ECOSA
Ecological Survey & Assessment

LAND AT THORPE HOUSE, COLLIERS WAY, WAVERLEY ROAD, READING

PRELIMINARY ECOLOGICAL APPRAISAL

Final Document

May 2017

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EcIA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

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ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2015[1]. The report has been prepared in line with current best practice guidance and survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance[2].

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This report may or may not be suitable to support a planning application. Should this report contain recommendations for further survey work or assessment, the results of this would be required in order to support a planning application.

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[1] Chartered Institute of Ecology and Environmental Management (2015). *Guidelines for Ecological Report Writing.* Technical Guidance Series. http://www.cieem.net/publications/23/ecological-report-writing
[2] www.cieem.net

LAND AT THORPE HOUSE, COLLIERS WAY, WAVERLEY ROAD, READING

PRELIMINARY ECOLOGICAL APPRAISAL

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EXECUTIVE SUMMARY

The site is located within the town of Reading in Berkshire and comprises an area of dense scrub, amenity grassland and scattered trees. The proposals comprise development of the site for residential dwellings.

ECOSA were commissioned by JSA Planning to carry out a Preliminary Ecological Appraisal of the site to assess its ecological baseline and to determine any impacts and effects of the proposal. The main findings of the Preliminary Ecological Appraisal are:

- Much of the western area of the site is dominated by dense bramble scrub with the far eastern side of the site being wooded. Whilst the habitats are not particularly diverse in terms of species, the site currently provides a refuge for wildlife, particularly when considering its position within a predominantly urban landscape.

- The site has low suitability for tree roosting bats and moderate suitability for foraging and commuting bats. It is recommended that no external lighting is introduced as part of the scheme proposals to avoid lighting related impacts on foraging/commuting.

- The site provides suitable habitat for breeding birds and a number of birds displaying nesting behaviour were recorded on site. Vegetation clearance of suitable nesting habitat should ideally be undertaken outside of the main nesting bird season (March to August inclusive to avoid delays to programmes.

- The site provides suitable habitat for supporting hedgehog. This species could be harmed during vegetation clearance. Vegetation should be searched for hedgehog prior to removal, new planting is recommended to provide continual refuge for this species and fencing the site should be avoided. If fencing is to be included, gaps in the base should be allowed for facilitate movement of wildlife, in general.

- Recommendations for enhancement comprise the provision (and management) of native species planting and the inclusion of bird and bat boxes in the fabric of the new building.

- If the planning application boundary changes or the proposals for the site alter, a re-assessment of the impacts and effects may be required. An updating survey would also be needed should works on site not have commenced by April 2019.

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1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by JSA Planning to undertake a Preliminary Ecological Appraisal to support a planning application for the development of Land at Thorpe House, Colliers Way, Waverley Road, Reading RG30 2QS (hereafter referred to as the site).

1.2 The Site

The site is located in Reading, Berkshire, centred on National Grid Reference (NGR) SU 6899 7327 (**Map 1**).

The site covers approximately 0.3 hectares. The area of the site where proposed housing will be situated (north-western area of the site) is dominated by dense scrub. The south-eastern area of the site is densely wooded. The entire site is bordered along its southern edge by mown grassland and a public right of way (PRoW) which is a tarmacked path. There is a steep change in the ground level between the northern and southern site boundaries; the north/north-eastern edge of the site is on top of an embankment. The site is bounded by residential development on all sides.

In the wider area, the landscape is dominated by residential development associated with the town of Reading. Beyond the housing, Prospect House (and associated parkland) is south of the site and Lousehill Copse Local Nature Reserve to the west. The River Thames is approximately one kilometre north of the site and the M4 three kilometres to the south.

1.3 Aims and Scope of Report

The information within this report is based on a field survey and desktop study carried out during April 2017. The report provides an initial assessment of any potential ecological impacts[3] and associated effects[4], and likely ecological constraints to the proposed development of the site, based on the identified features of ecological interest. It identifies the need for any measures to avoid or mitigate negative effects on habitats and species, outlines enhancements to be implemented as part of the development and provides recommendations for further ecological work, if required. The objectives of the assessment are:

- To provide baseline information on the current habitats and ecological features both on site and in the immediate vicinity of the site, where relevant;

[3] Defined by CIEEM as an 'action resulting in changes to an ecological feature' e.g. hedgerow removal.
[4] Defined by CIEEM as an 'outcome to an ecological feature from an impact' e.g. loss of habitat.

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- To identify the proximity of any statutory sites designated for nature conservation importance and provide an assessment of potential effects the proposed development may have on these;

- To identify the presence/potential presence of diverse habitats and protected species and to provide an appraisal of potential effects the proposed development may have on these; and

- To provide recommendations for avoidance, mitigation, compensation and enhancement measures and, where required, recommendations for additional survey work and/or consultation required to support the planning application.

1.4 Site Proposals

The proposals comprise the construction of 18 new residential dwellings for the elderly, with associated hardstanding for parking, garden landscaping and access from Colliers Way to the west. The development area is restricted to the north-western area of the site. The south-eastern area of the site, which is densely wooded, will remain untouched. The design of housing proposed is similar to that adjacent to the north-western edge of the site, Thorpe House.

The report is based on the proposed site layout (Drawing No. PL-101 dated March 2017 (**Appendix 1**). Planning permission is being sought during the latter half of 2017, with construction expected to commence after permission has been granted.

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2.0 PLANNING POLICY CONTEXT

2.1 Introduction

This section summarises the planning policy in relation to ecology and biodiversity within the Reading Borough Council administrative area. This information is then used to assess the compliance of the scheme in relation to relevant planning policy and where necessary make recommendations for mitigation and enhancements (see Section 6.0).

2.2 Planning Policy

2.2.1 National Policy

The National Planning Policy Framework (NPPF) sets out the government's requirements for the planning system in England. A number of sections of the NPPF are relevant when taking into account development proposals and the environment. As set out within Paragraph 14 of the NPPF *"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking".* However, Paragraph 119 goes on to state that "*The presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined"*.

The general impetus of the NPPF in relation to ecology and biodiversity is for development proposals to not only minimise the impacts on biodiversity but also to provide enhancement. Paragraph 109 states that the planning system should contribute to and enhance the natural environment by *"…minimising impacts on biodiversity and providing net gains in biodiversity where possible..."*

Paragraph 118 states that *"when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity"*. A number of principles are set out in Paragraph 118, including that where harm cannot be adequately avoided then it should be mitigated for, or as a last resort, compensated for. Where impacts occur on nationally designated sites, the benefits must clearly outweigh any adverse impact and incorporating biodiversity in and around developments should be encouraged. Protection of irreplaceable habitats, such as ancient woodlands and those sites proposed as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites or acting as compensation for SPAs, SACs and Ramsar sites, should receive the same protection as European sites.

In addition to the NPPF, Circular 06/05 provides guidance on the application of the law relating to planning and nature conservation as it applies in England. Paragraph 98

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states "*the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat".* Whilst paragraph 99 states "*it is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted"*.

2.2.2 Local Policy

Local planning policy for Reading Borough Council is provided by the Core Strategy (Adopted 2008, altered January 2015). A single policy makes specific reference to ecology and biodiversity:

- **CS36: Biodiversity and Geology**

  a) Development should retain, protect and incorporate features of biodiversity or geological interest (including protected species and their habitats) found within the application site into their schemes.

     On sites with recognised biodiversity or geological value, development will not be permitted where there would be a direct or indirect adverse impact on the site, unless it can be clearly demonstrated that:

     i. The need for development clearly outweighs the need to protect the value of the site; and
     ii. Appropriate compensation, impact minimisation, mitigation and compensation are provided.

  b) Local Nature Reserves and Wildlife Heritage Sites will be safeguarded and where possible, enhanced. Permission will not be granted for any development that would adversely affect a designated nature reserve or Wildlife Heritage Site.

  c) Any development that would sever or threaten the integrity of an established wildlife link, as indicated on an adopted proposals map, will not be permitted. Where applicable, developments should be designed to protect, consolidate, extend and enhance the network of wildlife links and corridors in and adjoining the Borough, working with neighbouring authorities where appropriate.

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A new local plan, which will replace the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document, is currently in development.

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3.0 METHODS

3.1 Introduction

This section details the methods used during the field survey and desktop study carried out as part of the Preliminary Ecological Appraisal. This section also considers any significant limitations to the appraisal.

3.2 Zone of Influence

To define the total extent of the study area for this appraisal (Zone of Influence[5]), the proposed scheme was reviewed to establish the spatial scale at which ecological features could be affected. The appropriate survey radii for the various elements of the appraisal (i.e. desktop study and field survey) have been defined in the relevant sections below. These distances are determined based on the professional judgement of the ecologist leading the appraisal, taking into account the characteristics of the site subject to appraisal, its surroundings and the nature and scope of the proposals.

3.3 Scoping

Protected species considered within this appraisal are those species/species groups considered likely to be encountered given the geographical location and context of the site. These are discussed within the results section (Section 4.0) of the current report. Where such a species is unlikely to be present on site a justification for likely absence is provided. Species considered likely absent from the site are not then considered in the potential development impacts and ecological effects section (Section 5.0), and recommendations and conclusions section (Section 6.0) of this report.

3.4 Desk Study

3.4.1 Biological Records Centre

Thames Valley Environmental Records Centre (TVERC) was consulted on 11th April 2017 for the following data:

- Records of non-statutory designated sites (Local Wildlife Sites LWS), Sites of Importance for Nature Conservation (SINC), Site of Nature Conservation Interest (SNCI) etc.) within one kilometre of the site boundary; and

- Records of legally protected and notable species (flora and fauna) within one kilometre of the site boundary, including priority species and Species of Principal Importance for the Conservation of diversity in England notified under Section

[5] The Zone of Influence (ZoI), as defined by CIEEM, is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities.

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41 of the Natural Environment and Rural Communities (NERC) Act 2006 and as listed in the England Biodiversity List (**Appendix 4**); and

- Records of bats within two kilometres of the site boundary. Bat species are highly mobile and therefore the search radius is increased for this species group.

3.4.2 Multi-Agency Geographic Information for the Countryside

The Multi-Agency Geographic Information for the Countryside (MAGIC)[6] database was reviewed on 10th April 2017 to establish the location of statutory designated sites located within the vicinity of the site. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within one kilometre of the site. Where appropriate, the desk study search area has been extended to take account of any appropriate statutory designated sites which need consideration in terms of potential in-direct effects and which support particularly mobile species[7]. The Impact Risk Zones (IRZ) were also obtained from MAGIC, which are used to help guide and assess planning applications for likely effects on SSSIs.

Sites within one kilometre of the site boundary where European Protected Species Mitigation (EPSM) licences have been granted were reviewed. This information allows a greater understanding of the potential for European protected species to be present in the local area.

Online mapping resources, at an appropriate scale, were used to identify the presence of habitats such as woodland blocks, ponds, watercourses and hedgerows, in the vicinity of the site.

3.5 Field Survey

The field survey broadly followed standard Phase 1 habitat survey methodology[8] and included a search for evidence of the presence of, and an assessment of the site's suitability to support, protected and notable species as recommended by CIEEM[9]. The field survey covered all accessible areas of the site, including boundary features.

[6] www.defra.magic.gov.uk
[7] Search areas for bat records are based upon information contained within Collins, J. (Ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Third Edition). The Bat Conservation Trust, London. Relevant distances for consideration of impacts on SPAs, SACs, Ramsar sites have been based on current published guidance available through web-based sources.
[8] Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit*
[9] CIEEM (2013). *Guidelines for Preliminary Ecological Appraisal*

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3.5.1 Phase 1 Habitat Survey

An assessment was made of all areas of vegetation within the site based on the standardised Phase 1 habitat survey methodology[10]. This involved identification of broad vegetation types, which were then classified against Phase 1 habitat types, where appropriate. A list of characteristic plant species for each vegetation type was compiled and any invasive species[11] encountered as an incidental result of the survey recorded.

3.5.2 Protected and Notable Species Appraisal

A preliminary appraisal of the site's suitability to support legally protected and notable species was carried out. The following species/species groups were considered during the appraisal.

Bats

The survey conformed to current Bat Conservation Trust guidelines[12]. An assessment was made of the suitability trees on the site and immediately on the site boundary to support roosting bats based on the presence of Potential Roosting Features such as holes, cracks, splits, loose bark and ivy cladding.

An assessment was made of the suitability of the site and the surrounding landscape to support foraging and/or commuting bat species. The assessment of the suitability of the site to support roosting, foraging and commuting bats is based on a four-point scale as detailed in **Appendix 3**.

Badger

The survey involved an assessment of the suitability of the site to support badger. Evidence of the species was recorded as an incidental result of the Phase 1 habitat survey and included locating badger setts, paths, and signs of territorial activity such as latrine sites.

Hazel Dormouse

The appraisal for the suitability of the site to support hazel dormouse was based on an assessment of habitat features that may indicate that the species is present. This includes the presence of key food sources such as hazel and bramble, or plants used as nesting material such as honeysuckle and clematis. Additionally, the species requires a continuum of food supply so that habitat structure, diversity and connectivity

[10] The standard JNCC Phase 1 habitat survey methodology involves the production of a Phase 1 map showing the location and extent of habitat types, however, given the limited size and complexity of the site surveyed a Phase 1 habitat map has not been produced in this instance.
[11] Plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.
[12] Collins, J. (Ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Third Edition). The Bat Conservation Trust, London

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to adjacent areas of woodland/scrub are important features in determining the suitability of the site for hazel dormouse.

Birds

The appraisal of breeding birds on the site was based on the suitability of habitat present to support nesting bird communities, the presence of bird species that may potentially nest within the available habitat and evidence of nesting such as old or currently active nests.

The assessment of wintering birds was based on an assessment of the suitability of the habitat on site to support important wintering bird species and populations. Particular attention was paid to the suitability for the site to support wintering farmland bird species, waders and wildfowl.

Reptiles

The reptile appraisal was based on an assessment of the suitability of the habitat present within the site to support a population of reptiles. Reptiles particularly favour scrub and rough grassland interfaces and the presence of these is a good indication that reptiles may be present on-site. In addition, reptiles may utilise features such as bare ground for basking, tussocky grassland for shelter and compost heaps and rubble piles for breeding and/or hibernating.

Great Crested Newt

The appraisal of the site to support great crested newt included establishing the presence of suitable aquatic habitats such as ponds, lakes or other waterbodies within or adjacent to the site and the presence of suitable terrestrial habitat. Waterbodies that are densely shaded, highly eutrophic or that contain fish are likely to be less suitable for this species.

In addition, online mapping resources at a minimum scale of 1:25,000 were used to identify the presence of ponds or other waterbodies within a 500 metre radius of the site. The 500 metre radius is a standardised search radius to assist in the assessment of the suitability of a site and its surrounding habitat to support this species, based on current Natural England guidance[13].

Invertebrates

An assessment was made of the suitability of the site to support diverse communities of invertebrates. The assessment was based on the presence of habitat features which may support important invertebrate communities. These features include, for example, an abundance of dead wood, the presence of diverse plant communities, varied

[13] English Nature (2001) Great Crested Newt Mitigation Guidelines. Peterborough

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woodland structure, sunny woodland edges with a diverse flora, waterbodies and water courses and areas of free draining soil exposures. During the field survey there was no attempt made to identify species present as this is a more specialist area of ecological assessment reserved for targeted surveys.

Other Relevant Species

An assessment was made of site suitability for other notable species such as more rarely encountered protected species, Species of Principal Importance for the Conservation of diversity in England notified under Section 41 of the NERC Act 2006 and as listed in the England Biodiversity List, and Local Biodiversity Action Plan (LBAP) species[14], specific to the study region.

Invasive Species

During the field survey any incidental records of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded. However, it should be considered that the survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

3.6 Field Survey Details

The field survey was carried out by Samantha Munslow, Principal Ecologist of ECOSA on 21st April 2017. The weather conditions were cloudy and sunny with approximately 70 per cent cloud cover, an ambient temperature of 15 degrees Centigrade and a moderate breeze.

During the survey, the surveyor was equipped with 10x40 binoculars and a digital camera.

3.7 Limitations

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The field survey has therefore not produced a complete list of plants and animals and in the absence of evidence of any particular species should not be taken as conclusive proof that the species is absent or that it will not occur in the future.

The bramble in the western area of the site was too dense to perform a thorough search for badger setts. However, no signs of badger activity was recorded anywhere on site, including around the edges of the bramble scrub and therefore, this is not considered to be a significant risk to the findings of survey.

[14] LBAPs identify local priorities for biodiversity conservation by translating national targets for species into effective action at the local level and identifying targets for species important to the local area.

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Due to the large number of trees on site, a full ground level inspection was not undertaken during the field survey.

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4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Introduction

This section details the results of the Preliminary Ecological Appraisal undertaken for the site. It assesses the baseline ecological conditions of the site at the time the desktop study was completed and based on the ecological features recorded during the field survey carried out on 21st April 2017.

4.2 Desktop Study

4.2.1 Protected Species

A number of protected species have been recorded within one kilometre of the site boundary and a number of bat species within two kilometres. These are discussed further within the relevant sections in Paragraphs 4.3 and 4.4 below[15].

4.2.2 Statutory and Non-statutory Designated Sites

There is one statutory designated site of nature conservation interest situated within one kilometre of the site boundary. There are four non-statutory designated sites of nature conservation situated within one kilometre of the site boundary. Details of these designations are provided in **Table 1**. Further information on sites designated for nature conservation is provided in **Appendix 2**. The nearest designated site is approximately 200 metres from the site.

Table 1: Designated Sites Located Within the Zone of Influence

Designation	Name	Approximate Relative Location	Reason for Designation
LNR	Lousehill Copse	500 metres west	Semi-ancient woodland surrounded by housing containing mature oak *Quercus robur* and hazel *Corylus avellana* woodland with some coppice.
LWS	Lousehill Copse	500 metres west	The site consists of three parcels of broadleaved semi-natural woodland separated by roads. The woodland lies on an escarpment with London Clay overlying Reading Beds. The site is part of the West Reading Woodlands Local Nature Reserve and contains important and locally scarce plant species which indicate a long continuity of woodland.
LWS	Prospect Park and The Rookery	200 metres south	The Rookery is a small area of lowland mixed deciduous woodland sitting on a small plateau raised above the surrounding Prospect Park to the south. The canopy is largely oak dominated and even aged in some areas the canopy is joined by occasional ash *Fraxinus excelsior*, horse chestnut *Aesculus hippocastanum*, beech

[15] The full data set is available on request from ECOSA.

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Table 1: Designated Sites Located Within the Zone of Influence

Designation	Name	Approximate Relative Location	Reason for Designation
			Fagus sylvatica, sycamore *Acer pseudoplatanus* and common lime *Tilia x europaea*. The understorey has occasional hazel, blackthorn *Prunus spinosa* and hawthorn *Crataegus monogyna*. The ground flora is dominated by creeping soft grass *Holcus mollis*, bramble *Rubus fruticosus* and common nettle *Urtica dioica*; bluebell *Hyacynthoides* non-*scripta* is locally frequent wood anemone *Anemone nemorosa*, rare wood millet *Milium effusum* and wood melick *Melica uniflora* are also present. Prospect Park is an historic parkland site mainly consisting of closely mown amenity grassland and associated public amenities. There are a number of mature and veteran trees and the site also contains a species poor shaded pond.
LWS	Meadway Fringe	700 metres south-west	A strip of broad-leaved woodland interspersed with some Scot's pine *Pinus sylvestris* and larch *Larix decidua*, located between housing and a road. It has retained a good range of woodland plants including ancient woodland indicators. An area of unimproved, species-rich neutral grassland lies between garden fences and the car park. Here there are numerous ant-hills and a great diversity of herbs including cowslip *Primula veris* and bird's-foot trefoil *Lotus corniulatus*.

4.3 Habitats

4.3.1 Desktop Study Results

Consultation with TVERC produced a number records of notable habitats within the desktop study area including areas of ancient woodland and unimproved grassland associated with LWS's., the nearest of which are located in Prospect Park and The Rookery LWS, approximately 200 metres from the site. A number of notable plant species records were returned from TVERC including pillwort *Pilularia globulifera*, good-king-henry *Chenopodium bonushenricus*, bluebell, butcher's-broom *Ruscus aculeatus* and bur medick *Medicago minima*.

4.3.2 Field Survey Results

Habitats are described in general terms using standard Phase 1 habitat survey terminology, with reference to dominant, characteristic and notable species in each vegetation type. The main habitats recorded on site during the Phase 1 habitat survey were as follows:

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4.3.3 Dense Scrub

Dense scrub dominates the north-western area of the site (**Figure 1** and **Figure 2**). Species recorded within this habitat include bramble *Rubus fruticosus*, elder *Sambucus nigra*, sycamore saplings, hawthorn, cleavers *Galium aparine*, garlic mustard *Alliaria petiolata*, Spanish bluebell *Hyacinthoides hispanica*, wood avens *Geum urbanum*, common nettle, broad-leaved dock *Rumex obtusifolius* and ribwort plantain *Plantago lanceolata.* A number of additional species were recorded in the more wooded area of the site (south-eastern area), including dog rose *Rosa canina*, dandelion *Taraxacum officinale* aggregate, ground elder *Aegopodium podagraria* and bindweed *Convolvulus arvensis*.

Figure 1: Dense scrub in north-western area of site (looking north)

Figure 2: Dense scrub in north-western area of site (looking south)

4.3.4 Woodland

The south-eastern wooded area of the site is being retained and will not be directly affected by the development. This area of the site is prone to fly tipping from the adjacent houses on the northern and eastern site boundaries. The main species of tree present are sycamore, elder, ash saplings and a small number of hazel. Many of the trees in this wooded area appear to be self-seeded and are covered in ivy *Hedera helix* (**Figure 3** and **Figure 4**). Ivy and bramble dominate the ground cover, together with ground elder and common nettle. Spanish bluebell, wood avens and greater celandine *Chelidonium majus* is present in the more open areas of the woodland.

Figure 3: Wooded area in south-eastern area of the site (looking west)

Figure 4: Wooded area in south-eastern area of the site (looking south)

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4.3.5 Scattered Trees

There is a small group of semi-mature trees, comprising sycamore, horse chestnut and a maple *Acer* species in the north-western corner of the site adjacent to Thorpe House (**Figure 5**).

Figure 5: Small group of trees adjacent to Thorpe House

4.3.6 Amenity Grassland

The southern edge of the site is bordered by short mown amenity grassland, adjacent to which is a tarmacked path (**Figure 6**). Species recorded in this area include perennial rye-grass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, fescue *Festuca* species, dandelion, daisy *Bellis perennis* and ribwort plantain.

Figure 6: Mown amenity grassland along southern site boundary

4.3.7 Summary

The site mainly comprises dense bramble scrub (north-western side of the site) and woodland (south-eastern side). A small group of trees is adjacent to Thorpe House and

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a narrow strip of mown grassland is present along the southern edge of the site. None of the species present are rare/uncommon but the site does provide a value refuge for wildlife in an otherwise built up area.

4.4 Notable and Legally Protected Species

4.4.1 Bats

Desktop Study Results

Consultation with TVERC produced records of ten bat species within the desktop study area including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, pipistrelle *Pipistrellus* species bat, Daubenton's bat *Myotis daubentonii*, *Myotis* species bat, noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus* and long-eared bat *Plecotus* species. A number of records were relatively old (1980) but many more recent records (2013-2015) were for known roosts within approximately 500 metres of the site. No significantly rare species of bat were included in the desk study data.

Tree Assessment

Although there are a number of trees on site, some of which are clad in ivy, none of the trees appear to have any obvious suitability for roosting bats. None of the trees support potential roosting features such as cracks, holes, fissures, broken limbs or scars. Although many of the trees in the wooded area of the site are clad in ivy, the ivy is not sufficiently mature to offer adequate refuge for roosting. However, a thorough inspection of all of the trees on site was not carried out as part of this initial site assessment. The small group of trees adjacent to Thorpe House on the north-western side of the site do not provide any suitable roosting opportunities for bats. Overall, the site is considered to have **low suitability** for supporting tree roosting bats.

Foraging and Commuting Habitat

Although within an urban location, the site offers suitable habitat for foraging and commuting bats. Bats will likely use the entire site as a foraging resource and are also likely use the site as a commuting corridor due to its (somewhat fragmented) connectivity, mainly via gardens, to expanses of large open greenspace in the form of Prospect Park (to the south) and Lousehill Copse (west). Overall the site is considered to have **moderate suitability** to support foraging and commuting bats.

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4.4.2 Badger

Desktop Study Results

The desktop study returned eight records of badger *Meles meles* within one kilometre of the site, with the most recent record from 2015 (due to the sensitivity of the record, the location was not disclosed).

Field Survey Results

No evidence of badger was recorded on site during the survey. The site is located within the middle of dense housing and is therefore quite disturbed. Although the site appears to superficially suitable for badger, due to the level of disturbance and open access of the site, badger are unlikely to construct setts. If badger are in the area, they may use the site for foraging.

4.4.3 Hazel Dormouse

Desktop Study Results

Consultation with TVERC produced no records of hazel dormouse *Muscardinus avellanarius* within the desktop study area, however, this does not confirm the absence of the species in the local area.

Field Survey Results

The site is relatively small in size (approximately 0.3 hectares). The north-western area of the site is dense bramble and the south-eastern section is wooded. Although there is some connection from the site to off-site gardens, the gardens adjoining the site are small in size, well-maintained and do not offer suitable conditions for this species; the site is therefore isolated from other suitable habitat for this species. Taking into consideration the size of the site, the lack of connectivity to any suitable off-site habitat for this species and the level of anthropogenic disturbance on site, it is unlikely that the site supports dormouse and this species is therefore not considered further in this report.

4.4.4 Birds

Desktop Study Results

Consultation with TVERC produced records of 20 species of birds within the desktop study area any of which are associated with Prospect Park (south of the site) and Lousehill LNR (west of the site). Of most relevance to the site, records included house sparrow *Passer domesticus*, starling *Sturnus vulgaris*, song thrush *Turdus philomelos*, dunnock *Prunella modularis*, swift *Apus apus* and green woodpecker *Picus viridis*; it is possible that some/all of these species may use the site for breeding and/or foraging.

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Field Survey Results

During the survey a number of birds were recorded foraging on site or passing over the site including robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, feral pigeon *Columba livia*, house sparrow, blackbird *Terdus merula*, magpie *Pica pica* and blue tit *Cyanistes caeruleus*. No nests were seen but a number of birds were seen entering the dense bramble scrub in the north-western area of the site. The trees and scrub provide good foraging and nesting opportunities for breeding birds. The site has some connectivity to off-site habitats in the form of adjacent gardens and the site is considered suitable for supporting a range of breeding/foraging birds. It is acknowledged that due to the site's location, surrounded by dense housing, that predation levels by cats are likely to be quite high and two cats were seen on the site during the survey.

4.4.5 Reptiles

Desktop Study Results

The desktop study returned two records of reptile, comprising a slow-worm record (date of record 2009) for a location in Lousehill Copse west of the site and a record of a grass snake (1986) from Prospect Park.

Field Survey Results

The wooded area of the site is too densely shaded for reptile, lacking any open basking areas and this section of the site is considered unsuitable for this species group. The top of the bank in the north-western area of the site offers suitability for reptiles such as slow-worm and is connected to gardens, providing an extension to the amount of habitat available for this species. The remainder of the site is dominated by dense bramble and is unsuitable for reptiles in isolation. As the site is surrounded by housing and subject to levels of recreational pressure, it is unlikely that any other reptile species would be present on site and it is also likely that levels of cat predation will have a negative effect on any slow-worm population present.

4.4.6 Great Crested Newt

Desktop Study Results

Consultation with OS mapping and aerial photography revealed a single waterbody within 500 metres of the site. This waterbody is within the parkland of Prospect Park and is located approximately 440 metres south of the site. Consultation with TVERC produced no records of great crested newt within the desktop study area, however, this does not confirm the absence of the species in the local area.

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Field Survey Results

The nearest waterbody is located some 440 metres away from the site; an expanse of housing and a main road (Tilehurst Road) lies between this waterbody and the site. Although the site provides suitable terrestrial habitat for this species, the nearest waterbody is some distance away and there are barriers to dispersal between the site and the waterbody. Great crested newt is therefore is considered to be likely absent and this species is not considered further in this report.

4.4.7 Invertebrates

Desktop Study Results

Consultation with TVERC produced records of four invertebrate species within the desktop study area, including stag beetle *Lucanus cervus,* cinnabar *Tyria jacobaeae* and large clouded knot-horn *Homoeosoma nebulella*. Many of the records are associated with Prospect Park (south of the site) and Lousehill Copse (west of the site).

Field Survey Results

The habitats on site provide suitability for a range of invertebrates and during the site visit a large number of bumblebees were seen on site including common carder bee *Bombus pascuorum* and buff-tailed bumblebee *Bombus terrestris* and is likely suitable for common and widespread invertebrate species. However, it is considered unlikely that the site would support any rare or notable invertebrate species. The site has some connectivity to off-site garden habitats.

4.4.8 Other Relevant Species

Desktop Study Results

Consultation with TVERC produced records of Western European hedgehog *Erinaceus europaeus* within the desktop study area, however, this does not confirm the absence of other notable species in the local area.

Field Survey Results

The areas of dense scrub on site provide suitable foraging, sheltering and hibernating habitats for hedgehog, a Species of Principal Importance[16]. It is acknowledged, however, that the edges of the site are used by local residents for fly tipping and the site is also subjected to high levels of recreational pressure; the presence of other rare/notable species is considered unlikely.

4.5 Summary of Key Ecological Features

The site mainly comprises dense scrub (in the area to be developed) and woodland in the area to be retained. The site supports nesting bird habitat, provides suitable

[16] As listed in NERC Act 2006.

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conditions for foraging/commuting bats, habitat for common species of invertebrate and opportunities (albeit limited) for slow-worm. The site has some connection to gardens on the north, eastern and western edges and provides a refuge for wildlife in an otherwise built up area.

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5.0 POTENTIAL DEVELOPMENT IMPACTS AND ECOLOGICAL EFFECTS

5.1 Introduction

This section considers, in outline, the potential impacts of the proposed development scheme and effects on the features of ecological interest as identified in Section 4.0 and summarised in Paragraph 4.5. The impacts considered may have either a positive or a negative effect and are considered unmitigated i.e. prior to any mitigation or compensation being implemented.

The proposed development entails the construction of seven residential buildings with associated hardstanding for parking and access from Colliers Way to the west. This will result in the loss of approximately 0.1 hectares of amenity grassland and dense scrub. Lighting will also be introduced to the site although lighting proposals were unknown at time of writing this report. In the absence of mitigation, the potential ecological effects of these works are detailed in the sections below.

5.2 Designated Sites

The nearest designated site is Prospect Park LWS approximately 200 metres to the south of the site and the nearest statutory site is Lousehill Copse LNR located approximately 500 metres to the west of the site.

The Reading Borough Council Core Strategy states that LNR's should be protected and development that would have an adverse impact will not be permitted. Given the distance of the site from the LNR and the nature of the development, it is considered that the proposed development will not have an adverse impact on the LNR.

Given the distance from the site there are no anticipated direct effects on non-statutory designated sites, however, the proposed development will result in an increase in residents at the site which has potential to increase recreational pressure. The increase in recreational pressure is likely to be very low due to the nature of the development, providing accommodation for elderly residents and the nature of the local designated sites, including Prospect Park, which already encourage visitors and are therefore anticipated to be well equipped for such use with suitable footpaths, parking and waste facilities.

5.3 Habitats

The development will result in the loss of an area of dense scrub totalling approximately 0.1 hectares. There may also be further degradation of the wooded area in the eastern area of the site due to increase pressure from additional residents in the area.

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5.4 Notable and Legally Protected Species

Of those notable and protected species identified as being likely present on site during the Preliminary Ecological Appraisal the following potential effects have been identified:

5.4.1 Bats

The ivy clad trees on site provide low suitability for roosting bats and the site has moderate suitability to support foraging and commuting bats. All of the trees in the wooded eastern/south-eastern area of the site are being retained. One of the trees in the small group of trees adjacent to Thorpe House (north-western corner of the site) may be removed but none of these trees have suitability for roosting bats. The proposals will therefore not give rise to impacts on roosting bats. It is unknown whether new external lighting will be introduced on site and therefore lighting related impacts on foraging/commuting bats cannot be ruled out. However, the proposals will result in the loss of approximately 0.2 hectares of land (comprising bramble scrub) which currently provides suitable habitat for foraging and commuting bats although connectivity to off-site foraging/commuting habitat will remain.

In England, bats and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, all bat species are protected under the Conservation of Habitats and Species Regulations 2010. Refer to **Appendix 4** for details.

5.4.2 Birds

The site provides suitability for supporting breeding birds and clearance of the dense scrub (and potentially some of the trees) has potential to impact on breeding birds by way of loss of habitat and, if vegetation is cleared during the nesting season, disturbance to nesting birds.

All birds, their nests, eggs and young are legally protected, with certain exceptions, see **Appendix 4** for details.

5.4.3 Reptiles

The edge of the dense scrub on the southern facing bund (along the northern/north-eastern embankment) is suitable for supporting low numbers of slow-worm. As this area is to be retained, it is considered that there will be no overall loss of suitable reptile habitat. The additional housing is unlikely to give rise to additional impacts on reptiles, should they be present, as new residents will not be allowed to keep pets.

Widespread reptile species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, grass snake *Natrix natrix* and *adder Vipera berus*) are protected under the Wildlife and Countryside Act 1981 against harm, see **Appendix 4** for details.

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5.4.4 Other Relevant Species

There are records of hedgehog within one kilometre of the site and on-site habitat is suitable to support this species. Removal of scrub habitat has potential to harm sheltering or hibernating hedgehog and will result in a loss of suitable habitat for this species.

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6.0 RECOMMENDATIONS AND CONCLUSIONS

6.1 Introduction

This section provides a summary of the recommendations resulting from the baseline ecological condition and the outline assessment of impacts and effects. Methods for addressing potential negative effects on features of ecological interest have been approached in accordance with the mitigation hierarchy[17] with avoidance of negative effects prioritised where possible. Where negative effects cannot be avoided mitigation[18] is prioritised over compensation[19]. Enhancement[20] has been recommended to provide a net gain in biodiversity post-development.

6.2 Mitigation/Compensation

6.2.1 Bats

It is recommended that no external lighting be introduced as part of the proposals. If unavoidable, any new external lighting should be positioned away from the northern edge of the site which backs onto existing gardens. Any new lighting will comprise hooded luminaires directed away from vegetation. Ideally the bulbs will be LED and at the warmer end of the spectrum (e.g. avoiding blue or white light). LED lights emit much lower levels of UV and therefore have a lower impact on wildlife[21]. Any new lighting will be motion-activated and task related, associated with specific entrance/exit points of the property. The lux level will be as low as possible to allow the task to be carried out safely and effectively. Guidance on task related lighting levels published by the Chartered Institution of Building Services Engineers (CIBSE)[22] will be followed.

Approximately 0.2 hectares of suitable foraging/commuting habitat will be lost to the proposals. Considering that there will be no loss of connectivity to off-site habitat, the site will continue to provide a foraging/commuting resource for the local bat population, and that the site is not considered to provide a significant resource for bats, further

[17] In accordance with CIEEM Ecological Impact Assessment guidance a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

[18] *"Measures taken to avoid or reduce negative impacts. Measures may include: locating the development and its working areas and access routes away from areas of high ecological interest, or timing works to avoid sensitive periods."* CIEEM (2017) Technical Guidance Series - EcIA Guidelines - Glossary [online]. Available from: http://www.cieem.net/glossary [Accessed 9th January 2017]

[19] "*Measures taken to make up for the loss of, or permanent damage to, biological resources through the provision of replacement areas. Any replacement area should be similar to or, with appropriate management, have the ability to reproduce the ecological functions and conditions of those biological resources that have been lost or damaged.*" CIEEM (2017) Technical Guidance Series - EcIA Guidelines - Glossary [online]. Available from: http://www.cieem.net/glossary [Accessed 9th January 2017]

[20] "*The genuine enhancement of the natural heritage interest of a site or area because the project includes improved management or new habitats or features, which are better than the prospective management, or the habitats or features present there now. There is, therefore, a net or new benefit to the natural heritage.*" CIEEM (2017) Technical Guidance Series - EcIA Guidelines - Glossary [online]. Available from: http://www.cieem.net/glossary [Accessed 9th January 2017]

[21] *Wildlife and Artificial Lighting Seminar*, 21st – 22nd March 2014, Arup London, Bat Conservation Trust.

[22] CIBSE (1992) *Lighting Guide 6: The Outdoor Environment*; CIBSE (2002) *Code for Lighting*, Butterworth-Heinemann, UK.

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surveys are not recommended. Recommendations are provided, however, for this species group in relation to mitigation, compensation and enhancement.

6.2.2 Birds

Vegetation clearance should be undertaken outside the main breeding bird season of March to August, inclusive, due to the site's suitability for nesting birds, especially within the area of dense scrub where the new development will be located. If this is not possible, an ecologist will need to carry out a nesting bird check of the site no more than 24 hours prior to clearance taking place. Active nests will need to be left with a suitable buffer until nesting ends. Clearing the site during the nesting bird season carries a high risk of impacts to the programme if active nests are discovered.

6.2.3 Other Relevant Species

Prior to removal, scrub habitat will be searched by an ecologist for sheltering or hibernating hedgehogs. Any hedgehogs found will be moved to suitable habitat outside of the site boundary.

Fencing the site should be avoided. Any new fencing installed should include suitable gaps to allow hedgehog access to the site. New residential dwellings should incorporate hedgehog houses into landscaping proposals to replace lost potential sheltering habitat.

6.3 Enhancement

6.3.1 Habitats

It is recommended that new native planting is incorporated into the scheme to mitigate for the loss of suitable habitat post-development. Proposed garden landscaping should incorporate native tree and shrub species rather than cultivars. New areas of lawn should comprise a native wildflower lawn mix (E.g. Emorsgate EL1 Flowering Lawn Mixture). Specifically, it is recommended that a species-rich grassland mix is included in the landscape proposals to replace the existing invertebrate habitat being lost. A mix such as Emorsgate general purpose meadow mix (EM1, EM2 or EM3) would be appropriate. Areas of grassland should then be managed to allow plants to flower before mowing. One early cut (March/April) and one late cut (August/September), removing all arisings, is therefore recommended. Further advice on grass mixes can be found at https://wildseed.co.uk/mixtures/category/meadow-and-grassland and for management https://wildseed.co.uk/page/management-of-meadows-and-grassland.

6.3.2 Bats

Recommendations for native planting will also help to improve the site for foraging bats by compensating for the loss of bramble scrub (and therefore amount of invertebrate prey available). Artificial bat roosts are recommended for the new residential

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development such as Schwegler 2FR bat tubes (or similar) which are installed within the fabric of the building. If using this particular model, it is recommended that three bat tubes be installed adjacent to each other on one elevation of the building.

6.3.3 Birds

Two Schwegler 1SP sparrow terraces should be installed on the new buildings, one Schwegler 2H open fronted nest box and one Schwegler 1B hole nest box should be installed on retained trees. These features will provide additional opportunities for nesting birds. Inclusion of diverse native species planting, including berry bearing species such as rowan *Sorbus aucuparia*, holly *Ilex aquifolium*, whitebeam *Sorbus aria*, spindle *Euonymus europaea*, dog rose, guelder rose *Viburnum opulus*, elder, hawthorn, honeysuckle *Lonicera periclymenum* or ivy will improve food resources for birds and some of these species area already present on site suggesting conditions would be suitable.

6.3.4 Other Relevant Species

Two hedgehog houses should be installed within the gardens of the new development to provide nesting and hibernation opportunities for hedgehog.

6.4 Conclusion

The results of the Preliminary Ecological Appraisal have identified that no further ecological surveys are required and that the recommendations provided with regards to mitigation and enhancement measures allow the proposals to accord with relevant planning policy (see Section 2.0).

No significant effects are anticipated on local designated sites and recommendations have been given to reduce impacts on ecology in accordance with Policy CS36 of the Core Strategy (Paragraph 2.2.2).

It is considered that providing the recommendations provided in Paragraph 6.2 and Paragraph 6.3 are implemented then the development will result in no residual negative ecological effect and that a positive effect is likely.

6.5 Updating Site Survey

Given the mobility of animals and the potential for colonisation of the site, it is recommended that an updating walkover of the site is undertaken prior to the development commencing should this not occur within 24 months of the date of the survey.

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Map 1 Site Location Plan

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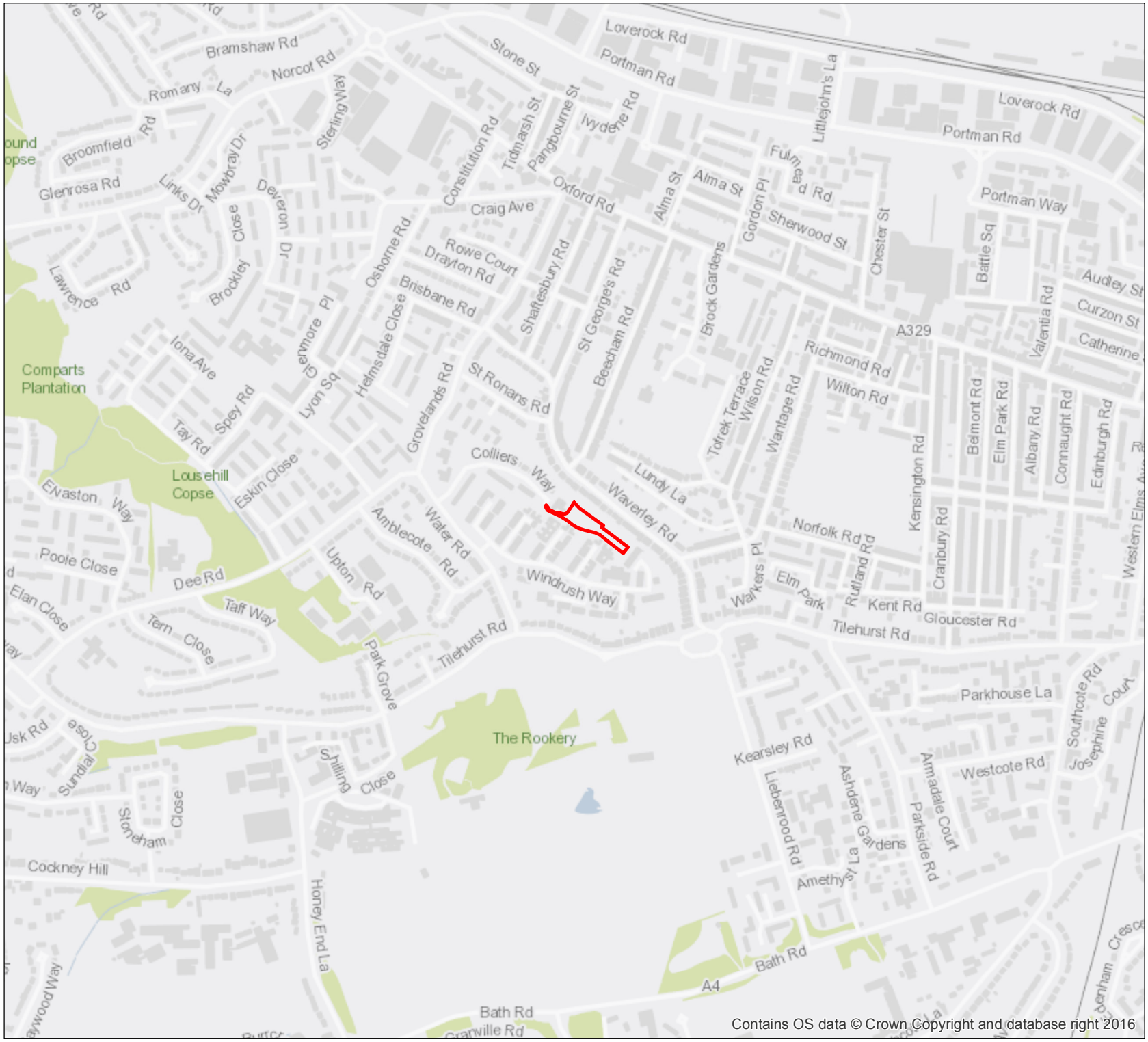

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LAND AT THORPE HOUSE, COLLIERS WAY, WAVERLEY ROAD, READING

PRELIMINARY ECOLOGICAL APPRAISAL

Map 1 - Site Location

Client:	JSA Planning
Date:	May 2017
Status:	Final

KEY

Site Boundary

Scale at A4: 1:10,000

0 40 80 160 240 320 Metres

N

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Appendix 1 Site Proposals Plan

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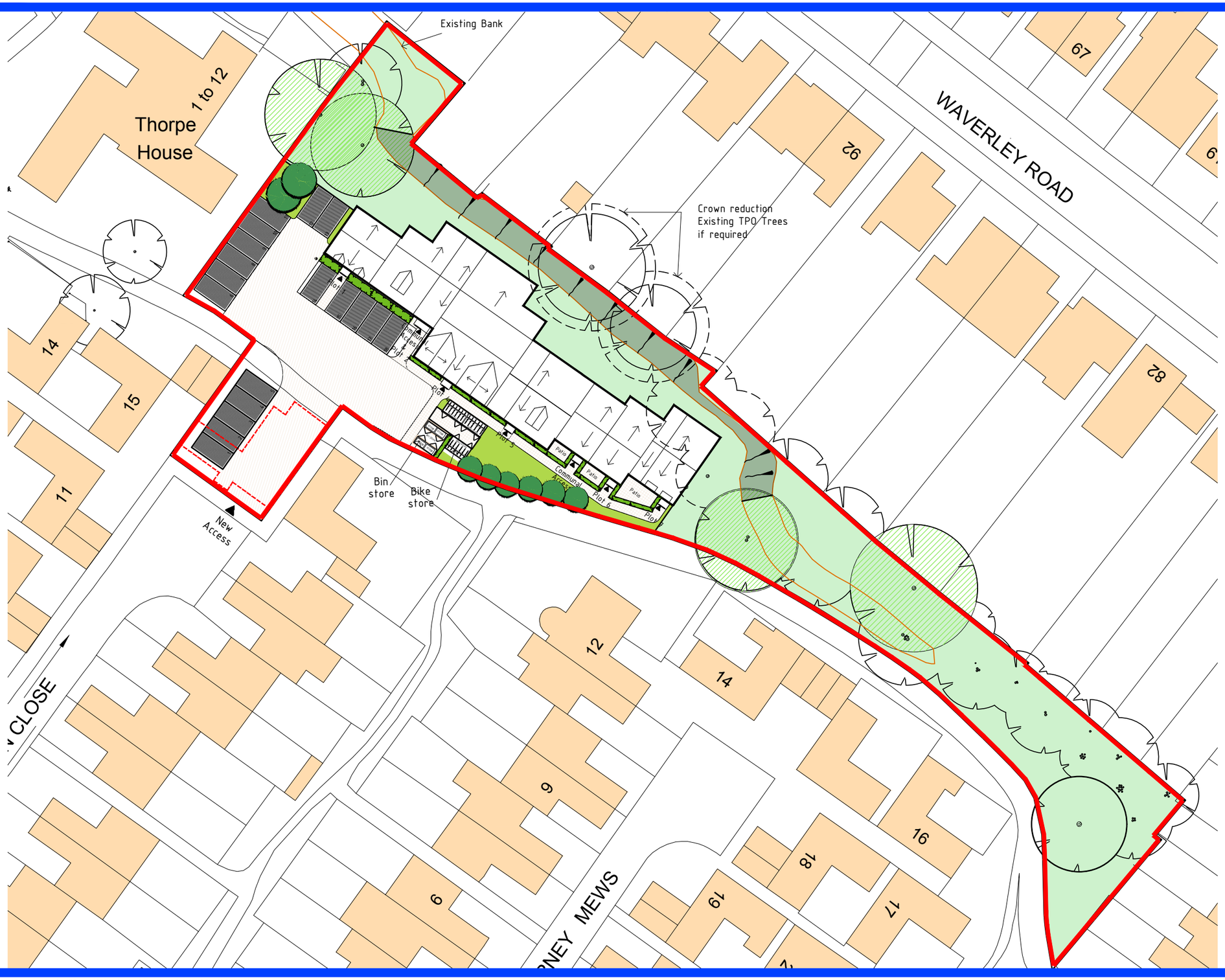

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KEY

- Existing TPO Trees (Subject to Tree Survey)
- Indicative Landscaping
- Existing trees to be retained
- Existing trees to be removed
- Existing Building to be removed
- Shared Surface / Path / Permeable Surface
- Soft Landscaping / Rear Gardens
- Existing buildings
- The Proposal
- The Proposed Bank
- Pathway

1:1 Parking Spaces
1:1 Bike spaces

0 5 10 20 30
1:500

Projects\Residential Developers\The Cardiff Property\CPCW - Land at Colliers Way\3-PLANNING\PL-100-SITEPLAN.dwg
5/2017A-Planning.ctb

Subject to:
Full Site and Building Survey
Planning and Highways

Any easements, covenants and contractual agreements restricting, limiting or preventing potential development of the site to be brought to the immediate attention of jsa architects.

The Cardiff Property
Land at Colliers Way
Proposed Site Layout

Project	CPCW
Dwg No/rev.	PL-101
Scale	1:500@A3
Date	Mar 2017
Checked by	D.G

Appendix 2 Sites Designated for Nature Conservation

Statutory Sites

Internationally Designated Sites - Ramsar Sites, Special Areas of Conservation and Special Protection Areas

Special Protection Areas (SPA) and Special Areas of Conservation (SAC) form a network of protected sites across the European Union called Natura 2000 sites. In the United Kingdom the primary legislative protection is afforded to these sites under the Conservation of Habitats and Species Regulations 2010 (as amended).

Ramsar sites are designated as wetlands of international importance which are afforded similar legislative protection to Natura 2000 sites.

SACs are sites which support internationally important habitats or internationally important assemblages or populations of species. SPAs are designated for supporting internationally important populations of birds listed in the annexes of the Birds Directive. SACs, SPAs and Ramsar sites are generally also designated as Sites of Special Scientific Interest.

Under Regulation 61 of the Conservation of Habitats and Species Regulations 2010 (as amended) there is a legal requirement that competent authorities, such as local planning authorities, need to consider whether plans or projects are likely to have a significant adverse effect on Natura 2000 sites or Ramsar sites, either alone, or in combination with other plans or projects. In the event that a likely significant effect cannot be ruled out, on the basis of objective information, then the competent authority must undertake an “Appropriate Assessment” to fully assess the plan or project against the site’s conservation objectives. Unless certain defined derogation tests can be met, the competent authority may not authorise nor undertake any plan or project which adversely affects the integrity of a Natura 2000 site or Ramsar site.

Nationally Designated Sites – Sites of Special Scientific Interest and National Nature Reserves

Sites of Special Scientific Interest (SSSI) receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Such sites are designated to protect specific areas of biological or geological interest of national importance. Such sites also generally receive strict protection through the planning system.

National Nature Reserves (NNR) are also usually designated as SSSIs and are specifically managed for their wildlife value. They receive legal protection through the National Parks and

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Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). As with SSSIs, these sites generally receive strict protection through the planning system.

Locally Designated Sites – Local Nature Reserves

Local Nature Reserves (LNR) are designated by local authorities under the National Park and Access to the Countryside Act 1949. These are generally designated not only for their local wildlife value but also for education, scientific and recreational purposes. These sites generally receive protection from development through the planning system.

Non-Statutory Sites

Locally Designated Sites

In addition to statutory designations, local authorities often designate sites of nature conservation importance at the local level. Such designations are named differently by each local authority and may be referred to as Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC) or Sites of Nature Conservation Importance (SNCI), amongst others. The exact level of protection afforded to these sites varies and is normally defined through local planning policy.

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Appendix 3 Assessment Criteria for Bats

Criteria used to Assess Suitability of the Site for Bats

The criteria used to assess the suitability of roosting and foraging/commuting habitat for bats is based on industry guidelines and outlined in **Table 2**[23].

Table 2: Criteria used to Assess Suitability of Roosting and Foraging/Commuting Habitat for Bats

Suitability	Description of roosting habitats	Commuting and foraging habitats
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Moderate	A structure of tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically/structure that does not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerows or un-vegetated stream, but isolated (i.e. not very well connected to the surrounding landscape by other habitat). Suitable, but isolated, habitat that could be used by small numbers of foraging bats such as a lone tree or a patch or scrub.
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

[23] Table adapted from Collins, J. (Ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Third Edition). The Bat Conservation Trust, London

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Appendix 4 Protected Species Legislation

Bats

All UK bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely:
- To impair its ability to survive, breed, or rear or nurture their young;
- To impair its ability to hibernate or migrate;
- To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat *Rhinolophus ferrumequinum*;
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Bechstein's bat *Myotis bechsteinii*;
- Barbastelle *Barbastella barbastellus*; and
- Greater mouse-eared bat *Myotis myotis*.

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside SACs, the level of legal protection that these species receive is the same as for other bat species.

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Breeding Birds

With certain exceptions, all wild birds, their nests and eggs are protected by Section 1 of the Wildlife and Countryside Act 1981 (as amended). Therefore, it is an offence, to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- Intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls. Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- Intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- Intentionally or recklessly disturb the dependent young of any such bird.

Reptiles

The four widespread species of reptile that are native to Britain, namely common or viviparous lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix*, are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence to:

- Intentionally kill or injure any of these species.

The remaining native species of British reptile (sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) receive a higher level of protection via inclusion under Schedule 2 of the Conservation of Habitats and Species Regulations 2010. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations (in England and Wales only) and the Wildlife and Countryside Act 1981 (as amended). The distribution of these species are restricted to only a few sites in England.

Species of Principal Importance in England

The Natural Environment and Rural Communities (NERC) Act came into force on 1st Oct 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The England Biodiversity List is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their

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normal functions. There are currently 943 species of principal importance included on the England Biodiversity List.

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