be recognised for its intrinsic character and beauty. Development will be permitted in the countryside where it is:

- a. for the operational needs of agriculture, horticulture, forestry, the extraction of minerals or the management of waste as part of a waste site allocation within the West Sussex Waste Local Plan; or
- b. for quiet, informal recreation; or
- c. for green infrastructure; or
- d. for the diversification of the rural economy; or
- e. for road and/or cycle schemes; or
- f. in accordance with other policies in the Plan which refer to a specific use or type of development.

The Council will take into account cumulative impact of development in the consideration of planning applications. To ensure better management of the rural-urban fringe in those areas where significant new development is proposed, early consideration will need to be given to landscape and biodiversity enhancement, woodland management, recreation provision and access routes.

Policy ENV.SP1

Natural Environment Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites. Where possible it shall also promote the creation of new areas for habitats and species. In relation to designated sites, development will be permitted where it protects sites listed in Tables 17.1-17.7 that are recognised for the species and habitats contained within them.

Policy ENV.DM4: Protection of trees

Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

- a) Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or
- b) Would enhance the survival and growth prospects of other protected trees;
- c) The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme. Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given. Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- a) Land and tree surveys
- b) A tree constraints plan
- c) An arboricultural impact assessment to include a tree protection plan and arboricultural method statement

These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees.

Policy ENV DMS Development and Biodiversity

Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not).

Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces.

Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement. Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals.

All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.

5. Discussion and Recommendations

Discussion

- 5.1 The survey site is located at land west of Church Lane, Climping. The survey area extended over approximately 25 hectares (ha). Habitats to be impacted by the development proposals include arable land, ruderal vegetation, hedge and trees and broad-leaved woodland.
- 5.2 Design proposals include the creation of a new residential development to include the provision of a green space. A new junction will be required between A259 and Church Lane. The woodland in the southern and western site extent will be retained with the exception of an area of hedge and trees within the eastern site extent to make way for a new junction. The creation of ponds is included within the plans.
- 5.3 Habitats within the proposed development area were assessed as being of value to wildlife with the local vicinity with potential to support badgers, breeding birds, bats and great crested newts and these species may pose a constraint to works.
- 5.4 It is recommended that targeted surveys in respect to great crested newts, badgers and bats are undertaken in order to determine presence or likely absence.
- 5.5 In addition, a precautionary approach to site clearance in respect to breeding birds is recommended to minimise any adverse impacts on this species group.
- 5.6 Details regarding specific mitigation, including further surveys and precautionary working practices together with habitat enhancement measures are provided below.

Recommendations

Breeding Birds

- 5.7 The on-site broad-leaved woodland on the southern and west boundary and hedge and trees on eastern boundary provide suitable nesting habitat for a range of bird species. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended).
- 5.8 In order to avoid any potential impact on breeding birds, the clearance of any vegetation should be undertaken outside the main bird nesting season which runs from March to August inclusive⁴, with clearance works possible between September and February. Where this is not possible, an ecologist would need to check the vegetation for active nests and signs of bird breeding activity.

⁴ It should be noted that this is the main breeding period. Breeding activity may occur outside this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

- 5.9 In the event that a nest is found, an exclusion zone around the nest would be established. Works would have to cease within this buffer area until the young birds have fledged.

Great Crested Newts

- 5.10 Great crested newts receive protection under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended). Due to the potential for great crested newts to use on-site habitats, a great crested newt survey should be carried out to determine presence/likely absence and if present, the survey will enable a population assessment to be made.
- 5.11 All ponds within 500m of the site should be included in the survey. The survey protocol should follow that set out in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). An initial four surveys are required to demonstrate presence or absence and these must be carried out between mid-March and mid-June with two of those visits taking place within the peak survey time between mid-April and mid-May.
- 5.12 If great crested newts are found to be present, an additional two survey visits will then be required to allow a population size class assessment to be made, with at least one of these visits being undertaken within the peak survey time between mid-April and mid-May.
- 5.13 The results of the survey should then be used to inform mitigation proposals for this species.
- 5.14 If great crested newts are found to be present in the locality following the survey, a European Protected Species Mitigation Licence from Natural England may be required to remove aquatic or terrestrial habitat in order to facilitate the works. Once submitted, a licence application can take up to 30 days to be processed. Natural England will only grant a licence once planning permission has been received.
- 5.15 As part of the licence application, a Method Statement will need to be submitted to guide works in relation to this species. If individuals are found to be using the pond, suitable compensation measures to mitigate for losses to any aquatic habitat will be required in addition to undertaking a formal translocation to ensure individuals are not present within the development footprint. This process will involve fencing the development area and trapping and relocating newts over a number of weeks.

Badgers

- 5.16 The site has potential to support populations of badgers for both foraging and breeding. Despite no evidence of badgers being observed on the site as part of the woodland is due to be removed for the development a badger survey is required.

- 5.17 The badger survey will be undertaken in accordance with current guidelines (Cresswell et al. 1990) to determine the use of the site by badgers, and will include a systematic search for badger field signs including setts, pathways and latrines within the site and where permitting within 30m of the site boundary. Badger surveys can be undertaken at any time of the year.
- 5.18 The results of the survey will then be used to inform mitigation proposals for this species. Depending on the results of the survey, if works are considered likely to cause disturbance to a sett, it may be necessary to close the sett either temporarily or permanently in order to facilitate the works.
- 5.19 Any works to disturb badgers or badger setts at the site will need to be carried out under a development licence in respect to badgers. Such a licence would need to be obtained from Natural England once full planning permission is in place. The application will require the drafting of a detailed mitigation strategy including timing and construction methods in addition to the monitoring and exclusion measures proposed, if applicable. Natural England currently require 30 working days to determine a licence application.
- 5.20 In addition, due to the presence of badgers in the area, a series of general precautions are recommended and these will be incorporated into the mitigation strategy should a licence be required. This will include the following;
- 5.21 Throughout construction, all on-site contractors must be made aware of the presence of badgers in the locality and a tool box talk should be given by a qualified ecologist immediately prior to the start of construction works to discuss the potential for badgers to pass through the site and to provide information on legislation and the ecology of this species.
- 5.22 All trenches should be covered at night or if this is not possible, ramps must be installed into the trenches to enable badgers to escape should they enter the excavations. All materials must be stored safely and lids securely fitted
- 5.23 Full mitigation and site enhancement measures in respect to badgers will be devised following the badger survey.

Bats

- 5.24 Bats receive protection under The Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (as amended).
- 5.25 A ground based assessment to identify the potential use of trees in the south eastern area of the site by roosting bats is recommended. This should be undertaken in accordance with currently accepted guidelines.
- 5.26 A series of bat emergence/re-entry surveys on the trees with potential roosting features is recommended in order to provide information on if and how bats are using the site. Activity surveys can only be undertaken during the active period for bats taken to run between May and September. The result of the bat survey(s) can then be used to inform specific mitigation and enhancement measures for this species group. These surveys are undertaken and will be reported in a separate document.

- 5.27 If a bat roost is identified it may be necessary to undertake a subsequent climbed tree inspection of the tree(s) to examine any features and where a roost is likely to be impacted by the works, it may be necessary to obtain a European Protected Species Mitigation (EPSM) Licence before works can proceed and to complete necessary mitigation.
- 5.28 Such a licence would need to be obtained from Natural England once full planning permission is in place. The application will require the drafting of a detailed mitigation strategy including timing and construction methods in addition to the mitigation measures proposed. Natural England currently require 30 working days to determine a licence application.

Habitat Retention

- 5.29 All retained trees, including all adjacent off-site trees should be protected in accordance with British Standards (BS 2012) 5837:2012 Trees in Relation to Design, Demolition and Construction. The root protection areas of any retained trees must be left free from excavation and disturbance, and protected during any proposed works. Protection should be in the form of fencing and signs installed for the duration of the works.

Habitat Enhancement

- 5.30 New development offers the opportunity for habitat enhancement in accordance with national and local planning policy and some recommendations are included below.

Bird and Bat Boxes and Bricks

- 5.31 Additional bird nesting and bat roosting provision could be incorporated into new design proposals. These could either be installed on trees or incorporated into the new building design. Some recommendations are made below as a guide.
- 5.32 Bat roosting opportunities could be provided through the installation of boxes on the outside of the walls or remaining trees, such as the Schwegler 2F, or other makes of a similar design, such as Chavenage Bat box. There are a range of bat boxes available and these can be selected to suit the development and bat species in the locality.
- 5.33 Bird boxes could be installed on the walls of the new buildings or in the remaining trees which could include the following Schwegler bird house or 1B makes, or similar designs from alternative suppliers. If the client is happy for bird boxes to be installed on the walls of the new buildings then a Schwegler sparrow terrace 1SP could also be used.
- 5.34 Further details of the bird and bat boxes are provided in Appendix F.
- 5.35 Bat boxes should be installed at appropriate locations ideally with south-east, south, or south-west facing aspects at least 3m from ground level. Ideally they need to be exposed to 6-8 hours of direct sunlight, but sheltered from strong winds. If installed on the building, these should ideally be positioned directly below the eaves.

- 5.36 Bird Boxes should be located out of prevailing wind, rain, and strong sunlight, ideally with a clear flight path to the entrance. Ideally they should be installed two to four metres from the ground facing north or north-east.

Hedgehog and Wildlife Friendly Pathways

- 5.37 Hedgehogs are a rapidly declining species. By providing pathways hedgehogs, and other wildlife, will be able to migrate across the site.
- 5.38 Hedgehogs need short grass areas to search for invertebrate prey. Log piles and decaying vegetation are used to forage and hibernate in. Areas of leaf litter can be collected and used in nests. Dense scrub areas are also useful to build hibernation nests during winter. Hedgerows and other wildlife corridors allow hedgehogs and wildlife to migrate across a site. This is helped by installing hedgehog holes in fences (at least 13cm by 13cm) at ground level.

Compensatory Planting

- 5.39 Additional tree and shrub planting could be incorporated into the landscape proposals to compensate for any removal to facilitate the works. Planting should include a high proportion of native species and be of local provenance where possible. These should be carefully selected to ensure they contain species suitable for the area. Some species of known wildlife value are listed in Appendix E.

6. Conclusions

- 6.1 The site survey revealed the following habitats: arable land, ruderal vegetation, hedge and trees, broad leaved woodland and evergreen hedgerow.
- 6.2 The site is not subject to any statutory or non-statutory designations. The closest statutory site is Climping Beach SSSI located approximately 1.2 km to the south east at its closest point and the survey area does not support any features that contribute to the designation of this site.
- 6.3 The following protected species surveys are recommended in order to determine presence or likely absence:
 - ☛ Great crested newt;
 - ☛ Bats; and
 - ☛ Badgers.
- 6.4 In addition, a precautionary approach to vegetation clearance in respect to breeding birds is recommended to minimise any adverse impacts on this species group.
- 6.5 It has been recommended that the site is enhanced by introducing some compensatory planting and installing bat and bird boxes.

7. References

- ☛ Arun District Council, 2018. *Adopted Arun Local Plan 2011 – 2031 (July 2018)*.
- ☛ British Standards Institute (2012). 5837:2012. *Trees in Relation to Design, Demolition and Construction – Recommendations*. Standards Policy & Strategy Committee. Milton Keynes: BSI.
- ☛ British Standards Institute (2013). 24040:2013. *Biodiversity-Code of Practice for Planning and Development*. Standards Policy & Strategy Committee. Milton Keynes: BSI.
- ☛ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal Second Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.
- ☛ CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.
- ☛ Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.
- ☛ Department for Communities and Local Government (2019) *National Planning Policy Framework (NPPF)* (on-line). Available from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf [Accessed on 16/11/2020].
- ☛ ILP – Institute of Lighting Professionals (2018). Guidance Note 08/18 Bats and artificial lighting in the UK. Bats in the built environment series. ILP and the Bat Conservation Trust [on-line].
- ☛ Joint Nature Conservation Committee (2010). *Handbook for Phase 1 habitat survey - A technique for Environmental Audit*. JNCC, Peterborough.
- ☛ MAGIC - Multi-Agency Geographic Information for the Countryside (2019). *MAGIC Natural England*, Leeds. [on-line]. Available from: www.magic.gov.uk [Accessed on 16/11/2020].
- ☛ Stace, C.A. (2010). *New Flora of the British Isles* (3rd Ed.). Cambridge University Press, Cambridge.
- ☛ Schwegler (2018). *Bird and Nature Conservation Products* [on-line]. Available from <http://www.schwegler-natur.de> [Accessed on 16/11/2020].
- ☛ SBRxC, 2020. *Ecological Data Search for land west of Church Lane, Climping*. Unpublished report for Phlorum. Sussex Biodiversity Records Centre,

8. Glossary of Terms

BAP	Biodiversity Action Plan
BRC	Biological Records Centre
CIEEM	Chartered Institute of Ecology and Environmental Management
Habitats Directive	Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographical Information for the Countryside
NNR	National Nature Reserve
Nomenclature	The system of devising of names for plants
NPPF	National Planning Policy Framework
PEA	Preliminary Ecological Appraisal- formerly referred to as a Phase 1 Habitat Survey
SAC	Special Area of Conservation
SNCI	Site of Nature Conservation Interest
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest

Figures and Appendices

Appendix A

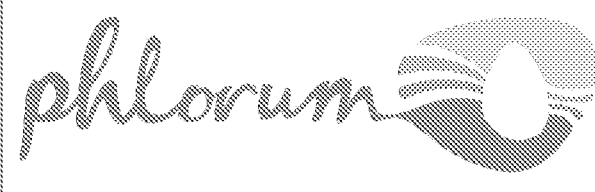
Habitat Map



Legend	
	Site Boundary
	Arable Land
	Ruderal Vegetation
	Hedge and Trees
	Broad-Leaved Semi-Natural Woodland
	Evergreen Hedgerow
	Target Notes

Figure 1: Land west of Church Lane, Climping

Drawn by: KR
 On: 17/11/2020
 Ref: 0700
 Not to scale



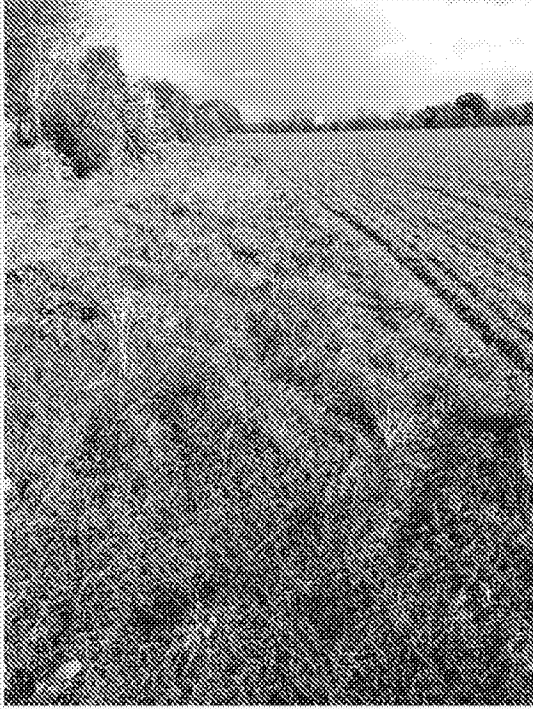
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 Woodingdean, Brighton, East Sussex,
 BN2 6AH

Appendix B

Photographs and Target Notes

Photographs and Target Notes

Photo No.	Feature (Target Note No.)	Photograph of Feature
1	View of site with arable land.	

2	Ruderal vegetation which is on northern border of the site.	
3	Trees with potential roosting features in the eastern boundary (TN1).	

4	Trees with potential roosting features on south west boundary of site (TN2).	
5	Boundary of beech trees on western border with a scrub understorey.	

6	Understorey of scrub in area of beech trees on western boundary of the site.	
7	Evergreen hedgerow on north west boundary of the site.	

Appendix C

Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive⁵ is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CROW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- ☛ Countryside and Rights of Way (CROW) Act 2000;
- ☛ Deer Act 1991;
- ☛ Natural Environment & Rural Communities (NERC) Act 2006;
- ☛ Protection of Badgers Act 1992; and
- ☛ Wild Mammals (Protection) Act 1996.

Badgers

Badgers and their setts are protected under the Protection of Badgers Act (1992), which consolidated and added to the previous Badger Acts of 1973 and 1991. Under this legislation it is an offence to:

- ☛ cruelly ill-treat a badger, including use of tongs and digging;

⁵ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- ☛ intentionally or recklessly cause a dog to enter a badger sett;
- ☛ intentionally or recklessly damage, destroy or obstruct access to a badger sett⁶ or any part thereof;
- ☛ intentionally or recklessly disturb⁷ a badger when it is occupying a badger sett;
- ☛ possess or control a dead badger or any part of a badger;
- ☛ sell or offers for sale, possesses or has under his control, a live badger; and
- ☛ wilfully kill, injure, take, or attempt to kill, injure or take a badger.

A Development Licence will be required from Natural England for any development works affecting an active badger sett, or to disturb badgers while individuals are occupying the sett. Depending on the nature of the works and the specifics of the sett, badgers could be disturbed by work near the sett even if there is no direct interference or damage to the sett itself. Natural England has issued guidelines on what constitutes a licensable activity. There is no provision in law for the capture of badgers for development purposes and therefore it is not possible to obtain a licence to translocate badgers from one area to another.

Bats

Bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This act protects individuals from:

- ☛ intentional or reckless disturbance (at any level);
- ☛ intentional or reckless obstruction of access to any place of shelter or protection; and
- ☛ selling, offering or exposing for sale, possession or transporting for purpose of sale.

In addition, all species of bat are fully protected under The Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- ☛ deliberate killing, injuring or capturing of Schedule 2 species (all bats);
- ☛ deliberate disturbance of bat species as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.

⁶ A badger sett is defined in the legislation as *"any structure or place which displays signs indicating current use by a badger"*. This includes seasonally used setts. Natural England (2009) have issued guidance on what is likely to constitute current use of a badger sett: www.naturalengland.org.uk/Images/WMLG17_tcm6-11815.pdf

⁷ For guidance on what constitutes disturbance and other licensing queries, see Natural England (2007) Badgers & Development: A Guide to Best Practice and Licensing. www.naturalengland.org.uk/Images/badgers-dev-guidance_tcm6-4057.pdf, Natural England (2009) Interpretation of 'Disturbance' in relation to badgers occupying a sett www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf, Scottish Natural Heritage (2002) Badgers & Development. www.snh.org.uk/publications/online/wildlife/badgersanddevelopment/default.asp and Countryside Council for Wales (undated) Badgers: A Guide for Developers. www.ccw.gov.uk

- ☛ deliberate disturbance of bat species as to affect significantly the local distribution or abundance of the species;
- ☛ damage or destruction of a breeding site or resting place; and
- ☛ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake activities listed above. A licence is required to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Breeding Birds

Under the Wildlife & Countryside Act, 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds, however, are not included in this definition (except for limited parts of the Act). They are covered by the Games Acts, which fully protect them during the closed season.

Under the Wildlife & Countryside Act, 1981 (as amended), all birds, their nests and eggs are protected under Sections 1-8 of the Act and it is an offence, with certain exceptions, to:

- ☛ intentionally (or recklessly in Scotland) kill, injure or take any wild bird;
- ☛ intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built;
- ☛ intentionally take or destroy the egg of any wild bird;
- ☛ have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act;
- ☛ have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act;
- ☛ use traps or similar items to kill, injure or take wild birds;
- ☛ have in one's possession or control any bird (dead or alive) unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations; and
- ☛ in Scotland only, intentionally or recklessly obstruct or prevent any wild bird from using its nest.

Certain rare species receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- ☛ intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- ☛ intentional or reckless disturbance of dependent young of such a bird;

- ☛ in Scotland only, intentional or reckless disturbance whilst lekking; and
- ☛ in Scotland only, intentional or reckless harassment.

The British Trust for Ornithology (BTO) has a list of birds that are Species of Conservation Concern. These birds are not legally protected but where they are found on site they should be given planning consideration. The criteria for birds listed as amber (medium conservation concern) include:

- ☛ historical population decline during 1800-1995, but recovering: population has more than doubled over last 25 years;
- ☛ moderate (25-49%) decline in UK breeding population over last 25 years;
- ☛ moderate (25-49%) contraction of UK breeding range over last 25 years;
- ☛ moderate (25-49%) decline in UK non-breeding population over last 25 years;
- ☛ species with unfavourable conservation status in Europe (Species of conservation Concern);
- ☛ five year mean of breeding pairs in the UK;
- ☛ ≥50% of UK breeding population in 10 or fewer sites;
- ☛ ≥50% of UK non-breeding population in 10 or fewer sites;
- ☛ ≥20% of European breeding population in UK; and
- ☛ ≥20% of NW European (wildfowl), East Atlantic Flyway (waders) or European (others) non breeding populations in UK.

Hazel Dormice

The hazel dormouse (*Muscardinus avellanarius*) is fully protected under The Conservation of Habitats and Species Regulations 2017 through its inclusion on Schedule 2. Regulation 41 prohibits:

- ☛ deliberate killing, injuring or capturing;
- ☛ deliberate disturbance as to impair its ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- ☛ deliberate disturbance as to affect significantly the local distribution or abundance of the species;
- ☛ damage or destruction of a breeding site or resting place; and
- ☛ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of this species.

The hazel dormouse is also currently protected under the Wildlife and Countryside Act 1981 (as amended) through its inclusion on Schedule 5. Under this Act, this species is additionally protected from:

- ☛ intentional or reckless disturbance;

- ☛ intentional or reckless obstruction of access to any place of shelter or protection; and
- ☛ selling, offering or exposing for sale, possession or transporting for purpose of sale.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect dormouse breeding or resting places (N.B. this is usually taken to mean dormouse 'habitat') or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above. The licence will allow derogation from the relevant legislation but will also to enable appropriate mitigation measures to be put in place and monitored.

Herpetofauna (Reptiles and Amphibians)

The following species receive full protection under the Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2.

- ☛ sand lizard (*Lacerta agilis*);
- ☛ smooth snake (*Coronella austriaca*);
- ☛ natterjack toad (*Epidalea calamita*);
- ☛ great crested newt (*Triturus cristatus*); and
- ☛ pool frog (*Pelophylax lessonae*).

Under this legislation, Regulation 41 prohibits:

- ☛ deliberate killing, injuring or capturing of species listed on Schedule 2;
- ☛ deliberate disturbance of any Schedule 2 species as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- ☛ deliberate disturbance of any Schedule 2 species as to affect significantly the local distribution or abundance of the species;
- ☛ deliberate taking or destroying of the eggs of a Schedule 2 species;
- ☛ damage or destruction of a breeding site or resting place; and
- ☛ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of a species.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- ☛ intentional or reckless disturbance (at any level);
- ☛ intentional or reckless obstruction of access to any place of shelter or protection; and

- ☛ selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species include:

- ☛ adder (*Vipera berus*);
- ☛ grass snake (*Natrix natrix*);
- ☛ common lizard (*Zootoca vivipara*); and
- ☛ slow-worm (*Anguis fragilis*).

Under this legislation, for these species it is prohibited under Section 9(1) & (5) to:

- ☛ intentionally (or recklessly in Scotland) kill or injure these species; or
- ☛ sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

The following species are listed in respect to Section 9(5) of Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) which only affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale:

- ☛ common frog (*Rana temporaria*);
- ☛ common toad (*Bufo bufo*);
- ☛ smooth newt (*Lissotriton vulgaris*); and
- ☛ palmate newt (*L. helveticus*).

Water Voles

The water vole (*Arvicola amphibius*) (= *terrestris*) is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- ☛ intentionally kill, injure or take (capture) this species;
- ☛ intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection;
- ☛ intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection; and
- ☛ sell, offer or expose for sale, or have in his possession or transport for the purpose of sale, any live or dead water vole or part of this species.

Where development works are liable to affect habitats known to support water voles, Natural England must be consulted. All alternative design options must have been explored and communicated to Natural England in order to demonstrate that works have tried to avoid contravening the legislation e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable etc. Conservation licences for the capture and translocation of water voles may be issued by Natural England for the purpose of development activities if it can be shown that the

activity has been properly planned and executed and thereby contributes to the conservation of the population.

Otters

Otters (*Lutra lutra*) are fully protected under The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2. Regulation 41 prohibits:

- ☞ deliberate killing, injuring or capturing of otters;
- ☞ deliberate disturbance as to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young; and
 - (ii) to hibernate or migrate.
- ☞ deliberate disturbance as to affect significantly the local distribution or abundance of the species;
- ☞ damage or destruction of a breeding site or resting place; and
- ☞ keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part of this species.

Otters also receive protection under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- ☞ intentional or reckless disturbance (at any level);
- ☞ intentional or reckless obstruction of access to any place of shelter or protection; and
- ☞ selling, offering or exposing for sale, possession or transporting for purpose of sale.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect breeding or resting places or for activities likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above. The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Wild Mammals

All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection) Act 1996. Under this legislation it is an offence to:

- ☞ mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention of this legislation, due care and attention should be taken when carrying out works that have the potential to impact any wild mammal as described above.

Plants

Wild plants are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Some rare plant species also receive full protection under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits:

- ☛ intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only); and
- ☛ selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or parts.

In addition to the legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2017. Regulation 45 makes it an offence to:

- ☛ deliberately pick, collect or destroy a wild Schedule 5 species; and
- ☛ be in possession of, or control, transport, sell or exchange any wild live or dead Schedule 5 species or anything derived from it.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect species of plant listed under The Conservation of Habitat and Species Regulations 2017.

Invasive Plant Species

Certain plants are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Species include:

- ☛ Japanese knotweed (*Reynoutria japonica*);
- ☛ giant hogweed (*Heracleum mantegazzianum*);
- ☛ Himalayan balsam (*Impatiens glandulifera*);
- ☛ certain species of rhododendron (*Rhododendron* sp.); and
- ☛ certain species of cotoneaster (*Cotoneaster* sp.).

Species listed are non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to:

- ☛ plant or otherwise cause these species to grow in the wild.

This legislation makes it is an offence to cause species listed to grow in the wild. Therefore, if they are present on site and development activities have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures are in place to prevent this.

Habitats

International Statutory Designations

- ☞ Special Protection Areas (SPAs): Terrestrial SPA's are afforded protection by The Conservation (Natural Habitats, &c. Regulations 1994 (as amended) and offshore SPA's are afforded protection under The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). SPAs are designated under the EC Birds Directive (Council Directive 2009/147/EC on the Conservation of Wild Birds). SPAs are areas recognised as important habitat for rare and migratory birds within the European Union (rare birds as listed on Annex I of the Directive).
- ☞ Special Areas of Conservation (SACs): These areas are designated under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora), designated for the habitats and (non-bird) species listed on Annexes I and II to the Directive under the same regulations as detailed for SPA's.
- ☞ Ramsar sites: These areas are wetlands designated under the Convention on Wetlands of International Importance (1971). Wetlands can include areas of marsh, fen, water or peatland and may be natural or artificial, permanent or temporary. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000.

National Statutory Designations

- ☞ Sites of Special Scientific Interest (SSSIs): These sites are designated by the countryside agencies (for example Natural England) under the Wildlife & Countryside Act 1981 (as amended). Prior to 1981 these were designated under the National Parks and Access to the Countryside Act 1949. Improved mechanisms for the protection of SSSIs have also been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).
- ☞ National Nature Reserves: These sites are also designated by the countryside agencies under the Wildlife & Countryside Act 1981 (as amended).

Local Statutory Designations

- ☞ 1949 Local Nature Reserves (LNRs): These sites are designated by local authorities under the National Parks and Access to the Countryside Act 1949. These are sites recognised for their wildlife or geological interest at a local level and are managed for nature conservation.

Non-Statutory Designations

- ☞ Local Wildlife Sites: Areas of local conservation interest may be designated by local authorities. The terminology for these sites varies depending on the county. They can be called Sites of Nature Conservation Importance (SNCI's), Sites of Importance for Nature Conservation (SINCs), County Wildlife Sites (CWS), Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs). The designation criteria may vary between counties. Local Wildlife Sites are of material consideration when planning applications are being determined.
- ☞ The Hedgerow Regulations 1997: These have been compiled to protect 'important' countryside hedgerows from damage or removal. A hedgerow is considered important if (a) has existed for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations. Under the Regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Hedgerows covered by these regulations include those on or adjacent to common land, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys.

National Planning Policy

- ☞ The National Planning Policy Framework (NPPF) (2019) replaces the former NPPF 2018 and 2012, and the former PPS9 document and emphasises the need for sustainable development. The Framework specifies the need to protect and enhance biodiversity and geodiversity. Identify and safeguard components of local wildlife-rich habitats and wider ecological networks including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors; and stepping that connect them. Plus partnerships for habitat management, enhancement, restoration or creation. The Framework aims to promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; appropriate mitigation or compensation measures are in place where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

Arun Local Plan (2011 – 2031)

7.2 Built up Area Boundary & Countryside

7.2.1 The Council seeks to protect the natural environment by strictly controlling development in the countryside. Countryside is an important designation encompassing those areas of the District which are outside the limits of the existing built development. For the purposes of this Plan it is defined as all land outside the defined Built-Up-Area-Boundary.

7.3 Green Infrastructure

7.3.1 The National Planning Policy Framework (NPPF) states that planning should encourage multiple benefits from the use of land in urban and rural areas, recognising that some open land can perform many functions (such as for wildlife, recreation, flood risk mitigation, carbon storage and food production). It also states that Local Planning Authorities should set out a strategic approach, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure.

7.3.2 The Government's Natural Environment White Paper(13) outlines a vision for the natural environment over the next 50 years. The Paper aims to take a strategic approach to planning for nature within and across local areas. This approach will guide development to the best locations, encourage greener design and enable development to enhance natural networks.

7.3.3 The Local Plan's strategic objectives recognise the need to take a strategic approach to encourage multiple benefits from the use of land in urban and rural areas and support the National Planning Policy Framework and the Government's Natural Environment White Paper.

7.3.4 The Local Plan will achieve these objectives by taking a strategic approach to managing the District's Green Infrastructure Network. This strategic approach to Green Infrastructure will be subject to regular review, taking account of the progress of the Local Plan as detailed in the Authority Monitoring Report. (Section 23 - Monitoring and the Monitoring Framework Technical Appendix) What is Green Infrastructure?

7.3.5 The National Planning Policy Framework (14)defines Green Infrastructure (GI) as "A network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities." 13 The Natural Choice: Securing the Value of Nature. Defra, June 2011 14 as published in March 2012 Adoption Arun Local Plan 2011-2031 (July 2018) Arun District Council 49 7 Settlement Structure & Green Infrastructure

7.3.6 The South East Green Infrastructure Framework uses the definition of GI in the South East Plan (2008). This definition identifies eleven types or typologies of GI and to this we have added an additional typology covering Beaches and Coastal Areas and features such as rifes and twittens which are terms locally specific to Arun (see Glossary for more detail). The typologies provide a helpful framework for identifying 'what' may be considered a GI asset in the District:

- Parks and gardens - including urban parks, country parks and formal gardens
- Natural and semi-natural urban green spaces - including woodlands,
- urban forestry,
- scrub Grasslands (e.g. downlands, commons and meadows)
- wetlands,
- flood plains,
- open and running water,
- wastelands and derelict open land and the coast Public Rights of Way including footpaths, cycleways, bridleways
- Outdoor sports facilities (with natural or artificial surfaces and either publicly or privately owned) - including tennis courts, bowling greens, sports pitches, golf courses, athletics tracks, school and other institutional playing fields, and other outdoor sports areas
- Amenity greenspace (most commonly, but not exclusively in housing areas) - including informal recreation spaces, green spaces in and around housing, domestic gardens and village greens
- Provision for children and teenagers - including play areas, skateboard parks, outdoor basketball hoops, and other more informal areas (e.g. 'hanging out' areas, teenage shelters) allotments, community gardens, and farms
- Cemeteries and churchyards
- Green roofs and walls
- Accessible countryside in urban fringe areas,
- and Rifes, rivers and the coastline

7.3.7 The aim of the Green Infrastructure Policy is to maintain and enhance the existing network of Green Infrastructure assets. The Policy will also aim to ensure that these assets provide multiple functions and benefits and help to protect and enhance the distinctive character of the District.

Why is Green Infrastructure Important?

7.3.8 Well connected GI assets perform a range of important functions relating to the natural environment, climate change mitigation and adaption and quality of life. The Arun District Green Infrastructure Study (June 2012) establishes that the GI assets which currently exist in the District perform the following seven primary functions:

1. Access links and access to recreation – the provision of sustainable transport and access routes and a variety of recreational opportunities for the widest range of social, interest and age groups;
2. Conserving and enhancing biodiversity – the provision of 'space for nature', areas that conserve or enhance wildlife habitats or provide new habitats;
3. Sense of place – the landscape assets and their settings that provide the local character and sense of place and help provide high quality environments in which people want to live and work;

4. Historic character – areas of importance to the historic character, including specific cultural heritage assets;
5. Productive green environments - areas that provide opportunities for local sustainable food and fuel production at the local level ('edible landscapes'), including allotments, community orchards, community gardens, urban farms, coppicing of local woodlands;
6. Sustainable water resources – provision of 'space for water', Sustainable Urban Drainage Systems (SUDS) and other areas that play a role in the sustainable management of water resources; and
7. Climate change – areas that provide for climate change adaptation through more flexible multi-functional approaches to urban and land

17.1 Natural Environment

17.1.1 People cannot flourish without the benefits and services our natural environment provides. Nature is a complex, interconnected system, a healthy, properly functioning natural environment is the foundation of sustained economic growth, prospering communities and personal wellbeing.

17.1.2 The NPPF states that to minimise the impacts on biodiversity and geodiversity local planning authorities must identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them, along with areas identified by local partnerships for habitat restoration or creation.

17.3 Trees & woodland

17.3.1 Trees and woodlands make a valuable contribution to the landscape and visual amenity of Arun. Trees are also vital to protecting development from the impacts of climate change to reduce higher temperatures and exposure to the sun. Trees, either individually or in groups, perform many functions such as shelter from wind, shade from the sun, act as a natural barrier, reduce flash flooding by intercepting rain fall, act as a natural air conditioner, absorb pollutants, and provide a biodiversity function in terms of provision of habitat and food sources. They are important producers of oxygen and act as carbon sinks. In urban settings trees or groups of trees can contribute significantly to the local environment and to the successful integration of new buildings into the landscape. The planting or retention of mature trees can contribute to amenity and more attractive developments as well as retaining important wildlife habitats. The retention of trees should be considered at the design stage of all developments.

17.3.2 Importance of ancient and other woodland, plus aged and veteran trees is recognised in paragraph 118 of the NPPF as being a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. In view of the remarkable value of ancient woodland, development involving

its loss or damage shall be avoided at all costs unless exceptional circumstances to merit any loss, can be justified.

17.4 Development & biodiversity

17.4.1 All development should enhance the biodiversity of the site and the surrounding area by creating new habitats or improving existing ones. In certain circumstances, a new resource should be provided which is of at least equivalent value, where possible, to a site or feature which is lost as a result of development. This could include the creation of a new habitat on the site or elsewhere if this is more appropriate. However, in general, the loss of habitats should be strongly resisted.

17.4.2 All redevelopment/refurbishment schemes and the existing historic structures and habitats affected by development, should be screened for use by protected species (such as bats) if these opportunities are known or believed to be so used. There can often be no obvious signs that these species are present, and as a result it may require expert knowledge and experience to be able to determine their presence.

17.4.3 Properties that contain these protected species will require the applicant to undertake additional work specific to the legal protection that they are offered. This includes the preparation of surveys and appropriate responsive designs. Property owners are also required to take extra care during the development phase of any project and plan for the effective management of the species after construction has finished.

17.4.4 All developments should have regard to Natural England's standing advice for protected species which clearly outlines what considerations must be taken into account when designing development schemes, in the interests of preserving and enhancing biodiversity

Appendix D

Plant Species List

Plant Species List

Scientific nomenclature follows Stace (2010) for vascular plant species and British Bryological Society (BBS) Special Volume No. 5 *English Names for British Bryophytes* for bryophyte species. Vascular plant common names follow the Botanical Society of the British Isles 2003 list, published on its web site, www.bsbi.org.uk. The plant species list was generated as part of a Phase 1 Habitat survey and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally

Key to qualifiers: G=garden origin, P=planted, Y = young, S=seedling or sucker, T=tree, H=hedge, W=water, ? = identification uncertain.

Scientific Name	Common Name	Abundance	Qualifier
<i>Acer pseudoplatanus</i>	Sycamore	O	T
<i>Anthriscus sylvestris</i>	Cow parsley	O	
<i>Betula pendula</i>	Silver birch	F	T
<i>Crataegus monogyna</i>	Hawthorn	F	H
<i>Fagus sylvatica</i>	Beech	F	T
<i>Fraxinus excelsior</i>	Ash	F	T
<i>Hedera helix</i>	Ivy	F	T
<i>Lolium perenne</i>	Perennial ryegrass	O	
<i>Malva sylvestris</i>	Mallow	O	
<i>Quercus robur</i>	Oak	F	T
<i>Quercus sp</i>	Oak sp	F	T
<i>Rubus fruticosus agg</i>	Bramble	F	
<i>Rumex obtusifolius</i>	Broad leaved dock	O	
<i>Sambucus nigra</i>	Elder	F	T
<i>Urtica dioica</i>	Stinging nettles	O	

Appendix E

Suggested Compensatory Planting

Suggested Compensatory Planting

This section provides a list of plants which are of proven value to wildlife. The list is not exhaustive and merely provides a guide for suggested planting for wildlife value. Planting should be tailored on a site by site basis. The list includes some native and ornamental species however the emphasis should always be on the use of predominantly native species.

N = Native, NN = Non-native.

This list includes species that may be harmful if handled or ingested. Schedule 9 (Part 2) of the Wildlife and Countryside Act, 1981 (as amended) includes a list of invasive plants, including aquatic species, that should always be avoided in planting schemes.

Large Shrubs

Hedge veronica/Hebe (*Veronica* spp.) NN

Hawthorn (*Crataegus monogyna*) N

Blackthorn (*Prunus spinosa*) N

Rose: dog rose (*Rosa canina*), field rose (*R. arvensis*), burnet rose (*R. pimpinellifolia*) N

California lilac (*Ceanothus* spp.), (*C. arborea*) NN

Wild privet (*Ligustrum vulgare*) N

Common holly (*Ilex aquifolium*) N

Barberry (*Berberis* spp.) (*B. darwinii*), (*B. thunbergii*), (*B. x stenophylla*) NN

Daisy Bush (*Olearia* spp.), (*O. x hastii*), (*O. macrodonta*) and (*O. traversii*) NN

Firethorn (*Pyracantha coccinea*) NN

Hazel (*Corylus avellana*) N (*C. maxima*) NN

Viburnum (*Viburnum* spp.), wayfaring tree (*V. lantana*) N, guelder rose (*V. opulus*) N, laurustinus (*V. tinus*) E Note: *V. lantana* can become invasive in more open habitats.

Dogwood (*Cornus sanguinea*) N

Broom (*Cytisus scoparius*) N

Escallonia (*Escallonia macrantha*) NN

Hardy fuchsia (*Fuchsia magellanica*) NN

Buckthorn (*Rhamnus cathartica*) N

Spindle (*Euonymus europaeus*) N

Tutsan (*Hypericum androsaemum*) N

Yew (*Taxus baccata*) N

Trees

Cherry (*Prunus* spp.), wild cherry (*P. avium*), bird cherry (*P. padus*), domestic plum (*P. domestica*) N or cherry plum (*P. cerasifera*) NN

Ash (*Fraxinus excelsior*) N

Apple (*Malus* spp.), edible apple (*M. domestica*), crab apple (*M. sylvestris*) N

Pear (*Pyrus* spp.), edible pear (*P. communis*) NN

Small-leaved lime (*Tilia cordata*) N

Silver birch (*Betula pendula*) N

Yew (*Taxus baccata*) N

Black poplar (*Populus nigra*) N

Foxglove tree (*Paulownia tomentosa*) NN

Beech (*Fagus sylvatica*) N

Climbers

Jasmine (*Jasminum* spp.), summer jasmine (*J. officinale*), winter jasmine (*J. nodiflorum*) NN

Ivy (*Hedera helix*) N

Climbing hydrangea (*Hydrangea anomala* ssp. *petiolaris*) NN

Honeysuckle (*Lonicera* spp.) (*L. periclymenum*) N

Clematis (*Clematis* spp.) NN

Hop (*Humulus lupulus*) N

Firethorn (*Pyracantha atalantioides*) NN

Bulbs

English bluebell (*Hyacinthoides non-scripta*) N

Squill species (*Scilla* spp.) N/NN

Snowdrop (*Galanthus nivalis*) N

Winter aconite (*Eranthis hyemalis*) E

Crocus species (*Crocus* spp.) NN

Wild Daffodil (*Narcissus pseudonarcissus*) N

Onion species (*Allium* spp.) N/NN. N.B. *Allium triquetrum* (three cornered leek) and *Allium paradoxum* (few-flowered leek) are Schedule 9 invasive plant species.

Wood anemone (*Anemone nemorosa*) N

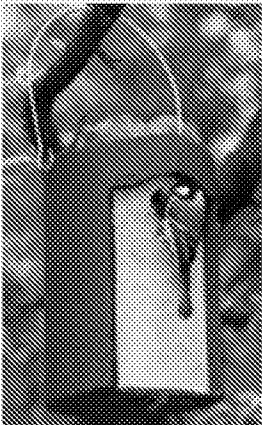
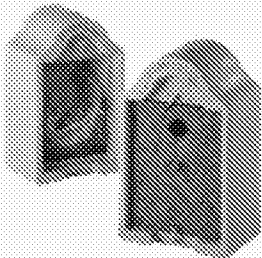
Lesser celandine (*Ficaria verna*) N

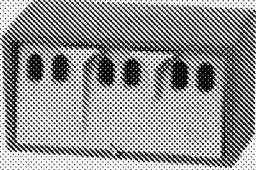
Appendix F

Bird and Bat Box Designs

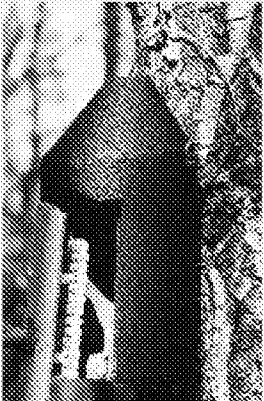
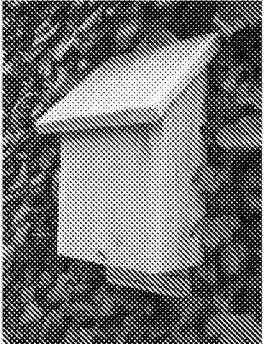
Bird and Bat Box Designs

Bird Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	Schwegler Nest Box 1B Hole-fronted 26mm entrance hole	16 x 16 x 23	Multi-purpose, including: blue-, marsh-, coal and crested tit and possibly wren. All other species are prevented from using the nest box due to the smaller entrance hole.	Suitable walls or semi-mature/mature trees and shrubs; attached to a tree trunk or hung from branches. Ideal points include discrete areas away from predators, such as against walls, plant and metal supports.
	Schwegler Bird House 32mm entrance hole	15 x 21 x 33	Multi-purpose, including: great-, blue-, marsh- and coal tit, redstart, nuthatch, pied flycatcher and sparrows.	Fixed to a semi-mature/mature tree trunk, wall or fence using the hanging bracket on the back. Between 1.5 m and 3 m high, and should be sited higher if your area has a particularly high cat population.

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	Schwegler Sparrow Terrace 1SP	20 x 43 x 24.5	House sparrow. It may also occasionally attract tits, redstarts and spotted flycatchers.	In an elevated position such as on post/platform within dense shrub/tree planting or on top of lighting columns. Alternatively, they could be attached to the side of a building. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of houses in built-up areas, and on industrial and agricultural buildings such as barns, sheds and factories. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground. Either install on the surface of the wall using the plugs and screws provided, or install directly into the wall. Cleaning is not necessary. The front panel can be removed by turning the screw hook.

Bat Boxes

Example	Type	Dimension D x W x H (cm)	Target Species	Location
	2F Schwegler Bat Box (General Purpose) with or without Double Front Panel	16 x 16 x 33	Without panel: Particularly successful with brown long-eared bat. Also used by noctule. With panel: Ideal for crevice-dwelling species: pipistrelles, Myotis species (particularly Daubenton's), Leisler's and serotine.	On trees or buildings and at a height of 3 to 6m. In open sunny positions and in groups of 3 to 5 facing different directions. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.
	Chavenage Bat Box	10 x 18 x 38	Small crevice-dwelling bats e.g. pipistrelles.	On trees in gardens or woodland and also on house walls. 2.5 - 5m high on a building, mature tree or vegetation line (trees/tall hedge) or on a feeding/flight route in partial daytime sun. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.

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