

Appendix: Ecology

Annex 1: Legislation, Planning Policy and Guidance

Annex 1: Key Legislation, Policy and Guidance Considerations

- 1.1 The ecology assessment has been undertaken within the context of relevant planning policies, guidance documents and legislative instruments. These are summarised below.

Legislation, Regulation and Planning Policy

Legislation

The Conservation of Habitats and Species Regulations 2017

- 1.2 The Conservation of Habitats and Species Regulations 2017, as amended¹ implements the Bern Convention, and the Birds Directive and the Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC, the Habitats Directive) in England and Wales. These Directives specify the designation and protection of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) which are together known as Natura 2000 sites. They also provide protection for various fauna termed European Protected Species (EPS). These include all species of bat. In the UK all EPS receive full protection under the Habitats Regulations through their inclusion on Schedule 2.

The Wildlife and Countryside Act 1981

- 1.3 The Wildlife and Countryside Act 1981, as amended² provides legal protection for Sites of Special Scientific Interest (SSSI) in England and Wales. It also provides varying levels of protection for all wild birds, including those listed on Schedule 1 (Sch1) which receive greater protection whilst breeding, along with animals listed on Schedule 5 of the Act.

Natural Environment and Rural Communities Act 2006

- 1.4 Section 40 of the Natural Environment and Rural Communities Act 2006³ (NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

- 1.5 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance in England. The list is used to guide planning authorities in implementing their duty under the NERC Act.

The Protection of Badgers Act 1992

- 1.6 The Protection of Badgers Act, 1992⁴ consolidates the previous Badger Acts of 1973 and 1991. Under this legislation badgers receive protection from killing, injury or being mistreated. Badger setts are also protected from intentional or reckless damage, being destroyed or being disturbed whilst a badger is in residence.

National Policy

National Planning Policy Framework

- 1.7 The National Planning Policy Framework⁵ (NPPF) replaced Planning Policy Statement (PPS9) in April 2012, and was updated in 2019, as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy.

- 1.8 In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

¹ HMSO (2017). The Conservation of Habitats and Species Regulations. HMSO

² HMSO (1981). Wildlife and Countryside Act. HMSO

³ HMSO (2006). Natural Environment and Rural Communities Act. HMSO

⁴ HMSO (1992). The Protection of Badgers Act. HMSO

Local Policy

Woking Borough Core Strategy

- 1.9 The Woking Borough Core Strategy (2012) deals with matters of strategic importance for the Woking area.

Policy CS7: Biodiversity and Nature Conservation

- 1.10 The Council is committed to conserving and protecting existing biodiversity assets within the Borough. It will require development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate. This will include those habitats and species listed in the Surrey Biodiversity Action Plan (BAP). Any development that will be anticipated to have a potentially harmful effect or lead to a loss of features of interest for biodiversity will be refused.

- 1.11 The Council will encourage new development to make a positive contribution to biodiversity through the creation of green spaces, where appropriate, and the creation of linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

- 1.12 Any development with potential impact on the SPA or the SAC will be subject to a Habitats Regulations Assessment to determine the need for Appropriate Assessment.

Policy CS17: Open space, green infrastructure, sport and recreation

- 1.13 All proposals for new residential development (other than replacement dwellings) will be required to contribute towards the provision of open space and green infrastructure, including the following:

- children's play areas and outdoor recreational facilities for young people, and
- outdoor sports facilities.

- 1.14 Developers will be expected to contribute to provision through the Community Infrastructure Levy (CIL) or on larger sites through on-site provision and/or a S106 contribution as appropriate. Development involving the loss of open space will not be permitted unless:

- alternative and equivalent or better provision is made available in the vicinity; or
- the development is directly related to the enhancement of the open space.

- 1.15 New residential units within five km of an SPA will be required to provide or contribute to the provision and improvement of Suitable Alternative Natural Greenspace (SANG) which is a component of Green Infrastructure and also its Strategic Access Management and Monitoring (SAMM). This land will be used to mitigate the impact and effect of residential development on the SPA, by providing informal recreation land of appropriate quality across Woking Borough. Standards for the provision of SANG are set out in the Council's Thames Basin Heaths SPA Avoidance Strategy 2010-15.

Policy CS22: Sustainable Construction

- 1.16 New residential development on greenfield sites will be required to meet the Code for Sustainable Homes level 5 (or any future national requirement) from now because of the relatively lower cost of developing such sites.

- 1.17 The Council will consider a case based on evidence of viability if an applicant can demonstrate that the requirement for code level 5 cannot be met. This will be considered on a case by case basis. New non-residential development of 1,000 sq.m or more (gross) floorspace is required to comply with BREEAM very good standards (or any future national equivalent).

- 1.18 All development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code.

Other Relevant Standards and Guidance

- 1.19 The following technical standards and guidance have been used and consulted upon during the assessment.

⁵ Department for Communities and Local Government, 2019. Revised National Planning Policy Framework. London. HMSO

Assessment

1.20 The following documents were used to inform the ecological impact assessment:

- Woking Borough Council Site Allocations DPD – Habitats Regulations Assessment⁶.
- BS42020:2013 Biodiversity: Code of practice for planning and development⁷.
- CIEEM Guidelines for Ecological Report Writing⁸.
- CIEEM Guidelines for Preliminary Ecological Appraisal⁹.
- CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine¹⁰.
- Guildford Borough Council Thames Basin Heaths Special Protection Area Avoidance Strategy¹¹.

Habitats

1.21 The JNCC Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit¹² was used to inform the baseline habitat survey and assessment:

Bats

1.22 The Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines¹³ was used to inform the bat surveys and assessment.

Great crested newt

1.23 The following guidance documents were used to inform the great crested newt surveys and assessment:

- Amphibian and Reptile Groups of the UK Advice Note 5- Great Crested Newt Habitat Suitability Index¹⁴.
- The Freshwater Habitats Trust's Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA¹⁵.

Reptiles

1.24 Froglife's Advice Sheet 10¹⁶ was used to inform the reptile survey and assessment

⁶ AECOM (2018). Woking Borough Council Site Allocations DPD – Habitats Regulations Assessment. <http://www.woking2027.info/ldfresearch/hra/hrareport> [accessed 20 February 2019].

⁷ BSI (2013) BS42020:2013 Biodiversity: Code of practice for planning and development. British Standards Institute, London.

⁸ CIEEM (2015) Guidelines for Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

⁹ CIEEM (2017) Guidelines for Preliminary Ecological Appraisal Second Edition. December 2017 https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf [accessed 20 February 2019].

¹⁰ 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.

¹¹ Guildford Borough Council (2017). Thames Basin Heaths Special Protection Area Avoidance Strategy 2017. Supplementary Planning Document <https://www.guildford.gov.uk/media/24946/Thames-Basin-Heaths-SPA->

[Avoidance-Strategy-SPD-2017/pdf/Thames_Basin_Heaths_SPA_Avoidance_Strategy_SPD_2017.pdf](https://www.guildford.gov.uk/media/24946/Thames-Basin-Heaths-SPA-Avoidance-Strategy-SPD-2017/pdf/Thames_Basin_Heaths_SPA_Avoidance_Strategy_SPD_2017.pdf) [accessed 20 February 2019].

¹² JNCC (2010). Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit. England Field Unit, Nature Conservancy Council.

¹³ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd edition. The Bat Conservation Trust, London.

¹⁴ Amphibian and Reptile Groups of the UK (May 2010) ARG Advice Note 5- Great Crested Newt Habitat Suitability Index

¹⁵ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dun F. (2014) Analytical and methodological development for improved surveillance of the great crested newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

¹⁶ Froglife (1999) Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife advice sheet 10, Froglife.

Annex 2: Preliminary Ecological Appraisal Report

Egley Road, Woking
Preliminary Ecological Appraisal
Report for Woking Football Club

Job Number	7758			
Author	Gemma Watkinson MBiolSci (Hons) ACIEEM			
Version	Checked by	Approved by	Date	Type
1.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM	Wendy McFarlane MA MSc MCIEEM	14/03/2019	Initial
2.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		18/03/2019	Revision
3.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		09/05/2019	Revision
4.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		13/11/2019	Revision
5.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		20/11/2019	Final



Contents

Summary of key issues	2
1 Introduction	4
2 Methodology	7
3 Results	11
4 Potential Impacts and Recommendations	25
References	35
Appendix 1: Habitat Map	38
Appendix 2: Target Notes	40
Appendix 3: Photographs	42
Appendix 4: Plant Species List	47
Appendix 5: Legislation	50

LIABILITY

The Ecology Consultancy has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of The Ecology Consultancy. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by The Ecology Consultancy, unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of The Ecology Consultancy. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy, part of the Temple Group, is the trading name of Ecology Consultancy Ltd.

Summary of key issues

The Ecology Consultancy was commissioned to carry out a Preliminary Ecological Appraisal (PEA), comprising a Phase 1 habitat survey, protected species assessment and ecological evaluation of land at Egley Road, Woking. The main findings of the PEA are as follows:

- The proposed development site comprised a building, an area of broadleaved plantation woodland, semi-improved grassland, amenity grassland, scattered trees, scrub and bracken.
- The site is not subject to any statutory or non-statutory nature conservation designations. There are two national statutory designated sites within a 2km radius, the closest being Mayford Meadows Local Nature Reserve located approximately 220 metres to the south-east of the site. The nearest non-statutory designated site is Barnsbury Meadow & Bonsey Lane Woods (Inc. Barnsbury School) Site of Nature Conservation Importance, located approximately 90m east of the site.
- The woodland on site is not a Habitat of Principal Importance. However, this habitat is considered to be of local value and should be retained on site. Working under the principle of 'net-gain' as supported by planning policy, any habitats to be removed, as is currently proposed, should be compensated for through creation of compensatory replacement habitat of equivalent or greater value.
- Other habitats present within the proposed development site are considered to be of site value only. They are unlikely to support any rare species, or diverse assemblages or large populations of any noteworthy species.
- **Bats** – No features with suitability to support roosting bats were identified within the existing building and it was assessed as having negligible potential for roosting bats. Trees with features suitable to support roosting bats were recorded on site. A Ground Level Roost Assessment should be carried out for all trees on site, followed by tree climbing or emergence surveys (May – August) if necessary. The woodland and grassland habitats on site have the potential to support commuting and foraging bats, and the adjacent railway line at the north provides a potential commuting and foraging corridor for bats through the landscape. Further survey work should be carried out during the active bat season (April – October) to determine the use of the site by commuting and foraging bats. This comprises night time activity (transect & static) surveys. Throughout the construction works, and post development, appropriate lighting should be used to avoid light spill onto the adjacent commuting and foraging habitats at the north.

- **Great crested newt** – habitats with the potential to support great crested newt during their terrestrial phase were present on site, and there is a pond located approximately 90m to the south of the site. In order to comply with legislation, further survey work will be required to establish the presence/ absence of great crested newt on site. A Habitat Suitability Index (HSI) assessment can be carried out at any time, followed by an eDNA survey (mid April – end of June) on the pond. If the eDNA survey result is positive for great crested newts, then population estimate surveys will be required (mid March – mid June). There is an option to avoid further surveys by following the Woking District Licensing Scheme, whereby a payment is made to contribute to strategic enhancements in the borough.
- **Reptiles** - The site contains suitable habitat to support widespread reptile species such as slow-worm, common lizard and grass snake. Further surveys will be required to confirm presence/likely absence of widespread reptiles on site and provide an estimate of the population sizes of these species if present at the site, to establish the requirements of mitigation to facilitate the proposed development.
- **Breeding birds** – breeding birds are likely to be present on site in the woodland, scattered trees and scrub. Existing trees, woodland and scrub habitats will be removed in the current proposals. In order to comply with legislation, these habitats should be removed September to February inclusive which is outside of the main bird breeding season. Where removal outside the nesting season is not possible a check for nesting birds prior to vegetation clearance should be undertaken by an experienced ecologist and, if any nests are found, the nests should be protected until such time as the young have left the nest.
- **Invasive species** – Species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded within the woodland habitats, towards the south-east of the site. It is an offence to plant or otherwise cause the spread of this species in the wild. A precautionary approach is recommended with regards to these species, to ensure that there is no risk of spreading them, whereby any Schedule 9 vegetation should be chemically treated and either burned or buried on site.
- Recommendations to enhance the biodiversity value of the site comprise inclusion of biodiverse roofs, Sustainable Drainage Systems (SuDS), wildlife planting, flowering lawn mix for any areas of amenity grassland, nesting features for birds, roosting features for bats, and additional deadwood habitats.

1 Introduction

BACKGROUND TO COMMISSION

- 1.1 The Ecology Consultancy was commissioned by Woking Football Club in February 2019, to carry out a Preliminary Ecological Appraisal (PEA) of an existing building and areas of land at Egley Road, Woking, in Surrey. The appraisal was carried out in order to provide ecological information to inform a planning application for the site. This appraisal considers land within the site boundary (hereon referred to as ‘the site’) as indicated on the plan provided by the client.

SCOPE OF THE REPORT

- 1.2 The aim of this appraisal is to provide baseline ecological information about the site. This will be used to identify any potential ecological constraints associated with the development and/or to identify the need for additional survey work to further evaluate any impact that may risk contravention of legislation or policy relating to protected species and nature conservation. Where necessary, avoidance, mitigation/compensation and/or enhancement measures have been recommended to ensure compliance.
- 1.3 This appraisal is based on the following information sources:
 - a desk study of the site and land within a 2 kilometre (km) surrounding radius;
 - a Phase 1 habitat survey (JNCC, 2010) of the site to identify and map the habitats present;
 - a protected species assessment of the site to identify features with potential to support legally protected species; and
 - an evaluation of the site’s importance for nature conservation.
- 1.4 This appraisal has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017).
- 1.5 The survey, assessment and report were conducted and written by Gemma Watkinson MBIolsci ACIEEM, an Ecologist with over three years’ experience who is competent in carrying out Phase 1 habitat surveys and protected species assessments.

SITE CONTEXT AND STATUS

1.6 The site currently comprises open field, with one building located in the north-east of the site. There is a large area of trees in the southern portion of the site and access to the site is via a small road off of Egley Road (A320), located to the east of the site. It is approximately 4.1 hectares (ha) in size and is centred on Ordnance Survey National Grid reference SU 99416 56408. The site lies off Egley Road, on the outskirts of Woking, in Surrey. The site is not subject to any statutory or non-statutory nature conservation designations. The site is bordered by a school and sports facility to the north, a railway line to the west, a garden centre and business properties to the east, and residential dwellings and gardens to the south. The wider landscape comprises grassland fields with hedgerows and woodland to the west, further residential dwellings, and Mayford Meadows Local Nature Reserve to the east of Egley Road, and further residential properties and a school to the south, and grassland and scattered trees in the wider landscape to the south.

DEVELOPMENT PROPOSALS

1.7 The proposals are for the redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road serving Hoe Valley School.

RELEVANT LEGISLATION AND PLANNING POLICY

1.8 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 5:

- The Conservation of Habitats and Species Regulations 2017 (commonly referred to as the Habitats Regulations);
- Wildlife and Countryside Act 1981 (as amended);
- Natural Environment and Rural Communities Act 2006;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

1.9 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) requires local authorities to avoid and minimise impacts on biodiversity and to provide net gains in biodiversity when taking planning decisions.

1.10 Other planning policies at the local level which are of relevance to this development include the adopted Woking Borough Core Strategy (2012). Further information is provided in Appendix 5.

2 Methodology

DESK STUDY

2.1 The following data sources were reviewed to provide information on the location of statutory designated sites¹, non-statutory designated sites², legally protected species³, Species and Habitats of Principal Importance⁴ and other notable species⁵ and notable habitats⁶ that have been recorded within a 2km radius of the site. The search for statutory internationally designated sites was extended to include sites within a 5km radius of the site:

- Surrey Biodiversity Information Centre (SBIC), the local Biological Records Centre, principally for species records and information on non-statutory sites;
- MAGIC (<http://www.magic.gov.uk/>) - the Government's on-line mapping service;
- Ordnance Survey mapping and publicly available aerial photography; and
- Woking Borough Council Planning search <https://caps.woking.gov.uk/online-applications/> – for documents associated with the development of land to the north of the site (PLAN/2015/0703), including ecology reports. The redline site boundary of this development included the northern part of the current survey site. Protected species surveys were carried out across part of the current survey site in 2015, including surveys for dormouse, reptiles, badger, grayling butterfly, and bat surveys.

¹ Statutory designations include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

² Non-statutory sites are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

³ **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2017; or in the Protection of Badgers Act 1992 (as amended).

⁴ **Species of Principal Importance** are those listed on Section 41 of the Natural Environment and Rural Communities Act, 2006.

⁵ **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2015); and/or Red Data Book/nationally notable species (JNCC, undated).

⁶ **Notable habitats** include Habitats of Principal Importance under the Natural Environment and Rural Communities Act, 2006; those included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

2.2 The full data search results are not presented in the report. However, relevant records provided by the desk study are provided in Section 3 of this report. Records for relevant protected or noteworthy species have been used to inform the assessment of the potential for protected species at the site and to provide a preliminary view of the site's ecological value.

HABITAT SURVEY

2.3 A habitat survey of the site was carried out on the 19 February 2019 in cool, dry, and bright conditions with a gentle breeze. It covered the entire site including boundary features. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010). Habitats were marked on a paper base map and subsequently digitised using ESRI ArcGIS software. Habitats were also assessed against descriptions of Habitat of Principal Importance (HPI) as set-out by the JNCC (BRIG, 2008)⁷.

2.4 Records for dominant and notable plants are provided, as are incidental records of birds and other fauna noted during the course of the habitat survey.

2.5 Common names are used where widely accepted – for amphibians, birds, fish, mammals, reptiles and vascular plants. Scientific names are provided for other groups but at first mention only if there is also an accepted common name.

2.6 The site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, detailed mapping of such species is beyond the scope of this commission and the locations on the habitat plan are indicative only.

2.7 Target notes are used to provide information on specific features of ecological interest (e.g. a badger sett) or habitat features that were too small to be mapped.

PROTECTED AND INVASIVE SPECIES ASSESSMENT

2.8 The suitability of the site for legally protected species was assessed on the basis of relevant desk study records⁸ combined with field observations from the habitat survey.

⁷ Data required to confirm that certain habitats (including rivers and ponds) meet criteria for Habitats of Principal Importance is beyond that obtained during a Phase 1 habitat survey. In these cases the potential for such habitats to meet relevant criteria is noted but further surveys to confirm this assessment may be recommended

⁸ Primarily dependent on the age of the records, distance from the site and types of habitats at the site.

The likely value of habitat for protected species occurrence was ranked on a scale from 'negligible' to 'present' as described in Table 2.1.

2.9 The assessment of habitat suitability for protected or notable species was based on professional judgement drawing on experience of carrying out surveys of a large number of urban and rural sites and best practice survey guidance on habitat suitability and identifying field signs. Further information is provided in CIEEM's Sources of Survey Methods⁹.

Table 2.1: Protected species assessment categories

Category	Description
Present	Presence confirmed from the current survey or by recent, confirmed records.
High	Habitat present provides all of the known key requirements for a given species/species group. Local records are provided by desk study. The site is within or close to a national or regional stronghold for a particular species. Good quality surrounding habitat and good connectivity.
Moderate	Habitat present provides all of the known key requirements for a given species/species group. Several desk study records and/or site within national distribution and with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, barriers to movement and disturbance.
Low	Habitat present is of relatively poor quality for a given species/species group. Few or no desk study records. However, presence cannot be discounted on the basis of national distribution, nature of surrounding habitats or habitat fragmentation.
Negligible	Habitat is either absent or of very poor quality for a particular species or species group. There were no desk study records. Surrounding habitat unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species.

2.10 The findings of this assessment establish the need for protected species surveys that are required to achieve compliance with relevant legislation. Surveys are commonly required for widespread species such as bats, great crested newt, reptiles and badger; but may be necessary for other species if suitable habitat is present.

2.11 Surveys may be required where a site is judged to be of low suitability for a particular species/species group. However, in some cases there may be opportunities to comply with legislation, without further survey, through precautionary measures prior to and during construction.

SITE EVALUATION

2.12 The site's ecological value has been evaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) which ranks the nature conservation value of a site according to a geographic scale of reference: international, national, regional, county/metropolitan, district/borough, local/parish or of value at the site scale. In evaluating the nature conservation value of the site the following factors were considered: nature conservation designations; species/habitat rarity; naturalness; fragility and connectivity to other habitats.

DATA VALIDITY AND LIMITATIONS

2.13 Every effort has been made to provide a comprehensive description of the site; however, the following limitations apply to this assessment:

- The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. It should not be taken as providing a full and definitive survey of any protected species group. Additional surveys may be recommended if on the basis of the preliminary assessment or during subsequent surveys it is considered reasonably likely that protected species may be present.
- The ecological evaluation is preliminary and may change subject to the findings of further ecological surveys (should these be required).
- Even where data for a particular species group is provided in the desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, the area may simply be under-recorded.
- Where only four figure grid references are provided for protected species by third parties, the precise location of species records can be difficult to determine and they could potentially be present anywhere within the given 1km x 1km square. Equally six figure grid references may be accurate to the nearest 100m only.
- The Phase 1 habitat survey does not constitute a full botanical survey or provide accurate mapping of invasive plant species. The survey was not completed within the optimal season for identifying plants.
- Ecological survey data is typically valid for two years unless otherwise specified.

2.14 Despite these limitations, it is considered that this report accurately reflects the habitats present, their biodiversity values and the potential of the site to support protected and notable species.

⁹ <http://www.cieem.net/sources-of-survey-methods-sosm->

3 Results

DESIGNATED SITES

Statutory designated nature conservation sites

3.1 The proposed development site is not subject to any statutory nature conservation designations. There are two European designated statutory sites within a 5km radius of the site, the closest of which is Thames Basin Heaths Special Protection Area (TBH SPA), approximately 2.6km south-west. There are two nationally designated statutory sites located within a 2km radius of the site. The closest statutory site to the proposed development site is Mayford Meadows Local Nature Reserve (LNR) located approximately 220 metres (m) to the south-east (see Table 3.1).

Table 3.1: Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Mayford Meadows (LNR)	220m south-east	Wetland management has encouraged the establishment of a rich, wet grassland flora and numerous trees have been coppiced and pollarded in order to enhance its biodiversity interest and provide suitable habitats for water vole.
Smart's and Prey Heaths Site of Special Scientific Interest (SSSI)	560m south-west	The site consists of a mosaic of heathland habitats including wet and dry heath, scrub and fringing woodland. The heathland supports characteristic heathland birds, including occasional breeding nightjar. The heathlands are predominantly damp, the sward being dominated by ling heather, cross-leaved heath, and purple moor grass. Other plants include creeping willow, dwarf gorse, deergrass, and long-leaved and round-leaved sundews.
Thames Basin Heaths Special Protection Area (TBH SPA)	2.6km south-west	The site consists of tracts of heathland, scrub and woodland. Less open habitats of scrub, acidic woodland and conifer plantations dominate, within which are scattered areas of open heath and mire. The site supports important breeding populations of a number of birds of lowland heathland, especially Nightjar and Woodlark, both of which nest on the ground, often at the woodland/heathland edge, and Dartford Warbler, which often nests in gorse. Scattered trees and scrub are used for roosting. Together with the nearby Wealden Heaths SPA and Ashdown Forest SPA, the Thames Basin Heaths form part of a complex of heathlands in southern England that support important breeding bird populations.
Thursley, Ash, Pirbright & Chobham Special Area of	3.1km south-west	This site represents lowland northern Atlantic wet heaths, and contains several rare plants, including great sundew, bog hair-grass, bog orchid and brown beak-sedge. There are transitions to valley bog and dry heath. Thursley Common is an important site for invertebrates, including

Table 3.1: Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Conservation (SAC)		the nationally rare white-faced darter, and the site supports an important assemblage of animal species including European nightjar, Dartford warbler, sand lizard and smooth snake.

Non-statutory designated nature conservation sites

3.2 The proposed development site is not subject to any non-statutory nature conservation designation. There are 13 non-statutory sites, designated as Sites of Nature Conservation Interest (SNCI) within 2km of the site. The closest is Barnsbury Meadow & Bonsey Lane Woods (Inc. Barnsbury School) SNCI, located approximately 90m east of the Egley Road site, separated by Egley Road. Mayford Meadows SNCI is located adjacent to the east of the above site, approximately 180m east of the survey site, also separated by Egley Road. A summary of the non-statutory sites located within 2km of the site is presented in Table 3.2 below.

Table 3.2: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Barnsbury Meadow & Bonsey Lane Woods (including school) SNCI	90m east	The site contains wet grassland, broadleaved wet and dry woodland. The site forms an important part of a corridor of sites along the Hoe Valley, and is important for its habitat diversity including wet grassland and wet woodland. It supports an important invertebrate site and good populations of warblers and other passerines of damp meadows. The site has been identified as having potential to support otter.
Mayford Meadows SNCI	180m east	The site includes marsh, swamp, fen, scrub, woodland and mesotrophic grassland. It supports a range of wetland habitats and is an important site for invertebrates (nationally scarce invertebrates are present) and passerines of damp meadows.
Hoe Stream SNCI	190m east	The stream is important in the Borough and provides a valuable link and habitat corridor for the SNCI sites in the Hoe Valley SNCI corridor.
Kemishford Bridge to Railway – Hoe Valley SNCI	850m south-west	The site contains damp meadows, pasture fields, rough grassland and streamside vegetation. It has high species and habitat diversity. The damp meadows support common spotted orchid and marsh orchids as well as 11 species typical of grassland of conservation interest in Surrey. The site is a valuable link between Smarts Heath and Prey Heath SSSIs.

Table 3.2: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Hook Heath Golf Course Pond SNCI	1km north-west	The pond supports rare and uncommon plant species in the County and it is a good site for invertebrates.
Westfield Common SNCI	1km south-east	The site contains woodland, scrub, wetland, grassland and ponds. It supports nationally scarce plant species, and there are records of great crested newt in two of the ponds. There are species-rich areas of wet woodland, drains and ponds. This area has been selected for inclusion within the improvement plan for great crested newts in Woking Borough (ADAS, 2016).
West of Kemishford Bridge – Hoe Valley SNCI	1.6km south-west	The site was selected for rush dominated grassland with a good unimproved meadow and a small alder carr.
Blackhorse Road Woods and Meadow SNCI	1.7km west	This site contains alder woodland, marshy areas bordering a stream, ditches and unimproved meadow. It was selected for its wet woodland habitat, part of which has been wooded since at least 1871. There have been 13 ancient woodland indicator species recorded.
Whitmoor Pond SNCI	1.74km south	The site contains wet woodland, a pond and wet tussocky grassland. It was selected for its wet woodland and wet grassland habitat. The site supports two species shown on the Surrey Rare Plant Register as Surrey Scarce; Water-violet and Spiked Water-milfoil. The site is an important protective buffer for Whitmoor Common SSSI. Past records indicate it is an important bryophyte site.
Mill Moor SNCI	1.8km east	The site is situated on the floodplain of the River Wey, largely composed of semi-improved mesotrophic grassland, including central stands of wet grassland. Two ponds are present on site, and the site was selected for its species-rich wetland and ponds. Past records include at least 19 species typical of grassland of conservation interest in Surrey including 7 on the current draft Surrey Rare Plant Register. Although a recent survey has found it to have declined, with appropriate management it is thought that the site could regain some of its lost species.
Crastock Woods – Hoe Valley SNCI	1.9km south-west	This site was selected for its varied broadleaved woodland with some interesting alder carr. The position of this site is important, forming part of a network of SNCIs along the Hoe Stream corridor.
St John's Lye and Ponds SNCI	1.9km north-west	The site includes woodland, heathland, acid grassland, scrub and ponds. Relict heathland with potential for heathland restoration is also present. The site supports a Nationally Scarce plant species – Chamomile. It is also an important invertebrate and amphibian site.
Basingstoke Canal SNCI	2km north	This site is important for aquatic plants and invertebrates, supporting nationally scarce and regionally rare species.

Habitat inventories and landscape-scale conservation initiatives

Ancient woodland

3.3 There are four areas of ancient semi-natural woodland identified within 2km of the site, the closest of which is located approximately 500m south of the site. There are no ancient woodland sites identified on or adjacent to the proposed development site.

Habitats of Principal Importance

3.4 The area of woodland located on the site is shown as a HPI on MAGIC's Priority Habitat Inventory (lowland mixed deciduous woodland). The woodland contained species that are characteristic of this HPI including pedunculate oak, beech and other native tree species. However, it is a plantation woodland, that is semi-mature. It also contained many non-native species and the understorey of the woodland was species poor. Therefore it is not considered to be HPI.

3.5 A search of MAGIC's Priority Habitat Inventory also revealed the presence of three other HPI habitat types within 2km of the survey area. These HPIs are not found on or adjacent to the site: Lowland Heathland, Lowland Wet Heath and Traditional Orchard.

3.6 There are no records of veteran trees on site (The Ecology Consultancy, 2019).

Species of Principal Importance

3.7 Records for grayling butterfly were returned in the data search within 2km of the site, most recently from 2012. The grassland on site lacks areas of bare ground/rock patches within the grass sward, and the rabbit burrow areas on the margins of the site are considered too small to maintain a viable population of grayling butterfly. There are no areas of heath present on site, and the habitats present are not considered suitable for this species. The previous surveys for grayling butterfly, carried out in 2015 (Thomson Ecology, 2015e), did not record any grayling on the existing grassland areas of the site. These surveys were carried out in good weather conditions for surveying for this species, and despite now being out of date, it is considered unlikely that grayling would have colonised the site since these surveys were completed.

3.8 Woking Borough Species of Principal Importance (SPI) that have been recorded within 2km of the site with potential habitats to support these species found on site include bullfinch, dunnoek, house sparrow and song thrush. Nightjar and Dartford warbler are both SPIs in Woking borough. There are records for nightjar and Dartford warbler within

2km of the site, the most recent records dating from 2006. These species are associated with heathland habitats and are not considered likely to be found on site.

PHASE 1 HABITAT SURVEY

Overview

- 3.9 The proposed development site comprises an area of broadleaf woodland, semi-improved grassland, amenity grassland, and areas of continuous scrub, continuous bracken and scattered trees, and an existing storage shed and areas of hardstanding.
- 3.10 Phase 1 habitat types on site are mapped in Figure 1 (Appendix 1), areas are given in Table 3.3. A description of dominant and notable species and the composition of each habitat is provided below.

Table 3.3: Phase 1 Habitat Areas

Phase 1 Habitat	Extent (ha)	%
Semi-improved grassland	1.35	33
Broadleaved plantation woodland	1.28	31
Bare ground	0.78	19
Amenity grassland	0.38	9
Hard standing	0.14	3
Continuous scrub	0.13	3
Building	0.05	1
Continuous bracken	0.04	1
Total	4.15	100

Habitat description

Semi-improved grassland

- 3.11 Towards the west of the site there was an area of semi-improved grassland (Appendix 3, Photograph 1), that had a short sward. Bent species and fescue species were frequently recorded, with occasional cleavers and ribwort plantain, and dock, Yorkshire-fog, hard rush, soft-rush, creeping buttercup, burdock species, common nettle, and common ragwort recorded rarely. Patches of sheep's-sorrel and parsley piert were also recorded towards the west of the site, and bracken stands were recorded adjacent to the western boundary fence. Rabbit burrows were also noted along the western boundary fence.

- 3.12 A soil bund at the east of the site had also become colonised by similar species, and ruderal species.

- 3.13 Piles of wooden panelling and other discarded materials were located within the grassland area, to the west of the area of woodland (Appendix 1, TN2; Appendix 3, Photograph 2).

Broadleaved plantation woodland

- 3.14 The woodland on site was plantation woodland, comprised mainly of semi-mature broadleaf species, with some evergreen species at the east. The canopy layer comprised frequent pedunculate oak with occasional oak species, beech, silver birch, sycamore, and rarely false acacia, poplar species, lime species, London plane and pine species (Appendix 3, Photograph 3). The shrub layer was poorly developed and contained occasional holly, hawthorn, hazel, elder, snowberry, yew, garden privet, and rose species, and sycamore saplings were locally abundant towards the south-east of the site (Appendix 3, Photograph 4). The ground flora was poor, with lords and ladies, common nettle, bracken, daffodils, ground-ivy and cleavers rarely recorded. Deadwood was recorded within the woodland which supported fungi.

- 3.15 There was an area of what was thought to be three-cornered garlic recorded at the south-east of the site (TN3), and an area of variegated yellow archangel recorded at the east of the site (TN5).

- 3.16 There were also piles of garden waste within the woodland adjacent to the south-western boundary, likely from the adjacent properties, and a large pile of brash and coniferous cuttings located at the north-western edge of the woodland.

Bare ground

- 3.17 There were large areas of bare earth located to the west and south of the existing building. Occasional ephemeral species were recorded on these areas, including common nettle, creeping thistle, prickly sow-thistle and bristly ox-tongue.

Amenity grassland

- 3.18 There was an area of amenity grassland adjacent to the areas of hardstanding at the north-east of the site (Appendix 3, Photograph 5). Perennial rye-grass and creeping thistle were frequently recorded, with occasional Yorkshire-fog, creeping buttercup, spear thistle, common mouse-ear, and rarely recorded species including red dead-

nettle, ribwort plantain, dock species, cut-leaved crane's-bill, spurge species, smooth sow-thistle and vetch species.

Hardstanding

3.19 The areas surrounding the existing building and further to the east comprised hardstanding.

Scattered scrub

3.20 There were areas of scattered bramble scrub located around the scattered trees at the north of the site and on the edges of the woodland, and in the south-western corner of the site.

Building

3.21 The existing building was a large agricultural storage shed, constructed of profile metal sheeting, with a pitched profile metal roof (Appendix 3, Photograph 6). There was a roller shutter door on the eastern elevation, which was closed at the time of the survey.

Scattered trees

3.22 There were several scattered trees on site in addition to the area of woodland. These scattered trees comprised semi-mature pedunculate oak, and a single mature pedunculate oak located close to the northern boundary of the site (Appendix 3, Photograph 7).

PROTECTED AND INVASIVE SPECIES ASSESSMENT

3.23 The potential for the site to support protected species has been assessed using criteria provided in Table 3.3, based on the results of the desk study and observations made during the site survey of habitats at the site. Other legally protected species are not referred to as it is considered that the site does not contain habitats that would be suitable to support them. The following species/species groups are potentially present at the site:

- bats;
- great crested newt;
- dormice;
- breeding birds;
- reptiles; and

- badger.

3.24 The table also summarises relevant legislation and policies relating to protected and invasive species. Key pieces of statute are summarised in Section 1 and set out in greater detail in Appendix 5.

Table 3.3: Protected and Invasive Species Assessment

Habitat/species	Status ^{10, 11}	Likelihood of occurrence
Bats	HR WCA S5	<p>The data search returned 28 records of bats from within 2km of the site. The most recent records include common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton's bat, natterer's bat, whiskered bat and serotine bat all in 2016, and records of noctule bat in 2003. Previous bat surveys associated with the development of the land to the north recorded common pipistrelle, soprano pipistrelle, Myotis species, noctule bat, Leisler's bat and brown long-eared bat. Two common pipistrelles and two soprano pipistrelles were also recorded roosting within a tree to the north of the adjacent development site (Thomson ecology, 2015d).</p> <p>Roosting - building</p> <p>NEGLIGIBLE: The existing building on site was constructed of profile metal sheeting, had been recently constructed and was in good condition. No potential roosting features were identified within the structure of the building, and it is considered to have negligible potential to support roosting bats.</p> <p>Roosting - trees</p> <p>MODERATE: Two trees with the potential to support roosting bats were identified on site. A full ground level roost assessment survey of the trees on site was not within the scope of the Preliminary Ecological Appraisal survey. A semi-mature oak tree had a branch with a horizontal split in it that would have potential to support roosting bats (TN4, Appendix 3, Photograph 8), and a semi-mature London Plane tree with woodpecker holes within a dead stem also had potential to support roosting bats (TN6).</p> <p>Foraging – habitats</p> <p>MODERATE: The woodland and semi-improved grassland habitats on site have the potential to support foraging bats, and the adjacent railway line to the west would provide a potential commuting corridor for bats through the landscape. The site is well connected to suitable foraging and commuting areas for bats within the wider landscape, including areas of grassland, woodland and river corridors such as the Hoe Stream SNCI and Hoe Valley to the south and east.</p> <p>The building on site has negligible potential to support roosting bats, but trees with features with suitability for roosting bats were identified. The habitats on and adjacent to the site have moderate potential to support commuting and foraging bats. Therefore bats will be considered further in this report.</p>

¹⁰ The following abbreviations have been used to signify the legislation regarding different species: HR = Conservation of Habitats and Species Regulations 2017; WCA S1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); WCA S5 = Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); WCA S9 = Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); PBA = Protection of Badgers Act, 1992.

¹¹ The following abbreviations have been used to signify the policy of conservation assessments applying to notable species: SPI = Species of Principal Importance under the NERC Act 2006; LBAP = Local Biodiversity Action Plan species; BoCC = Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2015); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

Table 3.3: Protected and Invasive Species Assessment

Habitat/species	Status ^{10, 11}	Likelihood of occurrence
Great crested newt	HR WCA S5	<p>LOW: The data search returned four records of great crested newt from within 2km of the survey site. The most recent record dates from 2016 and the records are to an accuracy of 1km only, from within the grid squares TQ0055, TQ0056, TQ0156 and SU9856. There are no water bodies on site, but suitable terrestrial habitat for great crested newt includes the areas of scrub, woodland and semi-improved grassland. The compost piles and stacks of timber boarding on site will provide potential refuges for this species.</p> <p>Publicly available aerial photography and OS mapping show there are waterbodies within 500m of the site. There are three ponds shown within Mayford Meadows SNCI to the east of the site, approximately 290m and 320m east of the site. However, there is suitable terrestrial habitat surrounding these ponds, and the busy A320 road separating the site from these ponds is considered to be a barrier to dispersal of newts from these ponds onto the survey site.</p> <p>There is also a pond, known as Mayford Green Pond, approximately 90m south of the site, south of Hook Hill Lane. Hook Hill Lane is not considered to be a significant barrier to dispersal and the garden habitats of the residential properties to the north of Hook Hill Lane could provide commuting corridors to the habitats on site. This pond is not shown as a known great crested newt breeding pond in the Great Crested Newt improvement plans for the area (RSK ADAS Ltd, 2016), however it is not clear from the report whether this pond has previously been surveyed and if it was the results of any surveys would now be considered out of date and could not be relied upon.</p> <p>Given that the pond to the south of the site has the potential to support breeding great crested newt and there is suitable terrestrial habitat on site, this species is considered further in this report.</p>
Dormouse	HR WCA S5	<p>NEGLIGIBLE: Woodland habitat that could support hazel dormouse was present on site, with the woodland comprising a mix of native species and the understorey of the woodland including hazel, providing potential food sources throughout the year. However, the woodland has a closed canopy and heavy shading, and the understorey and ground flora was poorly developed. This reduces the potential foraging habitat, and the woodland lacks bramble which is known to be an important species for dormice (Morris <i>et al.</i>, 2006).</p> <p>The woodland on site is small in size (1.2ha) and has limited connectivity to other suitable woodland habitats in the area, being connected only by the tree canopy over Hook Hill Lane in the south-western corner of the site. In general, as dormice live at low population densities, woodlands of less than 20ha, or smaller woodlands with poor connectivity to other nearby sites are unlikely to support a secure population of dormice.</p> <p>The data search returned no records of hazel dormouse within 2km of the site. Two dormouse nest tubes were noted within the woodland, and a search of the Woking Borough planning portal revealed that dormouse surveys had been carried out in 2015, to inform the development of the school and athletics track to the north of the current site. No hazel dormice were recorded during these surveys, which were carried out an appropriate time of year, and with sufficient survey effort (Thomson Ecology, 2015c). The two nest tubes found during the survey were checked for evidence of dormouse and none was found. It is considered unlikely that dormice will have dispersed into the woodland since these previous surveys were completed.</p>

Table 3.3: Protected and Invasive Species Assessment

Habitat/species	Status ^{10, 11}	Likelihood of occurrence
		Overall, based on the lack of records for this species, the small area of sub-optimal habitat present and limited connectivity of suitable off-site habitat in the wider landscape, there is negligible potential that dormice are present. As there is a negligible likelihood of presence, dormice are not considered further in this report.
Reptiles	WCA S5	HIGH: The data search returned 15 records of widespread reptile species including grass snake, slow worm and common lizard within 2km of the site. These species have also been recorded within the grid square SU9956 which covers the survey site, with slow-worm recorded in 2016 and grass snake and common lizard in 2015. Surveys associated with the development of the land to the north of the site in 2015 included the current site and indicated a medium population of common lizard and slow-worm (Thomson Ecology, 2015b). Individuals were not recorded to the north of the current site. The results of these surveys are considered to now be out of date. The data search returned no records for rare reptile species (sand lizard, smooth snake) and there are not considered to be any suitable habitats for these species on site. Habitats on site considered suitable to provide refuge for reptiles are limited to the small areas of bramble scrub, discarded timber panelling piles on site (Appendix 1, TN2; Appendix 3, Photograph 2) and piles of garden waste. These habitats would be suitable to provide cover for reptiles, but they are small and isolated by unsuitable habitats such as hardstanding, bare earth and amenity grassland. The woodland is also considered suitable to support reptiles. The railway line adjacent to the west of the site provides a potential commuting corridor for common reptile species. The site is connected to suitable off-site habitat towards the west, and the adjacent railway corridor to the north but there is limited connectivity at the south. Egley Road separates the site from other suitable habitat in the east in Mayford Meadows LNR which includes Hoe Stream. Considering the above, there is high potential that reptiles occur at the site and as such they are considered further in this report.
Breeding birds	WCA S5	HIGH: The woodland area, scattered trees, scrub and bracken on site all have potential to support breeding by breeding bird species. Several common bird species were observed during the habitat survey: blackbird, great tit, chaffinch, blue tit, robin, and wood pigeon, and a green woodpecker was heard calling during the survey. A kestrel pellet was recorded on a lower branch of a mature coniferous tree at the south-west of the woodland on site. The existing building does not contain suitable features to support nesting birds. Several SPI birds are listed in the data search as occurring within 2km of the site and have potential to use the site; bullfinch, dunnock, house sparrow and song thrush. Nightjar and Dartford warbler are also listed in the data search, but there are no potential habitats for these species on site. It is likely that breeding birds will occur at the site and as such they are considered further in Section 4 of this report.

Table 3.3: Protected and Invasive Species Assessment

Habitat/species	Status ^{10, 11}	Likelihood of occurrence
Badger	PBA	NEGLECTABLE: A mammal hole was recorded on site (TN1, Appendix 3, Photograph 9). There was a piece of barbed wire crossing this hole which had hair caught in it that was thought to be that of fox. The hole did not have the characteristic shape of a badger sett hole, and is not considered to be used by this species. The woodland and semi-improved grassland habitats on site would provide potential foraging areas for badger. No signs of badger such as latrines, runs or signs of foraging were recorded on site. The data search returned no records of badger within 2km of the survey site. Previous badger surveys carried out on the adjacent site to the north did not record any badger setts or evidence of badger in 2015 (Thomson Ecology, 2015b). Given the lack of definitive field evidence for this species and the relatively isolated location of the site, with fences on all boundaries of the site, it is unlikely that this species is found on site. Considering the above, there is negligible potential that badger may occur at the site and as such they are not considered further in this report. However, precautionary working practices are included to protect other mammals such as fox that may be present on site.
Invasive species	WCA S9	PRESENT: Variegated yellow archangel was recorded on site (TN5, Appendix 3, Photograph 10), and what was considered likely to be three-cornered garlic was also recorded on site within the woodland area (TN3). The desk study returned no records of invasive species within 2km of the site. As invasive species listed on Schedule 9 have been recorded present on site, these species are discussed further in this report.

NATURE CONSERVATION EVALUATION

- 3.25 The proposed development site is not subject to any nature conservation designations. It contains small areas of common and widespread habitats. The plantation woodland present on site does not meet the criteria to qualify as a HPI.
- 3.26 The site is situated within a suburban area, and the closest site of nature conservation importance is located approximately 90m east of the site. The site is connected to open countryside habitats, including semi-improved grassland and woodland, and the adjacent railway line to the west of the site could provide a commuting corridor for wildlife through the landscape. The woodland on site provides a stepping stone to other areas of woodland in the area, including the designated sites Barnsbury Meadow & Bonsey Lane Woods SNCI and Blackhorse Road Woods and Meadows SNCI.
- 3.27 The habitats on site were suitable for a range of note-worthy species, including SPIs and species identified as a priority for Woking borough, as reported in the desk study or recorded during the survey, as follows:
- bats;
 - great crested newt;
 - slow-worm, common lizard and other widespread species of reptile;
 - house sparrow, song thrush, and other widespread but declining species of birds that are also species of conservation concern¹²; and
 - hedgehog.
- 3.28 The woodland on site does not meet the criteria to qualify as a HPI (Maddock, 2008), as it is plantation woodland, which is less than 120 years old. However, it is a valuable habitat, and is considered to be of local value due to its size and ecological function. It is a habitat that has the potential to support priority species for Woking Borough (Surrey Nature Partnership, 2018). All other habitats on the proposed development site are of site value only. It is unlikely that the site would support rare species, or diverse assemblages or large populations of any noteworthy species.
- 3.29 Records for soprano pipistrelle and other species of bats were provided in the desk study, which are Species of Principal Importance. It is not possible to confirm the value of bat populations that may be present at the site unless further surveys have been

¹² Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2015);

undertaken. Further survey work to establish the importance of the site for foraging and commuting bats is outlined in Section 4.

- 3.30 The site is not accessible by the public; however, the social value of the habitats on site could include the enjoyment of woodland bird visitors to bird tables in neighbouring properties. It also provides other ecosystem services such as storm water attenuation and flood alleviation.

4 Potential Impacts and Recommendations

- 4.1 This section summarises the potential impacts on habitats and notable species that may be present at the site. The impact assessment is preliminary and further detailed assessment and surveys will be required to assess impacts and design suitable mitigation, where appropriate.
- 4.2 The following key ecological issues have been identified:
- deciduous plantation woodland, a habitat of local value, is present on site;
 - habitat suitable for roosting, foraging and commuting bats is present - further survey work will be required to determine the use of the site by bats;
 - habitat suitable for terrestrial great crested newt is present on site – further survey work will be necessary to determine whether this species is considered likely to be present on site;
 - habitat suitable for widespread reptiles is present – further survey work must be undertaken to establish the use of the site by widespread reptile species;
 - habitat suitable for breeding birds is present – further survey will be required to determine the importance of the site for breeding birds. Measures must be taken to avoid killing birds or destroying their nests during vegetation clearance;
 - habitats suitable for SPIs are present including stag beetle and hedgehog – these habitats should be retained on site where possible or replaced within the development with measures taken to continue accommodating these species on site post-development;
 - invasive species are present on site – measures should be taken to avoid the spread of these species;
 - habitat suitable for small mammals such as fox and hedgehog is present on the site – measures must be taken to avoid killing or injuring mammals as detailed in the Wild Mammals (Protection) Act 1996; and
 - a range of measures should be undertaken for ecological enhancement of the site within the development plan in line with national and local policy.

CONSTRAINTS AND MITIGATION/COMPENSATION

Designated Nature Conservation Sites

- 4.3 No direct impacts are envisaged on statutory or non-statutory designated sites due to the distance of the site from any designated site. However, the inclusion of residential housing within the development may cause an increase in recreational pressure on the nearby Thames Basin Heaths SPA. The proposed development is located within 5km of this SPA, and within the zone of influence (ZOI) (Guildford Borough Council, 2017). The developer will need to make the appropriate payment into SANG provision. The Draft Site Allocations Habitat Regulations Assessment (AECOM, 2018) concludes that there will be no likely significant effects on European sites as a result of recreational pressure or air quality derived from the Site Allocations. It confirms that each site allocation has sufficient Suitable Alternative Natural Greenspace (SANG) capacity to serve the increased population.

Habitats

- 4.4 An area of deciduous plantation woodland is present on site and under the current proposals all of this habitat will be lost from site as a result of the development. In line with national and local policy, impacts on this habitat should be avoided during development. Working under the principle of ‘net-gain’ as supported by planning policy, any habitats to be removed should be compensated for through creation of compensatory replacement habitat of equivalent or greater value. A net gain assessment should be carried out for the design proposals using the up to date DEFRA guidance¹³.
- 4.5 Scattered trees on site should also be retained within the development where possible. Environmental best practice measures, in accordance with British Standards Institution (2012) guidelines, should be implemented during the management works to protect trees.

Bats

- 4.6 All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. Under this legislation it is an offence to deliberately capture, kill,

¹³ Current guidance is based on 2012 DEFRA metrics and is likely to be updated in 2019.

disturb and damage or destroy a bat roost. Some species of bat are also Species of Principal Importance for Woking Borough (Surrey Nature Partnership, 2018).

- 4.7 At least two trees with cracked branches and woodpecker holes that were suitable for roosting bats were present at the site. As these trees are due to be removed, further survey is required to determine the presence/likely absence of roosting bats as outlined below to comply with legislation. A ground level roost assessment should be carried out for all trees, to identify potential roosting features. Those with potential roosting features could be surveyed using a single climbed tree inspection. Climbed tree inspections can be carried out at any time of year. Any trees that cannot be scoped out through climbing would be subject to emergence/ re-entry survey. Two emergence/re-entry survey visits are required for any features with moderate roost potential and three for those with high roost potential. Emergence surveys must be carried out between May and August and spread evenly across this period (Collins, 2016). Should a bat roost be present a Natural England licence and mitigation strategy may be required.
- 4.8 The assemblage of bats using the site and foraging and commuting routes should be ascertained through night time activity (transect & static) surveys. The habitats on site are considered to be of moderate quality and therefore in accordance with best practice guidance (Collins, 2016), one bat activity survey visit per month during the bat activity season (April to October) is required to sufficiently assess the use of the site by bats.
- 4.9 Each survey visit would involve a walked transect for two hours at dusk or dawn and the deployment of two static bat detectors for a minimum of five nights in a fixed location on site. At least one survey visit should comprise a dusk and pre-dawn survey within a 24 hours period. For each bat pass the species should be identified and where possible the type of activity including behaviour and direction of flight will be recorded. The surveys would enable an evaluation of the conservation value of the assemblage of bats using the site to be completed and an assessment of any likely impacts from the project proposals and recommendations for avoidance and mitigation be produced.
- 4.10 It is also recommended that measures are implemented to avoid night-time lighting of features with potential for roosting bats, as well as areas that could provide important flight lines and foraging habitats for bats, such as the adjacent railway corridor. Further advice on the locations and appropriate methods for controlling light emissions should be sought when commissioning the bat surveys noted above.

Great crested newt

- 4.11 Great crested newts are protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended).
- 4.12 Great crested newt has been recorded within 2km of the site, and there is a pond located approximately 90m south of the site. The woodland, scrub and semi-improved grassland habitats within the proposed development area are suitable to support great crested newt during their terrestrial phase. There is a risk of an offence occurring through the removal of suitable habitat on site.
- 4.13 Further survey work should be carried out to determine the presence of great crested newt within the pond to the south of the site. A Habitat Suitability Index (HSI) assessment and an environmental DNA survey should be completed on this pond during mid April – end of June. However, it is recommended that this survey is carried out as soon as possible within the survey window, to allow for further population estimate surveys to be completed during the great crested newt survey season (mid March – mid June) if the eDNA test shows a positive result for great crested newt.
- 4.14 If great crested newts are confirmed to be present, a European Protected Species Mitigation (EPSM) licence may be required. The findings and mitigation measures required may impose timing and methodological restrictions on works, to ensure the works proceed lawfully.
- 4.15 There is an option to avoid further surveys by following the Woking District Licensing Scheme, whereby a payment is made to contribute to strategic enhancements in the borough (Woking Borough Council, 2016). As stated in the Improvement Plan for Great Crested Newts Westfield Common 2nd Year Review (ADAS, 2018), Natural England has issued Woking Borough Council a new organisational licence, now referred to as a District Level Licence (DLL), reference WML-OR21-2. Developers interested in taking part in the project are advised to email the green infrastructure team on green@woking.gov.uk¹⁴.

Widespread reptiles

- 4.16 Widespread reptiles are protected under the Wildlife and Countryside Act 1981 (as amended). The site contains suitable habitat to support widespread reptile species such

¹⁴ <https://www.woking.gov.uk/nature-and-sustainability/conservation-projects/great-crested-newts>

as slow-worm, common lizard and grass snake. Under the current proposals, habitat suitable for reptiles would be lost from the site.

- 4.17 Further surveys will be required to confirm presence/likely absence of widespread reptiles on site and provide an estimate of the population sizes of these species if present at the site. Survey work should be conducted in accordance with best practice guidelines (Froglife, 1999). Seven reptile surveys will need to be conducted in suitable weather conditions between April and mid-October, with April, May and September being the optimal months for survey (Gent and Gibson, 2003). This survey work will establish the requirements of mitigation to facilitate the proposed development.

Breeding birds

- 4.18 All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). The existing woodland, scattered trees and scrub vegetation on site have potential to support breeding birds.
- 4.19 Any tree and vegetation removal work should be carried out September to February inclusive, to avoid any potential offences relating to breeding birds during their main bird breeding season (Newton *et al.*, 2011).
- 4.20 If vegetation removal during the breeding season is unavoidable then potential nesting habitat must be inspected before work commences to identify active birds' nests. Should they be present, the nest and a suitable buffer of habitat around it must be retained until the young have left the nest.

Hedgehog

- 4.21 Scrub and the woodland habitats, timber piles and heaps of garden waste on site have potential to support hedgehog. Hedgehog are a SPI and are listed as a priority species for Woking Borough (Surrey Nature Partnership, 2018), making them a material consideration for planning. As such they should be protected as part of the development and habitats enhanced for this species.
- 4.22 Ground level vegetation clearance of the scrub, or removal of timber piles and heaps of garden waste should be undertaken outside of the hibernation period (November – March inclusively), during the hedgehog active season, and using hand tools.
- 4.23 Any fencing to be included within the proposed development has the potential to fragment areas of foraging and nesting habitat of value to hedgehogs. It is therefore

recommended that connectivity is maintained between the development and adjacent habitats by installing wildlife-friendly fencing between the proposed new dwellings, with gaps or tunnels in the bottom panels/gravel boards to allow easy passage for small mammals to continue foraging in this area. This can be achieved for example by cutting a hole (approximately 10cm x 10cm) in certain gravel boards, which is large enough for small mammals to pass through, but small enough to contain pets.

Fox and rabbit

- 4.24 Potential fox dens and rabbit burrows were identified on site. All wild mammals are protected against intentional acts of cruelty under the Wild Mammals (Protection) Act 1996. To avoid possible contravention, due care and attention should be taken when carrying out works with the potential to impact on the suspected fox den and rabbit burrows.
- 4.25 All active holes that will be impacted by the proposed development should be carefully dug out using hand tools, outside of the breeding season (March to July) and the area made inhospitable to encourage animals to relocate off site. Heavy plant machinery should not be tracked over the area where active holes are present until confirmed that any foxes and rabbits have moved off site.

Invasive species

- 4.26 Variegated yellow archangel and possibly three-cornered garlic were noted within the woodland on site. These species are listed as invasive under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and it is an offence to plant or otherwise cause the spread of this species in the wild. It is recommended that measures are undertaken with regards to these species, to ensure that there is no risk of spreading these species. Vegetation should be either burned or buried on site. These actions may require consents from the local authority or the Environment Agency respectively.

Other protected species

- 4.27 In the unlikely event that any other protected species are found during management works on site, the works must stop immediately and advice sought from a suitably qualified ecologist on how to proceed.

Environmental best practice

- 4.28 Appropriate storage of fuels and chemicals will minimise the risk of accidental spillage. Sources of best construction practice and environmental management include CIRIA

guidance (Connolly and Charles, 2005) and various Defra/ Environment Agency guidelines. This guidance relates to various pieces of legislation including the Environmental Damage (Prevention and Remediation) Regulations 2009.

4.29 Retained trees should be protected in accordance with British Standards Institution (2012) guidelines.

FURTHER SURVEY REQUIREMENTS

4.30 Table 4.1 lists further survey requirements as recommended in the constraints section.

Table 4.1: Further survey requirements

Species/Habitat	Survey Requirement	Number of surveys and seasonal considerations
Bats	To survey trees for bat roosting potential. A ground level roost assessment followed by climbed tree inspection and/or emergence/re-entry surveys as required.	A ground level roost assessment should be carried out for all trees on site, to identify potential roosting features. Those with potential roosting features could be surveyed using a single climbed tree inspection. Climbed tree inspections can be carried out at any time of year. For any trees that cannot be scoped out through climbing, two emergence/re-entry survey visits are required for any features with moderate roost potential and three for those with high roost potential. Emergence surveys must be carried out between May and August and spread evenly across this period (Collins, 2016).
	Activity transect surveys to establish use of site by foraging and commuting bats	As the site had moderate habitat quality, one activity transect should be carried out per month from April to October in appropriate weather conditions for bats (Collins, 2016). Static monitoring should also be conducted in two locations per transect, with data collected for five consecutive nights per month.
Great crested newt	Great crested newt HSI Assessment	An HSI survey of the pond to the south of the site should be undertaken at any time of the year, but the optimum period is spring/summer for robust results (Oldham <i>et. al.</i> , 2000).
	Environmental DNA survey	An eDNA survey can be carried out for planning, to confirm presence / absence. However, if presence is confirmed a great crested newt population survey may still be required for a licence application. Note: Surveys are not required if using the Woking District Licensing Scheme (as outlined above).

Table 4.1: Further survey requirements

Species/Habitat	Survey Requirement	Number of surveys and seasonal considerations
Reptiles	Reptile presence/likely absence survey	Seven survey visits should be carried out in suitable weather conditions, during the period when reptiles are active i.e. March to September (Froglife, 1999), using artificial refugia to survey for presence/likely absence of widespread reptiles on site.
Breeding birds	Nesting bird check	If vegetation clearance is carried out between September and the end of February, no survey is required. Otherwise, individual surveys are required up to 48 hours prior to vegetation clearance works (Newton <i>et al.</i> , 2011).
Mammals	Hand searching	Areas of dense vegetation and piles of timber debris etc due for removal should be hand searched to check for any hedgehog. Vegetation and debris clearance should be carried out outside of the hibernation season (November to March).

OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

4.31 Planning policy at the national and local level and strategic biodiversity partnerships encourage inclusion of ecological enhancements in development projects. Ecological enhancements can also contribute to green infrastructure and ecosystem services such as storm water attenuation and reducing the urban heat island effect. The following measures would be suitable for integration into the site’s design but may require a more detailed design to successfully implement.

Green roof/ biosolar

4.32 It is recommended that any flat roof buildings on site incorporate areas of biodiverse roof. To demonstrate the highest feasible and viable sustainability standards in line with London Plan Policies (GLA, 2016) it is recommended that a specification for a biodiverse roof be drawn up by a company with a proven track record in delivering these features in London. Any biodiverse green roof should support at least 25 plant species.

4.33 A biodiverse green roof would provide additional benefits such as protecting and prolonging the life of the roof membrane, reducing building energy use by insulating the building in winter and keeping it cooler in summer, providing a SuDS function by reducing storm water run-off from the roof, reducing the urban heat island effect and

local air/noise pollution. Combining a biodiverse roof with PV panels (biosolar roof) would also provide further benefits, such as the cooling effect the vegetation has on the PV cells, increasing their productivity in hot weather, as well as resulting in a more efficient use of roof space.

- 4.34 The green roof should follow UK standards (GRO, 2014) and include additional habitat features such as deadwood, varying substrate depths and areas of bare rocky substrate. This will provide good habitat for a range of invertebrates and birds.

Sustainable Drainage System (SuDS)

- 4.35 SuDS comprise a linked system of soft landscaping, green roofs, rain-water harvesting technologies including ponds, below ground drainage and porous surfacing which can be designed into a development to intercept and attenuate surface water and prevent flooding. Design of a SuDS would be appropriate to this development and should be considered as part of the site master plan. A SuDS would also increase biodiversity, for example by providing a series of habitats for wildlife to use, if appropriately planted – see below.

Wildlife planting

- 4.36 Wildlife planting should include native species and/or species of recognised wildlife value¹⁵. The use of nectar-rich and berry producing plants will attract a wider range of insects, birds and mammals and continue to accommodate those already recorded at the site.
- 4.37 Good horticultural practice should be utilised, including the use of peat-free composts, mulches and soil conditioners, native plants with local provenance and avoidance of the use of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
- 4.38 Any areas of amenity grassland should use a flowering lawn mixture such as Emorsgate EL1 Flowering Lawn Mixture¹⁶. These contain slow growing grasses with a selection of wild flowers that respond well to regular short mowing.

¹⁵ For example The Royal Horticultural Society (RHS) Perfect for Pollinators Scheme <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators> and the joint RHS/Wildlife Trust's Gardening With Wildlife In Mind Database <http://www.joyofplants.com/wildlife/home.php>

¹⁶ <https://wildseed.co.uk/mixtures/view/56/flowering-lawn-mixture>

Tree planting

- 4.39 Trees should be retained and protected wherever possible. The current proposals include the removal of existing trees from site. Each tree removed should be replaced on site with at least two comparable trees.

Provision of bird nesting and bat roosting opportunities

- 4.40 The provision of bird boxes would be appropriate at this site. Many different designs are available including boxes to support colonial species such as house sparrow and swifts. Woodcrete bird boxes are recommended as they are long lasting compared to wooden boxes, insulate occupants from extremes of temperature and condensation and are available in a broad range of designs
- 4.41 The provision of artificial bat roosting opportunities will be appropriate at this site. These roosting opportunities may include bat boxes located on any retained mature trees on site, particularly on the western boundary, adjacent to suitable foraging and commuting habitats for bats. Bat boxes can also be within the design of the proposed new buildings and dwellings on site. Bat boxes should be positioned between 3-5m above ground level facing south-east to south-west in a location that will not be lit by artificial lighting. When incorporating more than one box, they should be placed apart from one another, ideally on different building facades. Models from Schwegler such as 1FF Flat Bat Box are appropriate for use on retained trees, suitable for the species potentially utilising the site, and do not require any cleaning. Integrated bat features such as Schwegler Bat Tube 1FR should be included within the designs of the new buildings, and are maintenance free. More information regarding the bat boxes are available through the Schwegler website¹⁷.

Dead wood habitats

- 4.42 It is recommended that deadwood habitats are retained on site, where possible, providing habitat for stag beetle and other invertebrates and fungi. New log piles using untreated timber can be created within any public landscaped areas of the site (such as around the proposed car parking area) to enhance the site for invertebrates.

¹⁷ www.schwegler-natur.de

References

AECOM (2018). Woking Borough Council Site Allocations DPD – Habitats Regulations Assessment. <http://www.woking2027.info/ldfresearch/hra/hrareport> [accessed 20 February 2019].

Bat Conservation Trust (2018). *Bats and artificial lighting in the UK: Bats and the Built Environment Series*. Guidance note 08/18.

Biodiversity Reporting and Information Group (2008) *UK Biodiversity Action Plan Priority Habitat Descriptions*. JNCC. Peterborough.

Bright, P. Morris, P. & Mitchell-Jones, T (2006). The Dormouse Conservation Handbook. Second edition. <https://ptes.org/wp-content/uploads/2014/06/Dormouse-Conservation-Handbook.pdf> [accessed 01/03/2019].

British Standards Institution (BSI) (2012) BS 5837:2012- *Trees in relation to design, demolition and construction*. BSI, London.

CIEEM (2017) Guidelines for Preliminary Ecological Appraisal Second Edition. December 2017. https://www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf [accessed 20 February 2019].

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 edition. The Bat Conservation Trust, London.

Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746. <http://britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf> [accessed 20 February 2019].

Froglife (1999). *Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. *Froglife Advice Sheet 10*. Froglife, Halesworth.

Gent, T. and Gibson, S. (2003) *Herpetofauna Workers Manual*. JNCC, Peterborough.

Guildford Borough Council (2017). Thames Basin Heaths Special Protection Area Avoidance Strategy 2017. Supplementary Planning Document. https://www.guildford.gov.uk/media/24946/Thames-Basin-Heaths-SPA-Avoidance-Strategy-SPD-2017/pdf/Thames_Basin_Heaths_SPA_Avoidance_Strategy_SPD_2017.pdf [accessed 20 February 2019].

JNCC (2010) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council. Reprinted by Joint Nature Conservation Committee, Peterborough.

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Leach Rhodes Walker Architects (2018). Kingfield Road Woking F.C.: Residential and new stadium design proposal. 7884_L(00)109A

Maddock (2008). UK Biodiversity Action Plan Priority Habitat Descriptions: Lowland Mixed Deciduous Woodland. http://jncc.defra.gov.uk/pdf/UKBAP_BAPHabitats-30-LowlandMixedDecWood.pdf [accessed 20 February 2019].

MAGIC (2018) *Multi-Agency Geographic Information for the Countryside*. <http://www.magic.gov.uk/> [accessed 20 February 2019].

Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework. Ministry of Housing, Communities and Local Government, London. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

Natural England (2013) *GIS Digital Boundary Datasets – Priority Habitat Inventory*. http://www.gis.naturalengland.org.uk/pubs/gis/GIS_register.asp [accessed 20 February 2019].

Roper, T.J. (2010) *Badger*. Harper Collins, London.

RSK ADAS Ltd (2016). Improvement Plan for Great Crested Newts Westfield Common. <https://www.woking.gov.uk/sites/default/files/documents/Nature/nestednewts.pdf> [accessed 27/02/2019].

Schwegler (2011). Bird and Nature Conservation Products. No.68. <http://www.schwegler-natur.de/index.php?main=home&sub=katalog-downloaden> [accessed 20 February 2019].

Stace, C.A. (2010) *New Flora of the British Isles* (3rd Ed.). Cambridge University Press, Cambridge.

Surrey Nature Partnership (2018). Biodiversity & Planning in Surrey – Version 3 (November 2018). Including Appendix 2 for HPIs and SPIs for Woking Borough. <https://surreynaturepartnership.org.uk/our-work/> [accessed 27/02/2019].

The Ecology Consultancy (2019). Egley Road, Woking. Arboricultural Survey. Report for Trium Environmental Consulting LLP.

Thomson Ecology (2015a). Egley Road, Woking: Preliminary Ecological Appraisal for Willmott Dixon Construction Ltd. https://caps.woking.gov.uk/online-applications/files/14BC4E3B78CA39935087355C5BE943AD/pdf/PLAN_2015_0703-ES_APP_11.1_ECOLOGY-336247.pdf [accessed 20 February 2019].

Thomson Ecology (2015b). Egley Road, Woking: Badger, Bat and Reptile Surveys for Willmott Dixon Construction Ltd. https://caps.woking.gov.uk/online-applications/files/2F45D1D6F48E5B7CC1587F9E8E9745FF/pdf/PLAN_2015_0703-ES_APP_11.2_BADGER_BAT_REPTILE_SURVEY-336252.pdf [accessed 20 February 2019].

Thomson Ecology (2015c). Egley Road: Dormouse Survey. ES Addendum_ Appendix A11.3. [accessed online 20 February 2019, within planning documents for PLAN/2015/0703].

Thomson Ecology (2015d). Egley Road, Woking: Bat Emergence, Return to Roost and Activity Surveys. ES Addendum_ Appendix A11.2. [accessed online 20 February 2019, within planning documents for PLAN/2015/0703].

Thomson Ecology (2015e). Egley Road, Woking: Grayling butterfly survey. ES Addendum_ Appendix A11.4. [accessed online 20 February 2019, within planning documents for PLAN/2015/0703].

ADAS (2018). Improvement Plan for Great Crested Newts Westfield Common : 2nd Year Review.
https://www.woking.gov.uk/sites/default/files/documents/Nature/Improvement%20Plan%20for%20Great%20Crested%20Newts%20-%202nd%20year%20review_Dec%2018.pdf
[accessed 14 March 2019].

Woking Borough Council (2016). Natural Woking Biodiversity and Green Infrastructure Strategy – Supporting Information. Appendix 10 Great Crested Newt
<https://woking.gov.uk/sites/default/files/documents/Nature/nwsuppinfo.pdf> [accessed 14 March 2019].

Woking 2027 (2012) Planning the future of our Borough. Woking Local Development Document: Woking Core Strategy – October 2012.
<http://www.woking2027.info/developmentplan/corestrategy/adoptedcorestrategy.pdf>
[accessed 20 February 2019].

Appendix 1: Habitat Map

Appendix 2: Target Notes

Figure 1: Habitat Survey Map



Target Notes List for Egley Road, Woking from the Phase 1 habitat survey and protected and notable species assessment carried out on the 19 February 2019.

Target note (TN)	Description
1	Earth bund with several rabbit burrows, over grown with common nettle, bracken and bramble scrub. One larger hole on the west facing bank with barbed wire across the entrance, contained a mixture of hairs, including probable fox hairs, though the hole narrowed further in and is not considered likely to support badger.
2	Stack of timber boarding and leaf litter.
3	Area of possible three-cornered garlic (Schedule 9 species)
4	Semi-mature oak with horizontal split in branch, with low potential for roosting bats.
5	Area of variegated yellow archangel (Schedule 9 species)
6	Semi-mature London plane tree with woodpecker holes, with low potential for roosting bats.

Appendix 3: Photographs

Photograph 1

View of semi-improved grassland at west of site, as viewed from the north, looking south-west.



Photograph 2

Stack of timber panels which could provide potential refuge areas for common reptile species (TN2).



Photograph 3

Representative view of the deciduous plantation woodland at the south-east of the site.



Photograph 4

View of area of dense sycamore saplings towards south of the area of plantation woodland.



Photograph 5

View of amenity grassland area adjacent to eastern boundary of site.



Photograph 6

View of existing building on site.



Photograph 7

View of mature oak tree to the north of the site.



Photograph 8

Tree with split in branch with potential to support roosting bats (TN4).



Photograph 9

Mammal burrow within soil bank at north-west of woodland (TN1), not characteristic of badger.



Photograph 10

Variiegated yellow archangel within woodland on site, towards the south of the site (TN5).



Appendix 4: Plant Species List

Plant Species List for Egley Road, Woking compiled from Phase 1 habitat survey carried out on the 19 February 2019.

Scientific nomenclature and common names for vascular plants follow Stace (2010). Please note that this plant species list was generated as part of a Phase 1 habitat survey and does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

Abundance was estimated using the DAFOR scale and additional notes taken as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally
c=clumped, e=edge only, g=garden origin, p=planted, y = young, s=seedling or sucker,
t=tree, h=hedgerow, w=water

SCIENTIFIC NAME	COMMON NAME	ABUNDANCE	QUALIFIER
<i>Acer pseudoplatanus</i>	Sycamore	LA	t, s
<i>Agrostis sp.</i>	Bent species	A	
<i>Allium triquetrum</i>	Three-cornered garlic	LF	
<i>Aphanes arvensis</i>	Parsley-piert	R	
<i>Arctium minus</i>	Lesser burdock	R	
<i>Arum maculatum</i>	Lords-and-ladies	R	
<i>Betula pendula</i>	Silver birch	O	
<i>Cirsium arvense</i>	Creeping thistle	F	
<i>Cirsium vulgare</i>	Spear thistle	O	
<i>Corylus avellane</i>	Hazel	O	
<i>Crataegus monogyna</i>	Hawthorn	O	
<i>Euphorbia sp.</i>	Spurge species	R	
<i>Fagus sylvatica</i>	Beech	O	t
<i>Festuca sp.</i>	Fescue species	F	
<i>Fraxinus excelsior</i>	Ash	R	t
<i>Galanthus nivalis</i>	Snowdrop	O	e
<i>Galium aparine</i>	Cleavers	R	
<i>Geranium dissectum</i>	Cut-leaved crane's-bill	R	
<i>Glechoma hederacea</i>	Ground-ivy	O	
<i>Hedera helix</i>	Ivy	O	
<i>Helminthotheca echinoides</i>	Bristly oxtongue	R	
<i>Holcus lanatus</i>	Yorkshire-fog	O	
<i>Humulus lupulus</i>	Hop	R	
<i>Ilex aquifolium</i>	Holly	O	
<i>Juncus effusus</i>	Soft rush	R	
<i>Juncus inflexus</i>	Hard rush	R	
<i>Lamium galeobdolon subsp. Argentatum</i>	Variegated yellow archangel	LF	
<i>Lamium purpureum</i>	Red dead-nettle	R	
<i>Ligustrum ovalifolium</i>	Garden privet	R	e
<i>Lolium perenne</i>	Perennial rye-grass	F	
<i>Narcissus sp.</i>	Daffodil	R	
<i>Pinus sp.</i>	Pine species	R	t
<i>Plantago lanceolata</i>	Ribwort plantain	R	
<i>Platanus x hispanica</i>	London plane	R	t
<i>Populus sp.</i>	Poplar species	R	t
<i>Pteridium aquilinum</i>	Bracken	LF	
<i>Quercus cerris</i>	Turkey oak	O	
<i>Quercus robur</i>	Pedunculate oak	F	
<i>Robinia pseudoacacia</i>	False-acacia	R	t
<i>Rosa sp.</i>	Rose species	R	

<i>Rubus fruticosus agg</i>	Bramble	F	e
<i>Rumex acetosella</i>	Sheep's sorrel	LF	
<i>Rumex sp.</i>	Dock species	R	
<i>Sambucus nigra</i>	Elder	O	
<i>Senecio jacobaea</i>	Common ragwort	R	
<i>Sonchus oleraceus</i>	Smooth sow-thistle	R	
<i>Symphoricarpos sp.</i>	Snowberry	O	
<i>Taxus baccata</i>	Yew	R	t
<i>Tilia cordata</i>	Small leaved lime	R	t
<i>Trifolium repens</i>	White clover	O	
<i>Urtica dioica</i>	Common nettle	R	
<i>Vicia sp.</i>	Vetch species	R	
<i>Vinca major</i>	Greater periwinkle	R	

Appendix 5: Legislation

Important notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive¹⁸ is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (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) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

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

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds,

¹⁸ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2017 (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below.

These should be read in conjunction with the relevant species sections that follow.

- In the Directive, the term ‘deliberate’ is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2017 does not define the act of ‘migration’ and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three ‘tests’: i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Bats

All species of bat 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 Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young;
 - (ii) to hibernate or migrate³
 - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected 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
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. 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 those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded de facto protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost¹⁹.

Badger

Badgers receive protection under The Protection of Badgers Act 1992 which consolidates the previous Badger Acts of 1973 and 1991. The Act makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger;
- Cruelly ill-treat a badger, including use of tongs and digging;
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof;
- Intentionally or recklessly disturb a badger when it is occupying a badger sett; or,
- Intentionally or recklessly cause a dog to enter a badger sett.

How is the legislation pertaining to badgers liable to affect development works?

¹⁹ Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. 150. The Mammal Society, Southampton.

A badger sett is defined in the legislation as “any structure or place which displays signs indicating current use by a badger”. A Development Licence would be required from Natural England for any development works liable to directly impact an active badger sett, or to disturb badgers whilst in the sett. Natural England has issued guidelines on what constitutes a licensable activity.

Natural England published an interim guidance document entitled ‘Badgers and Development, A Guide to Best Practice and Licensing’ (2007), which provides guidance on how development can be carried out within the law and in a way that minimises the detrimental impact on this species. Natural England advises that foraging areas should be maintained or new foraging areas created and that access between setts and foraging/watering areas should be maintained or new ones provided (Natural England, 2007).

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it 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;
- Intentionally take or destroy an egg of any wild bird;
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher 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.

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying

their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird breeding season which typically runs from March to August²⁰. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young;
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
 - b) 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
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

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:

²⁰ It should be noted that this is the main breeding period. Breeding activity may occur outwith 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.

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- 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). Species such as the adder *Vipera berus*, grass snake *Natrix Helvetica*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

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

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

How is the legislation pertaining to herpetofauna liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Invasive Plant Species

Certain species of plant, including Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera* are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Such species are generally 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.

How is the legislation pertaining to invasive plants liable to affect development works?

Although it is not an offence to have these plants on your land per se, it is an offence to cause these species to grow in the wild. Therefore, if they are present on site and development activities (for example movement of spoil, disposal of cut waste or vehicular movements) 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 happening prior to the commencement of works.

Wild Mammals (Protection) Act 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it 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, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSIs) under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nm are protected under The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. 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. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which

have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Sites and Access to the Countryside Act 1949 **Local Nature Reserves** (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a **Wildlife Site**, under a variety of names such as **County Wildlife Sites** (CWS), **Listed Wildlife Sites** (LWS), **Local Nature Conservation Sites** (LNCS), **Sites of Biological Importance** (SBIs), **Sites of Importance for Nature Conservation** (SINCs), or **Sites of Nature Conservation Importance** (SNCIs). The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

C NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) in April 2012, and was updated in 2019, as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration

and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the ‘biodiversity duty’.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of ‘principal importance for the conservation of biodiversity.’ They are referred to in this report as Species of Principal Importance and Habitats or Principal Importance. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

D LOCAL PLANNING POLICY

Woking Borough Core Strategy

The Woking Borough Core Strategy (2012) deals with matters of strategic importance for the Woking area. Key chapters include Chapter 5 – *Borough wide policies*.

Policy CS7: Biodiversity and Nature Conservation

The Council is committed to conserving and protecting existing biodiversity assets within the Borough. It will require development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate. This will include those habitats and species listed in the Surrey Biodiversity Action Plan (BAP). Any development that will be anticipated to have a potentially harmful effect or lead to a loss of features of interest for biodiversity will be refused.

The Council will encourage new development to make positive contribution to biodiversity through the creation of green spaces, where appropriate, and the creation of linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

Any development with potential impact on the SPA or the SAC will be subject to a Habitats Regulations Assessment to determine the need for Appropriate Assessment.

Policy CS17: Open space, green infrastructure, sport and recreation

All proposals for new residential development (other than replacement dwellings) will be required to contribute towards the provision of open space and green infrastructure, including the following:

- children's play areas and outdoor recreational facilities for young people.
- outdoor sports facilities.

Developers will be expected to contribute to provision through the Community Infrastructure Levy (CIL) or on larger sites through on-site provision and/or a S106 contribution as appropriate. Development involving the loss of open space will not be permitted unless:

- alternative and equivalent or better provision is made available in the vicinity
- or the development is directly related to the enhancement of the open space.

New residential units within five km of an SPA will be required to provide or contribute to the provision and improvement of Suitable Alternative Natural Greenspace (SANG) which is a component of Green Infrastructure and also its Strategic Access Management and Monitoring (SAMM). This land will be used to mitigate the impact and effect of residential development on the SPA, by providing informal recreation land of appropriate quality across Woking Borough. Standards for the provision of SANG are set out in the Council's Thames Basin Heaths SPA Avoidance Strategy 2010-15.

Policy CS22: Sustainable Construction

New residential development on greenfield sites will be required to meet the Code for Sustainable Homes level 5 (or any future national requirement) from now because of the relatively lower cost of developing such sites.

The Council will consider a case based on evidence of viability if an applicant can demonstrate that the requirement for code level 5 cannot be met. This will be considered on

a case by case basis. New non-residential development of 1,000 sq.m or more (gross) floorspace is required to comply with BREEAM very good standards (or any future national equivalent).

All development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code.

Policy CS24- Woking's landscape and townscape

All development proposals will provide a positive benefit in terms of landscape and townscape character, and local distinctiveness and will have regard to landscape character areas. To protect local landscape and townscape character, development will be expected to:

- conserve, and where possible enhance existing character, especially key landscapes such as heathlands, escarpments and the canal/river network and settlement characteristics; maintain locally valued features, and enhance or restore deteriorating features
- respect the setting of, and relationship between, settlements and individual buildings in the landscape
- conserve, and where possible, enhance townscape character, including structure and land form, landscape features, views and landmarks, and appropriate building styles and materials
- support land management practices that have no adverse impact on characteristic landscape patterns and local biodiversity.
- Protect and encourage the planting of new trees where it is relevant to do so.

E REGIONAL AND LOCAL BAPS

A number of priority habitats and species have been identified in the Biodiversity & Planning in Surrey document (Surrey Nature Partnership, 2018). Priority habitats and species within Surrey, and within Woking Borough that are of relevance to this report include:

- Habitats:
 - Lowland dry acid grassland.
- Species:
 - bats;
 - reptiles – Common lizard, grass snake, slow-worm;

- great crested newt and common toad;
- badger;
- birds of farmland and the wider countryside – including song thrush and starling;
- invertebrates including stag beetle; and
- hedgehog.



Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 W. www.ecologyconsultancy.co.uk E. enquiries@ecologyconsultancy.co.uk

■ **Sussex** - 3 Upper Stalls, Iford, Lewes, East Sussex BN7 3EJ T. 01273 813739
■ **East Anglia** - 60 Thorpe Road, Norwich, Norfolk NR1 1RY T. 01603 628408
■ **Midlands** - 1-2 Trent Park, Eastern Avenue, Lichfield, Staffordshire WS13 6RN T. 01543 229049
■ **North** - Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR T. 01924 683558

Annex 3: Ground Level Roost Assessment (Bats) Report

Egley Road, Woking

Ground Level Tree Assessment

Report for Woking Football Club

Job Number	7758.3		
Author	Gemma Watkinson MBiolSci (Hons) ACIEEM		
Version	Checked by	Approved by	Date
1.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM	Wendy McFarlane MA MSc MCIEEM	19/09/2019
2.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		13/11/2019
3.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		20/11/2019



Contents

Summary of key issues	1
1 Introduction	2
2 Methodology	4
3 Results	7
4 Conclusions and Recommendations	13
References	16
Appendix 1: Ground Level Tree Inspection Map	17
Appendix 2: Photographs	19
Appendix 3: Legislation and Planning Policy	25

LIABILITY

The Ecology Consultancy has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of The Ecology Consultancy. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by The Ecology Consultancy, unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of The Ecology Consultancy. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy, part of the Temple Group, is the trading name of Ecology Consultancy Ltd.

Summary of key issues

The Ecology Consultancy was commissioned to carry out a ground level tree assessment of an area of land at Egley Road, Woking, which included an area of broadleaved plantation woodland. The main findings of the survey are as follows:

- Three trees on site were assessed as providing high potential, eight trees were assessed as providing moderate potential and 19 trees were assessed as providing low potential to support roosting bats. All other trees on site were assessed as having negligible potential to support roosting bats.
- The proposals for the site indicate that the majority of trees and much of the broadleaved plantation woodland area will be retained on site. Within the northern portion of the woodland that will be removed to facilitate the development of the site, there are three trees with low potential to support roosting bats that may be impacted. These trees should be soft-felled under the supervision of an ecologist; between either mid-March-April or September-October.
- If the plans should alter and any of the trees identified with moderate or high potential to support roosting bats will be impacted during the proposed development works, further survey will be required to confirm the presence/likely absence of a bat roost in each of these trees and inform any licensing and mitigation if required. In accordance with current good practice guidelines, trees with moderate potential will require one dusk emergence and one dawn re-entry survey, and trees with high potential will require three surveys, with at least one being a dawn re-entry survey.
- All retained trees should be protected during the works, in accordance with the Arboricultural Impact Assessment report.

1 Introduction

BACKGROUND TO COMMISSION

1.1 A Preliminary Ecological Appraisal (PEA) carried out in February 2019 of land at Egley Road, Woking, in Surrey (hereon referred to as 'the site') indicated that trees on site had potential to support roosting bats (The Ecology Consultancy, 2019a). Following the conclusions of the PEA, The Ecology Consultancy was subsequently commissioned by Woking Football Club to carry out a ground level tree assessment of all trees within the site.

SCOPE OF THE REPORT

1.2 This report outlines the methodologies and results of the Ground Level Tree Assessment conducted on 29 April 2019. This will be used to identify any potential ecological constraints associated with the proposed development and/or to identify the need for additional survey work to further evaluate any impact that may risk contravention of legislation or policy relating to protected species and nature conservation.

1.3 This report has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM) and as detailed in British Standard 42020:2013 Biodiversity - Code of Practice for Biodiversity and Development (BSI, 2013).

1.4 The methodology of the assessment was in accordance with the Bat Conservation Trust – *Bat Surveys: Good Practice Guidelines 3rd Edition* (Collins, 2016).

1.5 A map of results for the ground level tree assessment is provided in Appendix 1. Photographs are provided in Appendix 2. The relevant legislation and policies relating to nature conservation are set out in Appendix 3.

1.6 The survey, assessment and report were conducted by Gemma Watkinson MBiolSci ACIEEM, an ecologist with over four years' experience who is competent in carrying ground level tree assessment for their suitability for bats.

SITE CONTEXT AND STATUS

1.7 The site currently comprises open field, with one building located in the north-east of the site. There is a large area of trees in the southern portion of the site and access to the site is via a small road off of Egley Road (A320), located to the east of the site. The proposed development site is approximately 4.1 hectares (ha) in size and is centred on Ordnance Survey National Grid reference SU 99416 56408. The site lies off Egley Road, on the outskirts of Woking, in Surrey. The site is not subject to any statutory or non-statutory nature conservation designations. The site is bordered by a school and sports facility to the north, a railway line to the west, a garden centre and business properties to the east, and residential dwellings and gardens to the south. The wider landscape comprises grassland fields with hedgerows and woodland to the west, further residential dwellings, and Mayford Meadows Local Nature Reserve to the east of Egley Road, and further residential properties and a school to the south, and grassland and scattered trees in the wider landscape to the south.

DEVELOPMENT PROPOSALS

1.8 The development proposals for the site, based on current plans provided by the client (Leach Rhodes Walker Architects, 2019) are for the redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road serving Hoe Valley School. The majority of the existing woodland will be retained on site, but several of the trees on the edge of the woodland will be removed to facilitate development.

RELEVANT LEGISLATION AND PLANNING POLICY

1.9 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 3:

- The Conservation of Habitats and Species Regulations 2017 (as amended) (commonly referred to as the Habitats Regulations); and
- Wildlife and Countryside Act 1981 (as amended).

1.10 National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) requires local authorities to avoid and minimise impacts on biodiversity and should provide net gains in biodiversity when taking planning decisions.

1.11 Other planning policies at the local level which are of relevance to this development include the adopted Woking Borough Core Strategy (2012). Further information is provided in Appendix 3.

2 Methodology

GROUND LEVEL TREE ASSESSMENT

2.1 The ground level tree assessment was carried out using close focusing binoculars and a high-powered torch. The surveyor inspected all trees that were within the site boundary, to identify features (such as knot and rot holes, frost cracks, hazard beams, fissures in deadwood, lifted bark and callous rolls) with potential to support roosting bats. Where features were observed, evidence of roosting bats, including droppings, feeding remains such as moth wings, scratch marks around suitable crevices and urine and fur oil stains, was searched for.

2.2 The objectives of the ground based assessment were to:

- identify any arboreal features suitable to support roosting bats;
- assess the potential importance of the trees to provide roosting locations for bats; and
- determine potential impacts that the proposed tree works may have on bats or their roosts.

Assessment Criteria

2.3 All surveyed trees that may have a level of potential for a roost were assessed using the Cowan Scale (Cowan, 2006). The following values were assigned in considering the availability of suitable features for roosting bats:

- **0 – no value** – No visible features that could be used by bats for roosting
- **1 – low value** – One or two minor features, possibly associated with feeding or night-time roosts, such as:
 - sparse ivy *Hedera helix*;
 - minor branch splits or fissures;
 - small areas of loose bark;
 - features less than ten years old.

- **2 – moderate value** – Features that may provide a more secure site for individuals or small groups of bats, such as:
 - dense ivy;
 - significant branch splits;
 - small cavities such as woodpecker holes;
 - features present for between 10 and 30 years.
- **3 – high value** – Features of particular significance, suitable for high priority roost such as maternity roosts and likely to be used by larger groups of bats, such as:
 - features that provide rare or uncommon conditions in the local area;
 - large cavities or extensive branch or trunk splits;
 - multiple features in the same tree;
 - features present for more than 30 years that could have been used by several generations of bats.
- **4 – confirmed roost** – Evidence indicating use by bats, such as:
 - droppings, carcasses, feeding remains;
 - bats heard ‘chattering’ inside on a warm day or at dusk; and
 - bats seen roosting or observed flying from a feature.

2.4 A standard recording form was completed for each tree that was likely to be impacted by the proposed development. This included recording the details listed above as well as the species, relative age and girth of the tree and a photograph of each tree or tree group. Trees with no value were not recorded.

CLIMBED TREE INSPECTIONS

2.5 Following the ground-level tree assessment, all trees with moderate or high value to support roosting bats were subject to a climbed endoscopic inspection, to better determine the potential for these trees to support roosting bats and determine if further survey work is required. Due to the low elevation of the potential roosting features in some of the trees on site, an endoscope inspection could be completed from the ground for some of the trees. The climbed tree inspection was completed on 9 July 2019.

DATA VALIDITY AND LIMITATIONS

- 2.6 Whilst every effort has been made to provide a true assessment of the habitats on and surrounding the site, no investigation can ensure the complete characterisation and prediction of the natural environment.
- 2.7 All trees on site likely to be impacted by the development proposals were subject to a ground level tree assessment. This comprised 15 individual trees and 1 area of woodland. Trees identified as having moderate or high potential to support roosting bats within the woodland were also subject to a climbed tree inspection. However, not all trees assessed as containing features with potential to support roosting bats could be climbed for inspection, as they were considered to be unsafe to climb. Those trees that could not be climbed and inspected will be retained within the proposed development. In this way, the impacts of the development on roosting bats have been appropriately investigated, and therefore the limitation is not considered to be significant.
- 2.8 Accordingly, it is considered that this report accurately reflects the potential for roosting bats within the trees surveyed.

3 Results

Ground Level Tree Assessment

- 3.1 All trees on the site were surveyed. Three trees were assessed as having potential roosting features (PRFs) with high potential to be used by bats, eight trees were assessed as having PRFs with moderate potential and 19 trees as having PRFs with low potential for roosting bats.
- 3.2 The remaining trees on site were considered to have negligible potential to support roosting bats, but would provide commuting and foraging habitats for bats. These factors increase the likelihood of bats finding and utilising suitable roosting features within the survey area.
- 3.3 A full description of each tree assessed as providing low, moderate or high potential for roosting bats are provided in Table 3.1 as follows, in accordance with the numbered site plan provided in Appendix 1.

Table 3.1: Ground Level Tree Assessment and Climbed Inspection Assessment

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
T1/ Oak	Small hole in underside of branch at south of tree, approximately 8m high.	Low
T2/ Oak	Lower branch approximately 2m high on the north-eastern side, with small holes, but these were filled with cobwebs.	Low
T3/ Oak	A small knot hole approximately 3m high on the northern side of the tree.	Low
T4/ Oak	Small pieces of flaking bark on the southern aspect, approximately 5m high.	Low

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
T5/ Conifer	Woodpecker holes located on trunk of the tree, on a stem that looks to have been cut at the top (Appendix 2, Photograph 1). Branches above and below the woodpecker holes create a very cluttered drop zone.	Low
T6/ Oak	Ivy on all aspects and at all heights, but not particularly thick stems or densely covering the trunk (Appendix 2, Photograph 2). Potential roosting features may be obscured.	Low
T7/ Conifer	Woodpecker hole approximately 5m high on northern aspect, but with cluttered drop zone from branches beneath.	Low
T8/ Unknown	Woodpecker hole approximately 3m in height, on northern aspect, potentially leading to a cavity. Woodpecker hole approximately 3m in height, on southern aspect, potentially leading to a cavity. Sparse Ivy from 2-10m in height on all aspects may provide potential roosting features and obscure other suitable features (Appendix 2, Photograph 3).	Moderate
T9/ Oak	Ivy cover at 2-10m high on all aspects, not thick stems but may obscure suitable features.	Low
T10/ Oak	Ivy cover at 2-10m high on all aspects, may obscure suitable features.	Low
T11/ Poplar	One woodpecker hole at approximately 8m height on eastern aspect. Shallow in depth, only approximately 2 inches into the tree. No droppings seen (Appendix 2, Photograph 4). One woodpecker hole at approximately 9m in height on southern aspect. Shallow in depth, only approximately 2 inches into the tree. No droppings seen.	Low

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
	One woodpecker hole on the eastern aspect at 4m in height, not fully complete, so not leading to a cavity.	
T12/ Poplar	<p>One woodpecker hole on northern-most trunk of a twin-stem tree, at approximately 7m in height, on the eastern aspect (Appendix 2, Photograph 5). Shallow in depth, didn't go very far into the tree. No droppings seen.</p> <p>Three holes on northern-most trunk of twin-stem tree, at approximately 10m in height, on the north-western aspect. All shallow in depth, didn't go very far into the tree. No droppings seen.</p> <p>One woodpecker hole on southern-most trunk of twin stem tree at approximately 7m in height on the southern aspect. Hole only goes in a approximately 5cm, interior likely to be exposed to wind and cold.</p>	Low
T13/ Unknown	Large cavity within deadwood stump, hollow inside the trunk. Cavity has an abundance of cobwebs and is also exposed at top so water will likely get into cavity and make it damp.	Low
T14/ Oak	Oak with ivy on all aspects and at all heights, some ivy stems more than 5cm in diameter, may provide potential roosting features for individual bats, and additional features may be obscured.	Low
T15/ Unknown	Tree with ivy on all aspects and at all heights, some ivy stems more than 5cm in diameter, may provide potential roosting features for individual bats, and additional features may be obscured.	Low
T16/ Silver birch	Tree with ivy on all aspects and at all heights, some ivy stems more than 5cm in diameter, may provide potential roosting features for individual bats, and additional features may be obscured.	Low

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
T17 / Unknown	Dead tree with split in stem, 0.5-2m in height, on the south-eastern aspect, could be used occasionally, but exposed. No droppings noted.	Low
T18 / Lime	<p>Total of six woodpecker holes on the dead stem of a multi-stem lime tree, which sounded hollow when knocked, and likely to be open at the top, but unsafe to fully inspect by climbing (Appendix 2, Photograph 6).</p> <p>Woodpecker holes in the following locations:</p> <p>One hole at 3m in height on eastern aspect, extended approximately 15cm into the trunk of the tree, no evidence of bats noted.</p> <p>One hole at 4.5m in height on the eastern aspect, extends only a couple of inches into the trunk, no evidence of bats noted.</p> <p>Two holes at 7m in height on the eastern aspect.</p> <p>One at 7m in height on northern aspect.</p> <p>One at 8m in height on western aspect</p>	Moderate
T19 / Unknown	Tree with ivy on all aspects and at all heights, some stems more than 5cm in diameter, may provide potential roosting features for individual bats, and additional features may be obscured.	Low
T20/ Oak	Tree with ivy on all aspects and at all heights, some stems more than 5cm in diameter, may provide potential roosting features for individual bats, and additional features may be obscured.	Low
T21/ Oak	Hazard beam, split in lower branch running north to south, goes all the way across the branch so quite exposed. Approximately 3m in height.	Low
T22 / Lime	Multi-stem lime with callous roll with cavity extending up trunk, approximately 1m in height on the southern	High

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
	aspect (Appendix 2, Photograph 7). Extends upwards approximately 15cm, abundant cobwebs and slugs within cavity.	
T23 / Lime	Multi-stem lime with several small callous rolls on western aspect, at approximately 1m in height. The callous rolls generally had an abundance of cobwebs, and were wet with woodlice within the cavities. However one callous roll on the western aspect extends up the trunk and is dry, and has suitability to support roosting bats.	Moderate
T24 / Lime	Multi-stem lime with several small callous rolls at approximately 1m in height on northern aspect. Some decay noted, and woodlice present within the holes, holes extend up the trunk.	Moderate
T25 / Lime	Multi-stem lime with several small callous rolls on southern and northern aspects at approximately 1m in height. There was an abundance of cobwebs and woodlice within the holes.	Moderate
T26 / Lime	Multi-stem lime with several small callous rolls at approximately 1m in height, the holes extend up the trunk but not very far. An abundance of cobwebs and woodlice with lots of decay.	Moderate
T27 / Lime	Multi-stem lime with several small callous rolls on the northern western and southern aspects at approximately 1m in height. Three callous rolls on the northern aspect extend up 3-4 inches and are sheltered, but an abundance of cobwebs and woodlice. Callous rolls on the western aspect extend upwards approximately 4cm, and are wet with slugs and woodlice in the cavity.	Moderate

Tree Number / Group & Species	Condition and Notes	Bat Roosting Potential
T28 / Lime	Multi-stem lime with callous roll with cavity extending up trunk approximately five inches, which is quite sheltered. Woodlice present.	High
T29 / Poplar	Woodpecker hole approximately 5m in height on southern aspect. The hole is approximately 3cm deep, but doesn't extend up or down the trunk. Bird droppings noted at entrance and below the hole (Appendix 2, Photograph 8).	Moderate
T30 / False acacia	Previously pollarded tree, with knot hole at approximately 2m in height on north-western aspect. Hole extends into a chamber approximately the width of the whole pollarded head of the tree (Appendix 2, Photograph 9). There is no opening at the top and the chamber is sheltered and dry.	High

4 Conclusions and Recommendations

CONCLUSIONS

- 4.1 Following the ground level tree assessment, habitat suitable for roosting bats has been identified. As such, precautionary measures will be required on trees that are due to be affected by the proposals.

RECOMMENDATIONS

Bats

- 4.2 All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation, it is an offence to deliberately capture, injure, kill, or disturb a bat, or damage or destroy a bat roost. Some species of bat are also Species of Principal Importance.
- 4.3 The ground level tree assessment identified three trees with high potential and eight trees with moderate potential to support roosting bats. There were 19 trees on site identified with low potential or due to the presence of ivy covering which may obscure potential roosting features, are given a precautionary assessment of low. The following recommendations are provided for each level of potential identified.
- 4.4 **High potential trees:** the proposed development should not impact on any of the trees identified with high potential to support roosting bats. However, should the plans change and any works or disturbances be scheduled in the future on T22, T28 and T30, these trees will require further survey to establish the presence/likely absence of bats, prior to the commencement of works on the site. It would be necessary to carry out three emergence/re-entry surveys, between May and August, following best practice guidelines (Collins, 2016).
- 4.5 **Moderate potential trees:** the proposed development should not impact on any of the trees identified with moderate potential to support roosting bats. However, should the plans change and any works or disturbances be scheduled in the future on T8, T18, T23, T24, T25, T26, T27 or T29, these trees will require further survey to establish the presence/likely absence of bats, prior to the commencement of works on the site. It would be necessary to carry out two emergence/re-entry surveys, between May and August, following best practice guidelines (Collins, 2016).

- 4.6 **Low potential trees:** Trees assessed as providing low potential to support roosting bats do not require further survey. However, they must be subject to a precautionary method of working whereby works are timed to avoid periods when bats are most likely to be present and/or most vulnerable to disturbance (during hibernation/maternity periods). The proposed plans indicate that trees T3, T4 and T5 may be removed as a result of the proposed development. Therefore, works on these trees should be timed for during either mid-March-April or September-October. Works must be completed under a 'soft fell' precautionary approach, whereby suitably qualified tree surgeons will cut and lower any substantial limbs to the ground to be left overnight to allow bats (if present) to make their way out.
- 4.7 As bats are highly mobile, and regularly switch between roost sites both within and between years, their presence should be considered throughout all stages of tree work. If bats, or evidence of bats, are found during development of the site, the works must cease immediately until advice on how to proceed has been obtained from a suitably qualified ecologist.
- 4.8 Should a bat roost be confirmed to be present in the trees listed above, a Natural England licence and mitigation strategy may be required. The findings and mitigation measures required may impose additional timing and methodological restrictions on works, to ensure that the works proceed lawfully.
- 4.9 To comply with legislation, any works to trees should also be undertaken in line with all recommendations provided in the PEA report (The Ecology Consultancy, 2019a), including measures with respect to breeding birds.

Trees and woodland protection

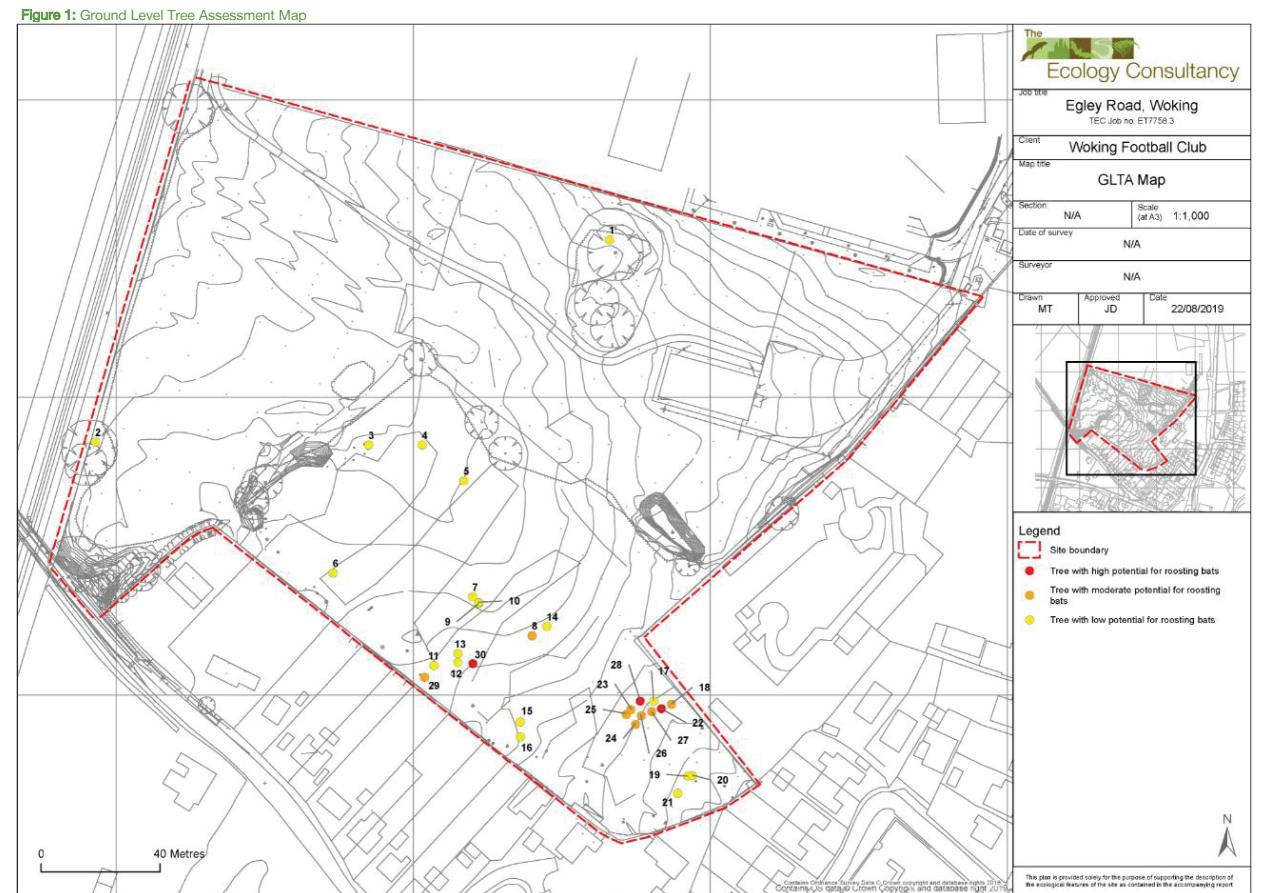
- 4.10 Where tree lines and areas of woodland are to be retained under the proposals, these should be protected in accordance with BS 5837:2012, minimising impacts through soil compaction, dust creation and inadvertent mechanical damage during the construction phase of the Scheme, and as detailed within the Arboricultural Impact Assessment report (The Ecology Consultancy, 2019b). These retained habitats will ensure that connectivity to suitable offsite habitat for wildlife is intact and available throughout the works.

- 4.11 Where trees identified with bat roosting potential are to be retained, they will be cordoned off and their locations informed to the ground workers. These trees will be protected during the works.
- 4.12 It is recommended that any future lighting scheme for the site is designed with input from an ecologist to ensure that potential bat roosting features within the scattered trees and woodland are not illuminated by artificial lighting. The woodland edges, which provide foraging and commuting habitat for bats should also remain unlit, to ensure that the site maintains its value for bats and biodiversity in general.

References

- Bat Conservation Trust (2018). *Bats and artificial lighting in the UK: Bats and the Built Environment Series*. Guidance note 08/18.
- Biodiversity Reporting and Information Group (2008) *UK Biodiversity Action Plan Priority Habitat Descriptions*. JNCC. Peterborough.
- British Standards Institution (BSI) (2012) BS 5837:2012- *Trees in relation to design, demolition and construction*. BSI, London.
- British Standards Institution (2013) Biodiversity. Code of practice for planning and development: 42020. BSI, London.
- Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd edition. The Bat Conservation Trust, London.
- Connolly, S. & Charles, P. (2005) *Environmental good practice pocket book*. CIRIA, London.
- Cowan, A (2006) *Assessment of Trees with consideration to their value for use by bats*. Kent: ArborEcology.
- Henry Andrews (2018) *Bat Roosts in Trees: A guide to identification and assessment for tree-care and ecology professionals*. Exeter. Pelagic Publishing.
- Leach Rhodes Walker Architects (2019). Option 11- Egley Road Ground Floor Site Plan. 7884_L(00)263_C. Date drawn 26.06.19.
- Ministry of Housing, Communities and Local Government (2019). *National Planning Policy Framework*. Ministry of Housing, Communities and Local Government, London. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf
- The Ecology Consultancy (2019a). Egley Road, Woking: *Preliminary Ecological Appraisal*. Report for Woking Football Club. Report reference 7758
- The Ecology Consultancy (2019b). Egley Road, Woking. *Arboricultural Impact Assessment*. Report for Woking Football Club. Report reference 7758.1.
- Woking 2027 (2012) Planning the future of our Borough. Woking Local Development Document: Woking Core Strategy – October 2012. <http://www.woking2027.info/developmentplan/corestrategy/adoptedcorestrategy.pdf> [accessed 20 February 2019].

Appendix 1: Ground Level Tree Assessment Map



Appendix 2: Photographs

Photograph 1:
T5 - Woodpecker hole within stem that has been cut at the top, pine tree with cluttered drop zone.



Photograph 2:
T6 – oak tree with ivy covering that is not dense enough to provide potential roosting feature but may be obscuring other potential roosting features.



Photograph 3:
T8 – Tree with woodpecker holes and sparse ivy on all aspects. Moderate potential to support roosting bats.



Photograph 4:
T11 - with woodpecker hole within trunk.



Photograph 5:
T12 - twin stem poplar tree, with woodpecker hole within trunk.



Photograph 6:
T18- Mature lime tree with a large dead stem with multiple woodpecker holes. Feature with moderate potential to support roosting bats.



Photograph 7:
T22- Lime tree with callous roll that extends up into the trunk. Feature with high potential to support roosting bats.



Photograph 8:
T29- Lime tree with callous roll that extends up into the trunk. Feature with high potential to support roosting bats.



Photograph 9:
T30 - Acacia tree with knot hole and cavity. Feature with high potential to support roosting bats.



Appendix 3: Legislation and Planning Policy

Important notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive¹ is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (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) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

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

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2017 (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below.

These should be read in conjunction with the relevant species sections that follow.

- In the Directive, the term ‘deliberate’ is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2017 does not define the act of ‘migration’ and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three ‘tests’: i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Bats

All species of bat 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 Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
 - to impair their ability:
 - to survive, breed, or reproduce, or to rear or nurture young;
 - to hibernate or migrate³
 - to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected 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;
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. 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 those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity of a local population.

Birds

All wild birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it 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;
- Intentionally take or destroy an egg of any wild bird;
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher 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.

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to

August². Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSIs) under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on

² It should be noted that this is the main breeding period. Breeding activity may occur outside of 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.

Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are protected under The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. 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. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Sites and Access to the Countryside Act 1949 **Local Nature Reserves** (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a **Wildlife Site**, under a variety of names such as **County Wildlife Sites (CWS)**, **Listed Wildlife Sites (LWS)**, **Local Nature Conservation Sites (LNCS)**, **Sites of Biological Importance (SBIs)**, **Sites of Importance for Nature Conservation (SINCs)**, or **Sites of Nature Conservation Importance (SNCIs)**. The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

C NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) and was updated in February 2019, as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

56 Priority Habitats and 943 Priority Species (formally known as UK BAP Habitats and Species) have been listed that are of principal importance for the conservation of biodiversity in the UK. Priority Habitats include 'Lowland Mixed Deciduous Woodland' and 'Hedgerows'.

D LOCAL PLANNING POLICY

Woking Borough Core Strategy

The Woking Borough Core Strategy (2012) deals with matters of strategic importance for the Woking area. Key chapters include Chapter 5 – *Borough wide policies*.

Policy CS7: Biodiversity and Nature Conservation

The Council is committed to conserving and protecting existing biodiversity assets within the Borough. It will require development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate. This will include those habitats and species listed in the Surrey Biodiversity Action Plan (BAP). Any development that will be anticipated to have a potentially harmful effect or lead to a loss of features of interest for biodiversity will be refused.

The Council will encourage new development to make positive contribution to biodiversity through the creation of green spaces, where appropriate, and the creation of linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

Any development with potential impact on the SPA or the SAC will be subject to a Habitats Regulations Assessment to determine the need for Appropriate Assessment.

Policy CS17: Open space, green infrastructure, sport and recreation

All proposals for new residential development (other than replacement dwellings) will be required to contribute towards the provision of open space and green infrastructure, including the following:

- children's play areas and outdoor recreational facilities for young people.
- outdoor sports facilities.

Developers will be expected to contribute to provision through the Community Infrastructure Levy (CIL) or on larger sites through on-site provision and/or a S106 contribution as appropriate. Development involving the loss of open space will not be permitted unless:

- alternative and equivalent or better provision is made available in the vicinity
- or the development is directly related to the enhancement of the open space.

New residential units within five km of an SPA will be required to provide or contribute to the provision and improvement of Suitable Alternative Natural Greenspace (SANG) which is a component of Green Infrastructure and also its Strategic Access Management and Monitoring (SAMM). This land will be used to mitigate the impact and effect of residential development on the SPA, by providing informal recreation land of appropriate quality across Woking Borough. Standards for the provision of SANG are set out in the Council's Thames Basin Heaths SPA Avoidance Strategy 2010-15.

Policy CS22: Sustainable Construction

New residential development on greenfield sites will be required to meet the Code for Sustainable Homes level 5 (or any future national requirement) from now because of the relatively lower cost of developing such sites.

The Council will consider a case based on evidence of viability if an applicant can demonstrate that the requirement for code level 5 cannot be met. This will be considered on a case by case basis. New non-residential development of 1,000 sq.m or more (gross) floorspace is required to comply with BREEAM very good standards (or any future national equivalent).

All development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code.

Policy CS24- Woking's landscape and townscape

All development proposals will provide a positive benefit in terms of landscape and townscape character, and local distinctiveness and will have regard to landscape character areas. To protect local landscape and townscape character, development will be expected to:

- conserve, and where possible enhance existing character, especially key landscapes such as heathlands, escarpments and the canal/river network and settlement characteristics; maintain locally valued features, and enhance or restore deteriorating features
- respect the setting of, and relationship between, settlements and individual buildings in the landscape
- conserve, and where possible, enhance townscape character, including structure and land form, landscape features, views and landmarks, and appropriate building styles and materials
- support land management practices that have no adverse impact on characteristic landscape patterns and local biodiversity.
- Protect and encourage the planting of new trees where it is relevant to do so.

E REGIONAL AND LOCAL BAPS

A number of priority habitats and species have been identified in the Biodiversity & Planning in Surrey document (Surrey Nature Partnership, 2018). Priority habitats and species within Surrey, and within Woking Borough that are of relevance to this report include:

- Species:
 - bats;
 - birds of farmland and the wider countryside – including song thrush and starling; and
 - invertebrates.



Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 W. www.ecologyconsultancy.co.uk E. enquiries@ecologyconsultancy.co.uk

- **Sussex** - 3 Upper Stalls, Iford, Lewes, East Sussex BN7 3EJ T. 01273 813739
- **East Anglia** - 60 Thorpe Road, Norwich, Norfolk NR1 1RY T. 01603 628408
- **Midlands** - 1-2 Trent Park, Eastern Avenue, Lichfield, Staffordshire WS13 6RN T. 01543 229049
- **North** - Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR T. 01924 683558

Annex 4: Bat Activity Survey Report

Egley Road, Woking

Bat Activity Survey

Report for Woking Football Club

Author	Gemma Watkinson MBiolSco ACIEEM		
Job No	7758.3		
Version	Date	Checked by	Approved by
1.0 Interim Draft	30.09.2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	Wendy McFarlane MA MSc MCIEEM
2.0 Initial	10.10.2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	
3.0 Revision	13.11.2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	
4.0 Revision	20.11.2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	



Contents

Executive Summary	4
1 Introduction	6
2 Methodology	8
3 Results	11
4 Discussion and Conclusions	24
References	28
Appendix 1: Habitat Survey Map	29
Appendix 2: Location of Static Detectors	31
Appendix 3: Bat Activity Transect Survey Maps	33
Appendix 4: Transect Survey Data	41
Appendix 5: Light Measurements Data	63
Appendix 6: Legislation	68

LIABILITY

The Ecology Consultancy has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of The Ecology Consultancy. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by The Ecology Consultancy, unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of The Ecology Consultancy. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy, part of the Temple Group, is the trading name of Ecology Consultancy Ltd.

Executive Summary

A bat activity survey, comprising dusk and dawn walked transects and static monitoring was undertaken in the proposed Egley Road, Woking site. The survey aimed to assess the importance of the survey area for foraging and commuting bats, identify which species of bat were utilising the area and inform appropriate mitigation and proportional enhancement measures.

Seven walked transects were carried out on 8 April, 23 May, 19 June, 15-16 July, 17 August, 12 September and 7 October 2019, and static detector deployments for five nights were carried out for each month April - October. The survey included an assessment of any ecological constraints applying to the proposed development and recommendations for protecting, managing and enhancing the habitat on site for foraging and commuting bats during and post construction. The main findings of the survey were as follows:

- A minimum of eight species of bat were recorded during the transects and by the static detectors: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, serotine, Leisler's bat, noctule, *Plecotus* species (likely to be brown long-eared bat) and *Myotis* species. Of these species, soprano pipistrelle, brown long-eared bat and noctule are Species of Principal Importance.
- Commuting and foraging activities were recorded throughout the site, across all habitat types, with highest levels of activity recorded along linear features such as the woodland edges and the adjacent railway line. These habitats are therefore likely to function as an important navigational feature and foraging ground for locally roosting bats.
- Calls for common pipistrelle, soprano pipistrelle and *Myotis* species were recorded within the anticipated emergence time for these species in every transect. This suggests that these bats are likely to be roosting on site or in suitable habitat within close proximity to the site.
- Lighting plans are yet to be produced. Given bat activity was recorded throughout the site, but particularly within the woodland and woodland edges, which are currently not illuminated by artificial lighting, and included species which are less common and bats which are more light sensitive including *Myotis* sp. and likely brown long-eared bat, lighting proposals have the potential to have an impact and should be designed to ensure these habitats remain unlit, to minimise effects on bats (Fure, 2006; Stone, 2013).
- The Ground Level Tree Assessment carried out by The Ecology Consultancy in April 2019 identified trees with potential to support roosting bats. Due to the early records of bat

activity during the dusk transects, the trees with bat roosting potential identified within the survey area may be utilised by these bats. It is therefore recommended that the trees with potential to support roosting bats are subjected to further investigation as advised within the Ground Level Tree Assessment report (The Ecology Consultancy, 2019b) if they are to be impacted by the proposed development.

- The woodland and woodland edges provide significant foraging and commuting habitat for bats. Impacts on these habitats should be avoided and mitigated where possible to ensure the continued ecological functionality of the commuting and foraging resources for bats within the survey area. A site wide Landscape and Ecological Management Plan (LEMP) should be drawn up to cover the long-term maintenance of retained and newly created on-site habitats.

1 Introduction

BACKGROUND

- 1.1 The Ecology Consultancy was commissioned by Woking Football Club in April 2019 to carry out a bat activity survey, consisting of seven walked transects and deployment of two static recording devices, in and around an area of land off Egley Road in Woking, Surrey.
- 1.2 A number of ecological assessments have been undertaken to date which relate to bats on site. These are listed below, followed by a summary of the details pertinent to this assessment:
 - Preliminary Ecological Appraisal (PEA) (The Ecology Consultancy, 2019)
 - Ground Level Tree Assessment (GLTA) (The Ecology Consultancy, 2019b).
- 1.3 The PEA and GLTA identified habitats suitable for roosting, commuting and foraging bats on site. The desk study returned records of bats from within 2km of the site.

SCOPE OF THE REPORT

- 1.4 This report outlines the methodologies and findings of the bat activity survey. Recommendations regarding further surveys and any appropriate mitigation measures that must be followed prior to and during construction works as well as advice in relation to habitat protection, creation and enhancement for the site post construction are described in Section 5. A habitat survey map of the site is presented in Appendix 1. The location of static detectors deployed on site is provided in Appendix 2, bat activity transect maps are included in Appendix 3, the full survey results are presented in Appendix 4 and Appendix 5, and Legislation is provided in Appendix 6.

SITE CONTEXT AND STATUS

- 1.5 The site currently comprises open field, with one building located in the north-east of the site. There is a large area of trees in the southern portion of the site and access to the site is via a small road off of Egley Road (A320), located to the east of the site. The proposed development site is approximately 4.1 hectares (ha) in size and is centred on Ordnance Survey National Grid reference SU 99416 56408. The site lies off Egley Road, on the outskirts of Woking, in Surrey. The site is not subject to any statutory or non-statutory nature conservation designations. The site is bordered by a school and sports facility to the north, a railway line to the west, a garden centre and business properties

to the east, and residential dwellings and gardens to the south. The wider landscape comprises grassland fields with hedgerows and woodland to the west, further residential dwellings, and Mayford Meadows Local Nature Reserve to the east of Egley Road, further residential properties and a school to the south, and grassland and scattered trees in the wider landscape to the south.

DEVELOPMENT PROPOSAL

- 1.6 The development proposals for the site, based on current plans provided by the client (Leach Rhodes Walker Architects, 2019) are the redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road serving Hoe Valley School. The majority of the existing woodland will be retained on site, but several of the trees on the edge of the woodland will be removed to facilitate development. Lighting plans are yet to be produced for the site, but will likely include street-side lighting within the residential part of the site. It is understood that there will be no night-time flood lighting anywhere on site during the active bat period.

2 Methodology

DESK STUDY

- 2.1 As part of the PEA carried out by The Ecology Consultancy in February 2019 a desk study was conducted to obtain data relating to bats within a 2km radius of the site, as made available by Surrey Biodiversity Information Centre (SBIC).
- 2.2 Additional contextual information was compiled from publicly available data sources:
- MAGIC (<http://www.magic.gov.uk>) – the Governments on-line mapping service. Information was sought about: the presence of ancient semi-natural woodland (ASNW), statutory designated nature conservation sites and extant or historic European Protected Species Mitigation licences for bats. The search was widened to 30km for statutory sites designated for bats.
 - Ordnance Survey mapping and publicly available aerial photography to determine any features such as: running and standing water, woodland, tree lines, hedgerows, railway corridors and the surrounding landscape uses.

BAT ACTIVITY SURVEY

- 2.3 Activity transects were carried out at the site during April - October 2019. The aims of the survey were to identify:
- the bat species using the site;
 - the relative frequency with which the site is used by any bat species;
 - the nature of activity for different species, for example foraging, commuting or roosting; and,
 - the habitats within the site that are of value for bats (i.e. by being frequently used; used by high numbers of bats; linking habitats beyond the site and across the landscape).
- 2.4 Two experienced bat ecologists each carried out the survey transect. Listening points were distributed across the site and the surveyors stopped and recorded for approximately five minutes at each of these before moving to the next (see Appendix 3, Figures 3-9 for transect route and listening point locations).
- 2.5 Each transect commenced at sunset and finished 2 hours after sunset. Due to the habitats having moderate potential to support roosting bats, one transect, the July transect was completed at dusk and also the following dawn in line with best practice guidance (Collins, 2016). The dawn survey commenced two hours prior to sunrise and

finished at sunrise. The transects were designed to fully cover the site and habitats present with listening points set throughout each transect.

- 2.6 Elekon Batloggerbat detectors were used to output and record bat echolocation calls in full spectrum. Recordings were later analysed using Bat Explorer™ to aid the identification of species according to Russ (2012).

STATIC ACTIVITY SURVEY

- 2.7 Two static bat detectors were placed for a minimum of five nights in a fixed location in suitable bat habitat within the survey area to continually record bat activity close to the detector monthly from April - October. The detector was programmed to start recording 30 minutes before sunset and stop recording 30 minutes following sunrise.
- 2.8 Anabat Express™ bat detectors were used, which automatically record ultrasonic noise in Zero Crossing Format within the pitch-range generally called by bats. The detectors were placed in the north and south of the site, as shown in Appendix 2. The calls were later analysed using Analook™.

LIGHT MEASUREMENTS

- 2.9 During the October transect survey, a hand held light meter measuring in Lux was used to determine the baseline light levels on site. The readings were taken at the north, east, south and west bearings, and pointing up towards the sky and down towards the ground, taken at chest height (approximately 1.5m), at each listening point along the transect (8 in total).

LIMITATIONS

- 2.10 It should be noted that, whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. It is considered that this report accurately reflects the habitats present, their biodiversity values and the potential of the site to support foraging and commuting bats.
- 2.11 Results gathered from the transect surveys are representative of the bat activity at the times the surveys were undertaken, in this case, from April until October. The results should not be taken as the typical bat activity level of the survey area throughout the entire survey season.
- 2.12 Few *Plecotus* species were recorded on any devices. They may be present in higher numbers than indicated from the recordings, as their calls are extremely quiet and are

usually only recorded when within a few metres of the detector. This is a limitation inherent in surveys of this nature, despite the high-quality equipment being used.

- 2.13 Static detector 1 at the north-west of the site failed to record during August. It also only recorded for four of the five nights during the July static survey. However, this is not considered to be a significant limitation, given the quantity of data that was collected from April – October, which is considered to be representative of the activity found on site.
- 2.14 On 19 June 2019 there was heavy rain for an hour before and ten minutes after sunset. The rain cleared and the survey was started ten minutes after sunset, but the weather conditions were suboptimal throughout the survey, with light rain showers and some heavier rain showers. However, bats were recorded throughout the transect survey.
- 2.15 During the dawn activity transect on 16 July 2019, the temperature dropped to a minimum of 9°C, which may have resulted in bats foraging for a shorter time period or using alternative sheltered habitats. However the temperature at sunset was 18 °C, with no rain or wind, which are optimal conditions and the lower dawn temperatures are not considered to be a significant limitation.
- 2.16 The weather was suboptimal for the October transect survey. There was light rain before the survey commenced and light rain showers during the survey. However, the temperatures were still mild for the time of year, and bats were recorded during the survey. This was not considered to be a significant limitation, as the static survey data for October could be used to inform the activity on site during October.
- 2.17 It should be noted that the lux measurements taken only represent a snapshot in time (e.g moon phase on 7 October was 67% visible, although there was full cloud cover), and should not be taken as a full lighting assessment for the site. These measurements are intended to be used as an indicator of the areas of the site which currently have low levels of illumination by artificial lighting, and should therefore remain unlit within the proposed new development of the site.

3 Results

DESK STUDY

- 3.1 The data search returned 28 records of bats, for ten of the UK’s 18 species. The most recent records include common pipistrelle, soprano pipistrelle, brown long-eared bat, Daubenton’s bat, Natterer’s bat, whiskered bat and serotine bat all in 2016, and records of noctule bat in 2003.
- 3.2 Previous bat surveys associated with the development of the land to the north of the site recorded common pipistrelle, soprano pipistrelle, Myotis species, noctule bat, Leisler’s bat and brown long-eared bat. Two common pipistrelles and two soprano pipistrelles were also recorded roosting within a tree to the north of the adjacent development site in 2015 (Thomson Ecology, 2015d). This roost is unlikely to be impacted by the proposed development, as it is located approximately 300m north of the site, and to the north of the Hoe Valley School site.
- 3.3 There are no historic or extant European Protected Species Mitigation (EPSM) bat licenses and no sites designated for bats within a 2km radius of the site. A summary of the most pertinent results are presented in Table 3.1 below.

Table 3.1: Summary of desk study results

Species	Date	Notes
Common pipistrelle	2016	SU9954
Soprano pipistrelle	2016	SU9854
Natterer’s	2016	SU9756, SU9854, TQ0057
Serotine	2016	SU9954
Daubenton’s	2016	SU9954, TQ0057
Whiskered	2016	SU9954
Brown long-eared	2011, 2016	SU9754, SU9756
Noctule	2003	TQ0057

BAT ACTIVITY TRANSECTS

- 3.4 This section provides a summary of the results of the transect surveys, which are mapped in Appendix 3, with full survey results provided in Appendix 4.

Dusk activity transect 8 April 2019

- 3.5 The temperature was 11°C at the start of the survey at 19:45, and remained at 11°C throughout the survey which finished at 21:45. Sunset was at 19:47.

- 3.6 Three species of bat, common pipistrelle, soprano pipistrelle and noctule were recorded during the transect. A total of 15 bat activity recordings were noted; no bats were seen to emerge from the trees on site and all seen bats were commuting and/or foraging, in particular around the scattered trees at the north of the site and within the woodland or along the northern and western edges of the woodland at the south of the site.
- 3.7 The first bat recorded was a single soprano pipistrelle observed foraging in repeat circular passes around the woodland canopy from listening point 2, within the woodland at 19:54, 7 minutes after sunset. This is within the typical emergence period of this species, which is up to 30 minutes from sunset. As such, it is highly likely that this bat was roosting in habitat within the survey area or within close proximity to the survey area. Common pipistrelle were also recorded within their typical emergence periods. The bats recorded could be coming from the confirmed roost identified to the north of the site, as detailed within the data search.
- 3.8 The level of bat activity was generally low when compared with transects carried out later in the year. Common and soprano pipistrelle were recorded in multiple locations across the site. However, noctule was only recorded once adjacent to the woodland edge at the east of the site.
- 3.9 The survey findings are mapped in Appendix 3, Figure 3, presented in detail in Appendix 4, and Table 3.3 below summarises the total number of passes for each species.

Table 3.3: Total bat passes by species - 08/04/2019.

Species	Total number of passes
Common pipistrelle	6
Soprano pipistrelle	7
Pipistrelle species	1
Noctule	1

Dusk activity transect 23 May 2019

- 3.10 The temperature was 18°C at the start of the survey at 20:58, and throughout the survey which finished at 22:58. Sunset was at 20:58. At least five species of bat, common pipistrelle, soprano pipistrelle, noctule, *Plecotus* species and a Myotis species were recorded during the transect.

- 3.11 A total of 43 bat activity recordings were taken, no bats were seen to emerge from the trees on site and all observed bats were commuting and/or foraging throughout the site. Of the 43 recordings, the majority were noctule, soprano and common pipistrelle from across the site. A single recording was made of a long-eared species at listening point 1, seen foraging along the woodland edge at 21:55. It is highly likely that this is a brown long-eared bat, as the site is outside of the assumed range for grey long-eared bats. A single recording was made of a *Myotis* species at listening point 7, but was not seen.
- 3.12 The first bat, a noctule, was unseen at 21:13 at listening point 3, 15 minutes after sunset. This was followed by a noctule two minutes later seen commuting across the site in a south-easterly direction from the railway at listening point 3. These records are outside the typical emergence period of this species, which is early, at approximately sunset. The first common pipistrelle was recorded at 21:29, approximately 31 minutes after sunset. This is only one minute outside of the typical emergence period for this species, and it is likely that this bat was roosting in habitat within close proximity to the survey area.
- 3.13 There were more species and higher levels of activity recorded during the May transect, in comparison to the previous transect.
- 3.14 The survey findings are mapped in Appendix 3, Figure 4, presented in detail in Appendix 4, and the total number of passes for each species is shown in Table 3.4 below:

Table 3.4: Total bat passes by species - 23/05/2019.

Species	Total number of passes
Soprano pipistrelle	9
Common pipistrelle	21
Noctule	8
<i>Plecotus</i> species	1
<i>Myotis</i> species	1

Dusk activity transect 19 June 2019

- 3.15 The temperature was 18°C at the start of the survey at 21:39, and 18°C when the survey finished at 23:22. Sunset was at 21:18, and there was heavy rain for an hour before and ten minutes after sunset, when the rain cleared and the survey was started.
- 3.16 At least four species of bat, common pipistrelle, soprano pipistrelle, noctule and a *Myotis* species, were recorded during the transect.
- 3.17 A total of 28 bat activity recordings were taken, no bats were seen to emerge from the trees on site and all bats were commuting and/or foraging throughout the site. A common pipistrelle was seen foraging in circular passes around the woodland edge at listening point 1. Of the 28 recordings, the majority were soprano and common pipistrelle. A single pass was recorded for noctule and *Myotis* species.
- 3.18 The first bat, a common pipistrelle, was recorded commuting in the east of the site at listening point 1 at 21:40, 22 minutes past sunset. This record is within the typical emergence period of this species which is 30 minutes from sunset. It is highly likely that this bat was roosting in habitat within close proximity to the survey area.
- 3.19 The number of species recorded during this transect and the level of bat activity was similar to that of the previous transects, and the suboptimal weather conditions are not considered to be a significant limitation to the survey. The survey findings are mapped in Appendix 3, Figure 5, and presented in detail in Appendix 4. The total number of passes for each species is shown in Table 3.5 below:

Table 3.5: Total bat passes by species – 19/06/2019

Species	Total number of passes
Soprano pipistrelle	3
Common pipistrelle	21
Noctule	3
<i>Myotis</i> species	1

Consecutive dusk and dawn activity transect 15-16 July 2019

- 3.20 During the dusk activity transect the temperature was 18°C at the start of the survey at 21:13, and dropping to 13°C when the survey finished at 23:13. Sunset was at 21:13.

- 3.21 At least three species of bat, common pipistrelle, soprano pipistrelle and noctule, were recorded during the transect. A total of 24 bat activity recordings were taken, no bats were seen to emerge from the trees on site and all observed bats were commuting and/or foraging, with the highest levels of activity recorded in the woodland and at the woodland edges. A single soprano pipistrelle and two common pipistrelle bats were observed foraging around the woodland edge and canopy.
- 3.22 Of the 24 recordings, the majority were soprano and common pipistrelle. The first bat recorded was a soprano pipistrelle within the woodland on site at 21:25, approximately 12 minutes after sunset. These records are within the typical emergence period of this species, which is 30 minutes from sunset. It is highly likely that these bats were roosting in habitat within close proximity to the survey area.
- 3.23 During the dawn activity transect the temperature was 11°C at the start of the survey at 03:04, and 9°C when the survey finished at 05:04. Sunrise was at 05:04.
- 3.24 Two species of bat, soprano pipistrelle and common pipistrelle, were recorded during the dawn transect. The last bat recorded was at 04:17.
- 3.25 Fewer species were recorded and the level of bat activity was lower across the dusk and dawn transects in comparison to the previous transects. The survey findings are mapped in Appendix 3, Figure 6, and presented in detail in Appendix 4. The total number of passes for each species for the dusk transect is shown in Table 3.6, and for the dawn transect in Table 3.7 below:

Table 3.6: Total bat passes by species - 13/08/2018. Dusk

Species	Total number of passes
Soprano pipistrelle	7
Common pipistrelle	12
Pipistrelle species	1
Noctule	4

Table 3.7: Total bat passes by species – 16/07/2019. Dawn

Species	Total number of passes
---------	------------------------

Soprano pipistrelle	2
Common pipistrelle	6

Dusk activity transect 6 August 2019

- 3.26 The temperature was 21°C at the start of the survey at 20:42, and 18°C when the survey finished at 22:42. Sunset was at 20:42.
- 3.27 At least five species of bat, common pipistrelle, soprano pipistrelle, noctule, a *Plecotus* species and a *Myotis* species of bat, were recorded during the transect.
- 3.28 A total of 33 bat activity recordings were noted, no bats were seen to emerge from the trees on site and all observed bats were commuting and/or foraging throughout the site. Of the 33 recordings, the majority were common pipistrelle. The greatest number of passes by these species was noted within the woodland and at the woodland edges.
- 3.29 A long-eared species, likely a brown long-eared bat, was recorded once during the transect, at listening point 5, in the south-western corner of the site at 22:31. A *Myotis* species was also recorded twice during the survey at listening point 7 at 21:59 and at listening point 6. Both species were recorded outside the emergence time for these species. Noctule was recorded on two occasions during the survey. The earliest was at 21:45, 63 minutes past sunset at listening location 4, outside of the emergence time for this species. Common and soprano pipistrelle were recorded within their typical emergence periods at 20:47 and 20:52 respectively 5 and 10 minutes past sunset. They were seen foraging around the woodland canopy and woodland edges. It is highly likely that these bats were roosting within the site or in suitable habitat within close proximity to the survey area.
- 3.30 The number of species recorded during this transect and the level of bat activity was comparable to the previous transects. The survey findings are mapped in Appendix 3, Figure 7, presented in detail in Appendix 4. The total number of passes for each species is shown in Table 3.8 below:

Table 3.8: Total bat passes by species – 06/08/2019.

Species	Total number of passes
Soprano pipistrelle	3

Common pipistrelle	25
Noctule	2
<i>Plecotus</i> species	1
<i>Myotis</i> species	2

Dusk activity transect 12 September 2019

- 3.31 The temperature was 19°C at the start and end of the survey. The survey started at sunset, which was at 19:24, and the survey finished at 21:24.
- 3.32 At least four species of bat, common pipistrelle, soprano pipistrelle, noctule and *Myotis* species were recorded during the transect.
- 3.33 Bats were recorded using all parts of the site, except at stop 7, in the north-western corner of the site. A bat (considered to be a Pipistrelle species) was seen foraging in the woodland at 19:17, before sunset, and before the start of the survey, whilst the static detector was being collected. Soprano pipistrelle and common pipistrelle were recorded within their typical emergence times. Both species were recorded throughout the site, with the highest levels of activity recorded within the woodland and along the woodland edges. Noctule was heard but not seen, commuting across the site on three occasions. A *Myotis* species was heard but not seen once at location 3 within the woodland towards the south of the site. The survey findings are mapped in Appendix 3, Figure 8, presented in detail in Appendix 4. The total number of passes for each species is shown in Table 3.9 below:

Table 3.9: Total bat passes by species – 12/09/2019.

Species	Total number of passes
Common pipistrelle	28
Soprano pipistrelle	7
Pipistrelle species	1
Noctule	3
<i>Myotis</i> species	1

Dusk activity transect 10 October 2019

- 3.34 The temperature was 15°C at the start and end of the survey. The survey started at sunset, which was at 18:27, and the survey finished at 20:27.
- 3.35 Two species of bat, common pipistrelle and noctule, were recorded during the transect.
- 3.36 Bats were recorded using the woodland edges for foraging and commuting, being recorded at stops 1, 2 and 4. A noctule bat was also recorded commuting at stop 6, but was not seen. The first bat recorded was a noctule bat at 18:40, which is not within the typical emergence period for this species. The first common pipistrelle to be recorded was at 18:48, which is within the typical emergence period for this species. The survey findings are mapped in Appendix 3, Figure 8, and presented in detail in Appendix 4. The total number of passes for each species is shown in Table 3.9 below:

Table 3.9: Total bat passes by species – 10/10/2019.

Species	Total number of passes
Common pipistrelle	5
Noctule	3

SUMMARY

- 3.37 A minimum of five species of bats were recorded utilising the site for foraging and/or commuting during the bat activity transect surveys: common pipistrelle, soprano pipistrelle, noctule, *Plecotus* species and *Myotis* species. Not all bat species were recorded during each transect; a *Plecotus* species was only recorded during the May and August transects.
- 3.38 Common and soprano pipistrelles have been recorded within the typical emergence period for the respective species. This indicates that they were highly likely to be roosting in habitat within close proximity of the site or within suitable habitat on site. The level of bat activity within the survey area was generally consistent and the bats were recorded throughout the site, with highest levels of activity recorded in the woodland and around the woodland edges, and lower levels of activity across the rest of the site.
- 3.39 The key findings from the transects indicated that the survey area was in constant use by soprano and common pipistrelle and occasional use by noctule, *Plecotus* species,

and *Myotis* species. Foraging and commuting activities were recorded throughout the site across all types of habitat, especially along linear features such as the northern and western edges of the woodland at the south of the site.

STATIC RECORDING

3.40 This section provides a summary of the static recording results.

Static recordings – Static 1 (within woodland)

3.41 Table 3.10 below provides a summary of the monthly static recording results from 15 April to October 2019.

3.42 Overall, at least five species were recorded at static location 1 in the south of the site within the woodland. The most frequently recorded species was common pipistrelle, and the next most frequently recorded species was soprano pipistrelle. Noctule was the least recorded species, being recorded on only one occasion in August. A *Plecotus* species, likely to be brown long-eared was recorded 6 times, on two separate nights, in April and July. There was a high number of recordings for *Myotis* species during the October survey.

3.43 Incidental recordings not within the 5 day period shown below include Nathusius pipistrelle, which was recorded once on 22 April 2019. This species was not recorded during the transect surveys.

3.44 Common pipistrelle and soprano pipistrelle were recorded on the detector during their typical emergence period in all months. A *Myotis* species was recorded during its typical emergence period in May, July and September. *Plecotus* species and noctule were not recorded within their typical emergence periods.

Table 3.10: Total bat passes by species – Static 1 (within woodland)

Species/ Month	15 – 19 April	23 - 27 May	27 June – 1 July	9 – 13 July	2 – 6 August	7 - 11 September	2 – 6 October	Total
Common pipistrelle	179	2686	855	494	3137	344	973	8668
Soprano pipistrelle	184	684	436	457	947	379	626	3713

Table 3.10: Total bat passes by species – Static 1 (within woodland)

Species/ Month	15 – 19 April	23 - 27 May	27 June – 1 July	9 – 13 July	2 – 6 August	7 - 11 September	2 – 6 October	Total
Pipistrelle species	3	4	0	66	15	37	0	125
Noctule	0	0	0	0	1	0	0	1
<i>Myotis</i> species	9	8	44	10	16	6	157	250
<i>Plecotus</i> species	3	0	0	3	0	0	0	6
Unknown	0	0	1	2	0	0	0	3
Total number of species	4	3	3	4	4	3	3	

Static recordings– Static 2 (on oak tree at north-west of site, adjacent to railway)

3.45 Table 3.11 below provides a summary of the monthly static recording results from 15 April to October 2019 for Static 2 located in the north-west of the site on one of the semi-mature oak trees on the boundary of the site, and adjacent to the railway.

3.46 Overall, at least eight species were recorded adjacent to the railway, at the north-west of the site. The most frequently recorded species was common pipistrelle, and the second most recorded species was soprano pipistrelle. Nathusius’ pipistrelle, Noctule, Serotine, Leisler’s bat, and *Myotis* species were the least recorded species. The static detector failed to record during the August survey. The number of passes recorded was much lower during the October survey, and only three species were recorded in each of the September and October surveys.

3.47 Common pipistrelle, and *Myotis* species were recorded during their respective emergence periods. This suggests they are roosting within suitable habitats on site or those within close proximity to the survey area.

Table 3.10: Total bat passes by species – Static 2 (on oak tree at north-west of site, adjacent to railway)

Species/ Month	15 - 19 April	23 - 27 May	27 June - 1 July	9 - 13 July	2 - 6 August	4 - 8 Septem ber	1 - 5 October	Total
Common pipistrelle	70	452	417	243	-	65	14	1261
Soprano pipistrelle	3	52	31	36	-	11	2	135
Nathusius' pipistrelle	3	0	0	0	-	0	0	3
Pipistrelle species	0	1	3	6	-	0	0	10
Noctule	0	4	13	10	-	0	0	27
Serotine	3	1	3	4	-	0	0	11
Leisler's	0	0	2	1	-	0	0	3
Nyctalus sp.	0	0	7	2	-	1	0	9
Big bat	0	2	1	0		0	0	3
<i>Myotis</i> species	2	4	1	7	-	0	1	15
<i>Plecotus</i> species	0	0	0	0	-	0	0	0
Unknown	0	0	3	4		0	0	7
Total number of species	5	5	6	6	-	3	3	

Summary

3.48 A minimum of eight species of bat: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, serotine, Leisler's bat, *Myotis* species and *Plecotus* species (likely brown long-eared) were recorded utilising the site for foraging and/or commuting during the bat activity transect and static surveys. Not all bat species were present during each transect or static deployment; Nathusius' pipistrelle was only recorded during April, on

the static deployment adjacent to the railway. Leisler's bat and serotine bat were not recorded during the transect surveys; however Leisler's bat was recorded during the June and July static recordings adjacent to the railway and serotine bat was recorded during all monthly static recordings adjacent to the railway.

3.49 Three species, common pipistrelle, soprano pipistrelle, and *Myotis* species have been recorded within the typical emergence period for the respective species. This indicates that they were highly likely to be roosting in habitat on site or within close proximity of the site.

3.50 No bats recorded were seen emerging from the trees within the survey area during the dusk transects. However, transect surveys do not focus on gathering information on likely bat emergences, thus, the lack of observations of bat emergence during transect surveys does not conclude the likely absence of bat roosts within the survey area. A GLTA undertaken on the trees on site identified several trees with potential to support roosting bats.

3.51 The level of bat activity within the survey area was generally consistent and the bats were recorded throughout the site, across all types of habitat present. The number of species recorded within each month was variable at 3-6 species. The highest number of species was consistently recorded on the Static 2 deployed at the north-west of the site adjacent to the railway. Static 1 in the woodland at the south-east of the site consistently recorded higher levels of activity, but for fewer species than Static 2.

3.52 The key findings from the transects indicated that the survey area was in regular use throughout the survey period by soprano pipistrelle, common pipistrelle and *Myotis* species, and occasional use by serotine bat, Leisler's bat, *Plecotus* species, noctule and Nathusius' pipistrelle. Foraging and commuting activities were recorded throughout the site across all types of habitat, but higher levels were recorded within the woodland at the south of the site and along linear features such as the woodland edges.

LIGHT MEASUREMENTS

- 3.53 A summary of the light measurement results carried out alongside the October transect surveys on the 7 October 2019 is provided in the table in Appendix 5. This shows the readings in northerly, easterly, southerly and westerly directions, and pointing towards the sky and down at the ground, at each of the eight points along the transect route. On this date, the moon was in a waxing gibbous phase, and 68% visible. However, it was overcast, with full cloud cover. The sports pitch and flood lighting adjacent to the north of the site was in use during the survey.
- 3.54 The lowest light level recorded was at listening location 3, where 0.00 Lux was recorded at 19:31, facing south and west, and when directed towards the ground.
- 3.55 The light levels were generally higher towards the north of the site, where there is likely to be light spill from the adjacent flood lights which were in use on the sports track during the survey.

4 Discussion and Conclusions

CONCLUSIONS

- 4.1 A minimum of eight species of bat were recorded during the transects and by the static detectors: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, serotine, Leisler's bat, noctule, *Plecotus* species and *Myotis* species. Of these species, soprano pipistrelle, *Plecotus* long-eared bat and noctule are Species of Principal Importance.
- 4.2 Both common and soprano pipistrelle and *Myotis* species were recorded within their anticipated emergence times. Although the time of emergence can vary throughout the year and is also affected by weather and cover of the local habitat (Collins, 2016), the records suggest that they are highly likely to be roosting in habitat within or in close proximity to the site.
- 4.3 The desk study identified common pipistrelle and soprano pipistrelle roosts on land to the north of the site. The Ground Level Roost Assessment completed in 2019 (The Ecology Consultancy, 2019b) identified trees on site with the potential to support roosting bats. Common pipistrelle and soprano pipistrelle were regularly recorded on site within their typical emergence period.
- 4.4 The vegetation within the survey area, particularly the woodland and woodland edges, may have an important function in providing a foraging area for bats and a commuting route to a roost, and/or between a roost and a foraging resource. Bat commuting and foraging activities were recorded across the site, but especially along tree lines and edges of woodland and within the woodland, along the railway line and around the scattered trees to the north. The survey area may also offer a link between suitable habitat from the eastern landscape and the western landscape, across a suburban area.
- 4.5 The recommendations below are made to ensure there are no significant effects on the commuting and foraging bats that use the site.

RECOMMENDATIONS

Further surveys

- 4.6 The Ground Level Tree Assessment carried out by The Ecology Consultancy in April 2019 identified three trees with high potential and eight trees with moderate potential to support roosting bats. There are 19 trees on site identified with low potential to support roosting bats. As bats have been recorded within the survey area before or

within their anticipated emergence time, the trees with bat roosting potential identified during the Ground Level Tree Assessment may be utilised by these bats. Currently no trees identified as having features with moderate or high potential to support roosting bats will be directly impacted by the proposed development. However, it is recommended that the Ground Level Tree Assessment report (The Ecology Consultancy, 2019b) is referred to before any works are carried out to any of the trees on site. Recommendations are provided for each level of potential identified, including precautionary working methods for trees with low potential to support roosting bats and further survey work required for any trees with higher potential to support bats where applicable.

Habitat protection

- 4.7 Construction will predominantly result in the removal of the semi-improved grassland and bare ground habitats. These areas had lower levels of bat activity.
- 4.8 Many bat species follow linear habitats to navigate across the landscape. Where tree lines, hedgerows or similar habitat is removed or fragmented, either directly or through artificial lighting at night, it limits their ability to commute and forage. The effects of development proposals on these should be taken into consideration when assessing the impact of the proposal on the maintenance of the Favourable Conservation Status of bats present (Jones, 2004). Therefore, the following recommendations are provided in order to allow the development to protect the existing commuting and foraging habitats on site, where this is possible, in accordance with the National Planning Policy Framework.

Tree lines and woodland protection

- 4.9 Foraging and commuting behaviour was recorded throughout the site across all types of habitat, but in particular higher levels of activity were recorded in the woodland and woodland edges, with lower levels along the western boundary of the site and around the scattered trees at the north of the site. It is recommended that these features are retained wherever possible, particularly when they form part of a linear habitat or areas of scrub and woodland edge habitat.
- 4.10 The development proposals indicate that to facilitate the development of the site, some trees from the northern part of the woodland, in addition to several of the scattered trees on site will be removed. It is understood that the majority of the woodland in the

south of the site, including those trees identified to have moderate and high roosting potential for bats, will be retained.

- 4.11 Habitat fragmentation and isolation as a result of human activities have been recognised as great threats to bat population viability. Of the species recorded, brown long-eared and *Myotis* species are particularly vulnerable to habitat loss as they are reliant on a network of high quality foraging habitats that are inter-connected. The ability for bat species to continue to utilise habitats across the site must therefore be retained. This can be achieved by retaining and enhancing linear features such as woodland edges and tree lines, but these must be kept unlit by artificial lighting.
- 4.12 A site wide Landscape and Ecological Management Plan (LEMP) should be drawn up to cover the long-term maintenance of retained and newly created on-site habitats. This should form part of the contractual agreement for the future management of the site, including a recommended buffer zone between the site and the areas of retained woodland, and retained scrub and scattered trees, as well as any proposed new trees and landscape planting.

Lighting scheme

- 4.13 Many bat species use habitat features such as hedgerows, woodland, scrub and tree lines as commuting routes between roosts and foraging areas (Altringham, 2003). The tree line at the south-east of the site and the woodland are features that are currently being utilised by local bats, and which are currently not illuminated by artificial lighting. Of the species recorded, more light sensitive species, *Myotis* species and *Plecotus* species have been recorded. Therefore, increasing levels of light at or near these habitat features, which are currently unlit is considered likely to have negative consequences for commuting and foraging bats, and is likely to have some impact on the assemblage of species using the site and could indirectly impact roosting habits (Collins, 2016).
- 4.14 Research has found that bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging from roosts, thus potentially reducing the time available for foraging, as well as potentially causing bats to move away from suitable foraging areas or roost sites to less optimal areas (Jones, 2000). It has been demonstrated that certain bat species will not cross lines of street lights, which disrupt bat flight paths and restrict access to suitable habitat (Stone *et al.*, 2009 and Gunnell *et al.*, 2012). Research and the professional opinion of leading experts suggests that lighting over 1 lux at night is likely to impact more light-sensitive bats (Stone, 2013; Fure, 2006).

4.15 The impacts on bats cannot be fully assessed until a lighting scheme for the proposed development has been submitted. It is recommended that any future lighting scheme for the whole site is designed with input from an ecologist to ensure that potential bat roosting features within the woodland, foraging and commuting habitat are not illuminated and that the site maintains its value for bats and biodiversity in general.

4.16 The following design strategies have been taken from accepted best practice (Fure, 2006; Institute of Lighting Engineers 2009 & 2018; Bat Conservation Trust 2011) and Urban Design for Bats and Biodiversity (Gunnell *et al.*, 2012):

- Lighting should not illuminate any trees, woodland, woodland edges and scrub on-site;
- The level of artificial lighting including flood lighting for the tennis courts should be kept to an absolute minimum;
- Where this does not conflict with health and safety and/or security requirements, the site should be kept dark during peak bat activity periods (0 to 1.5 hours after sunset and 1.5 hours before sunrise);
- Lighting required for security or safety reasons should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor-activated lamps;
- Lights utilising LED technology are the preferred option as these lights do not emit on the UV spectrum, are easily controllable in terms of direction/spill and can be turned on and off instantly;
- Dark zones and corridors to maintain connectivity should be provided throughout the site, particularly on the southern and western boundaries of the site, within the woodland and adjacent to the railway;
- Avoid the use of sodium or metal halide lamps; these gas lamps require a lengthy period in which to turn off and the diffuse nature of the light emitted makes light spillage a significant problem;
- Lighting should be directed only to where it is needed to minimise light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a shield/hood/cowl/ that directs the light below the horizontal plane and restricts the lit area;
- Artificial lighting should not directly illuminate any potential bat roosting features or habitats of value to commuting/foraging bats. Similarly, any newly planted features or newly installed bat roosting features should not be directly lit; and
- Lighting design computer programs can be used to predict the potential impacts of light spillage.

References

Altringham (2003) *British Bats*, Collins (1st Edition)

BCT (2008). *Bats and lighting in the UK – Bats and the built environment series*. http://www.bats.org.uk/publications_download.php/243/BATSANDLIGHTINGINTHEUKJan08.pdf

Collins. (2016) *Bat Surveys - Good Practice Guidelines 3rd Edition*. Bat Conservation Trust, London.

Fure, A. (2006). Bats and Lighting. *The London Naturalist No. 85*.

Gunnell, K., Grant, G. and Williams, C. (2012). *Landscape and Urban Design for Bats and Biodiversity*. Bat Conservation Trust, London.

JNCC (2001). *Habitat management for bats – a guide for land managers, land owners and their advisors*. JNCC, Peterborough.

Jones, J (2000). *Impact of Lighting on Bats*. Bat Conservation Trust, London.

Mitchell-Jones and McLeish (2004). *Bat Workers' Manual, Joint Nature Conservation Committee*. JNCC.

Russ, J. (2012). *British Bat Calls, A Guide to Species Identification*. Pelagic Publishing, Exeter.

Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation guidance*. University of Bristol, Bristol.

The Ecology Consultancy (2019a) *Egley Road, Woking - Preliminary Ecological Appraisal*. Unpublished report, for Woking Football Club.

The Ecology Consultancy (2019b) *Egley Road, Woking – Ground Level Tree Assessment*. Unpublished report, for Woking Football Club.

Thomson Ecology (2015b). Egley Road, Woking: Badger, Bat and Reptile Surveys for Willmott Dixon Construction Ltd. https://caps.woking.gov.uk/online-applications/files/2F45D1D6F48E5B7CC1587F9E8E9745FF/pdf/PLAN_2015_0703-ES_APP_11.2_BADGER_BAT_REPTILE_SURVEY-336252.pdf [accessed 20 February 2019].

Thomson Ecology (2015d). Egley Road, Woking: Bat Emergence, Return to Roost and Activity Surveys. ES Addendum_ Appendix A11.2. [accessed online 20 February 2019, within planning documents for PLAN/2015/0703].

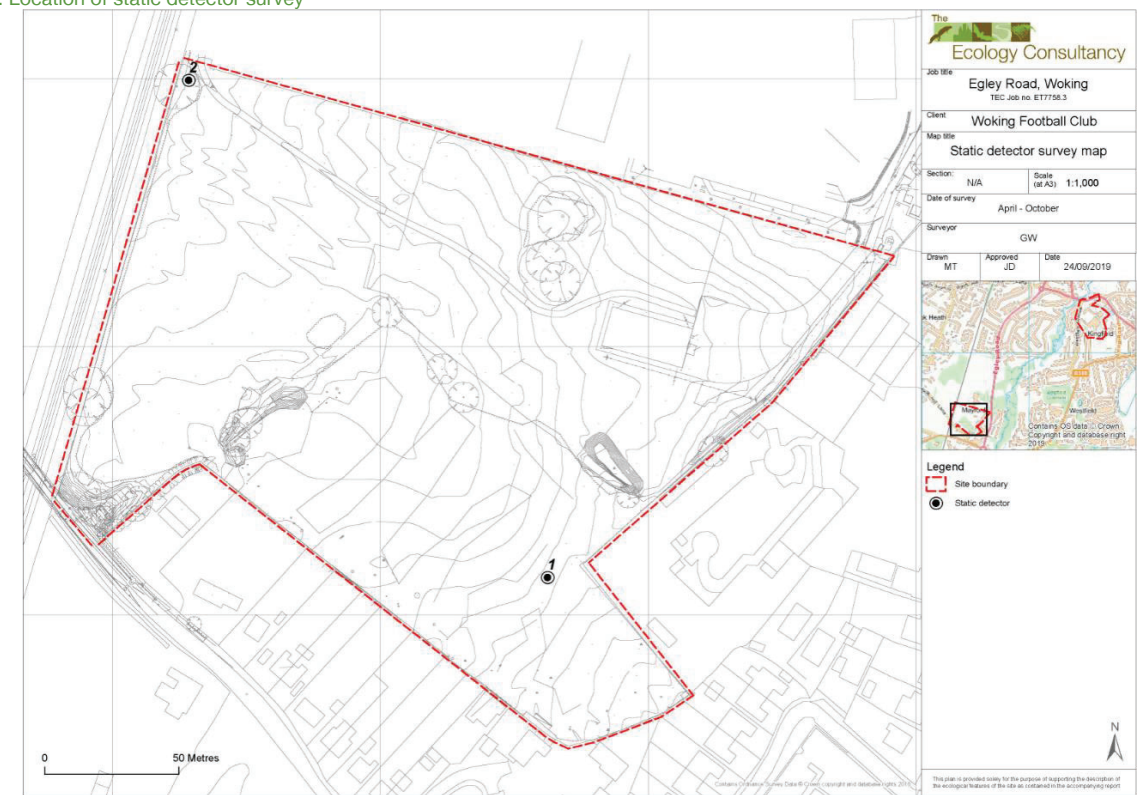
Appendix 1: Habitat Survey Map

Figure 1: Habitat survey map for Egley Road, Woking



Appendix 2: Location of Static Detectors

Figure 2: Location of static detector survey



Appendix 3: Bat Activity Transect Survey Maps

Figure 3: Dusk Activity Transect on 8 April 2019

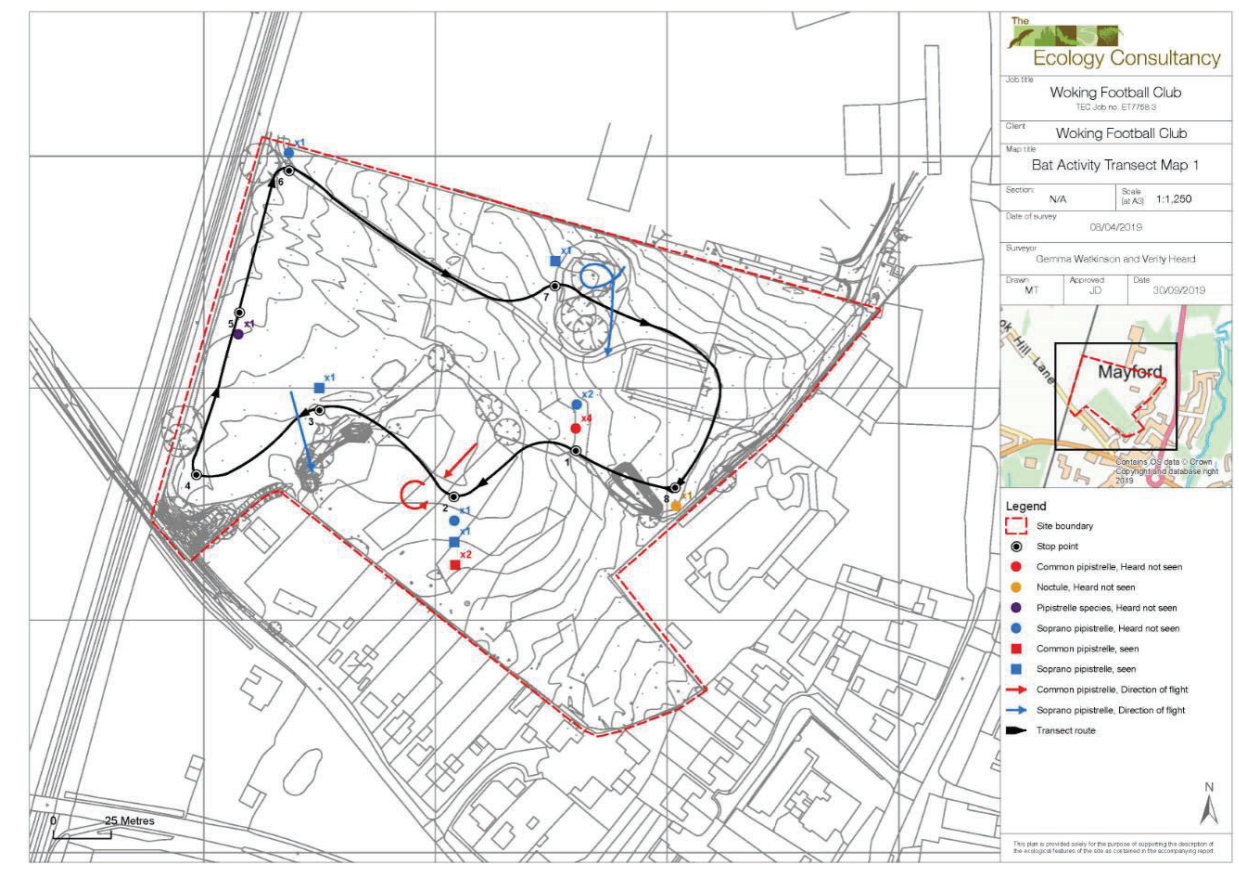


Figure 4: Dusk Activity Transect on 23 May 2019

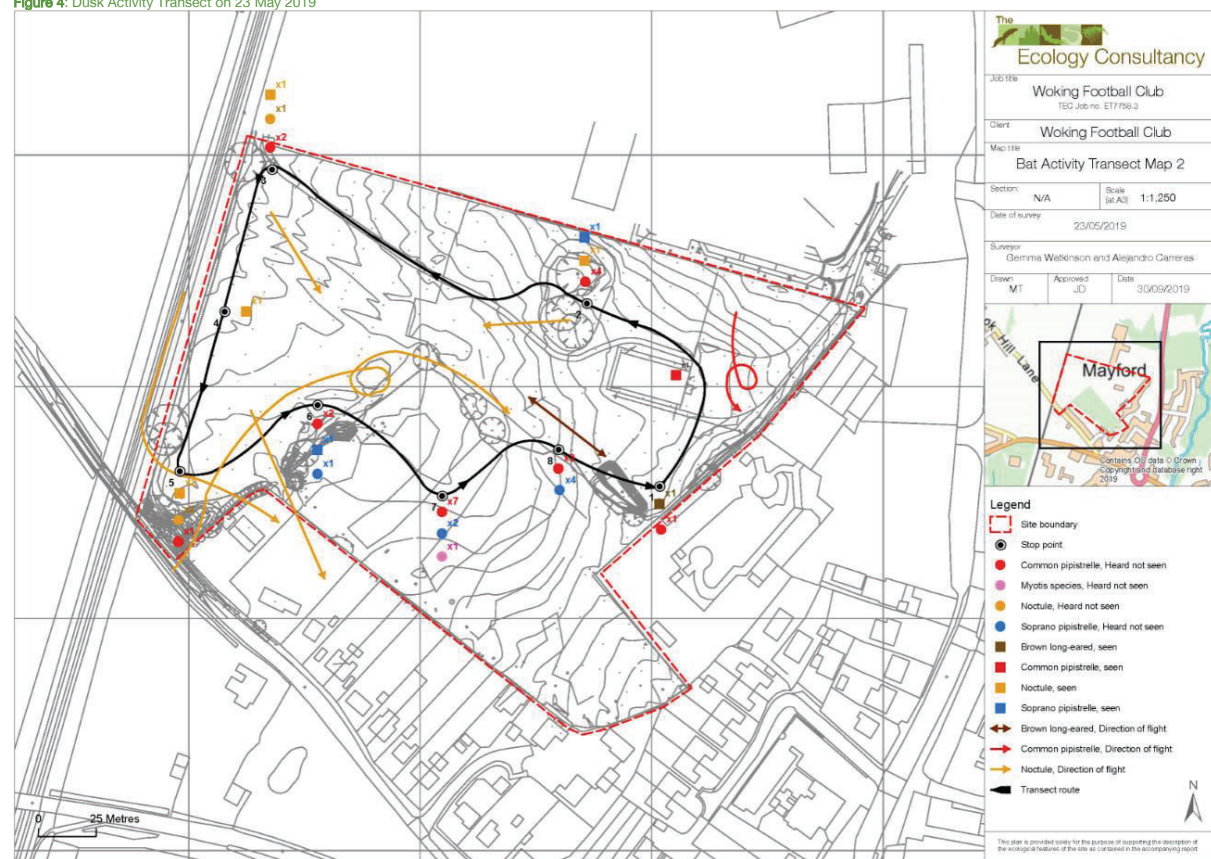


Figure 5: Dusk Activity Transect on 19 June 2019

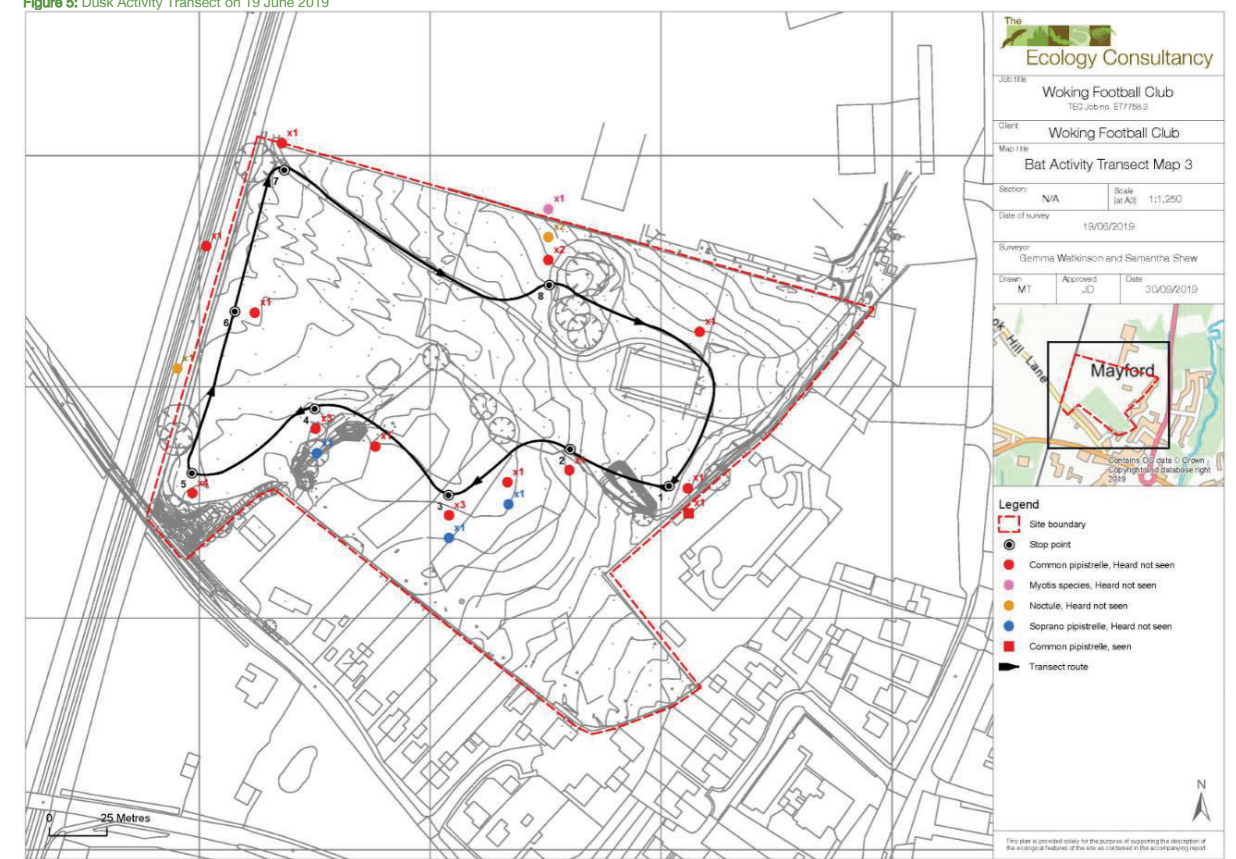


Figure 6: Dusk and Dawn Activity Transect on 15 July 2019

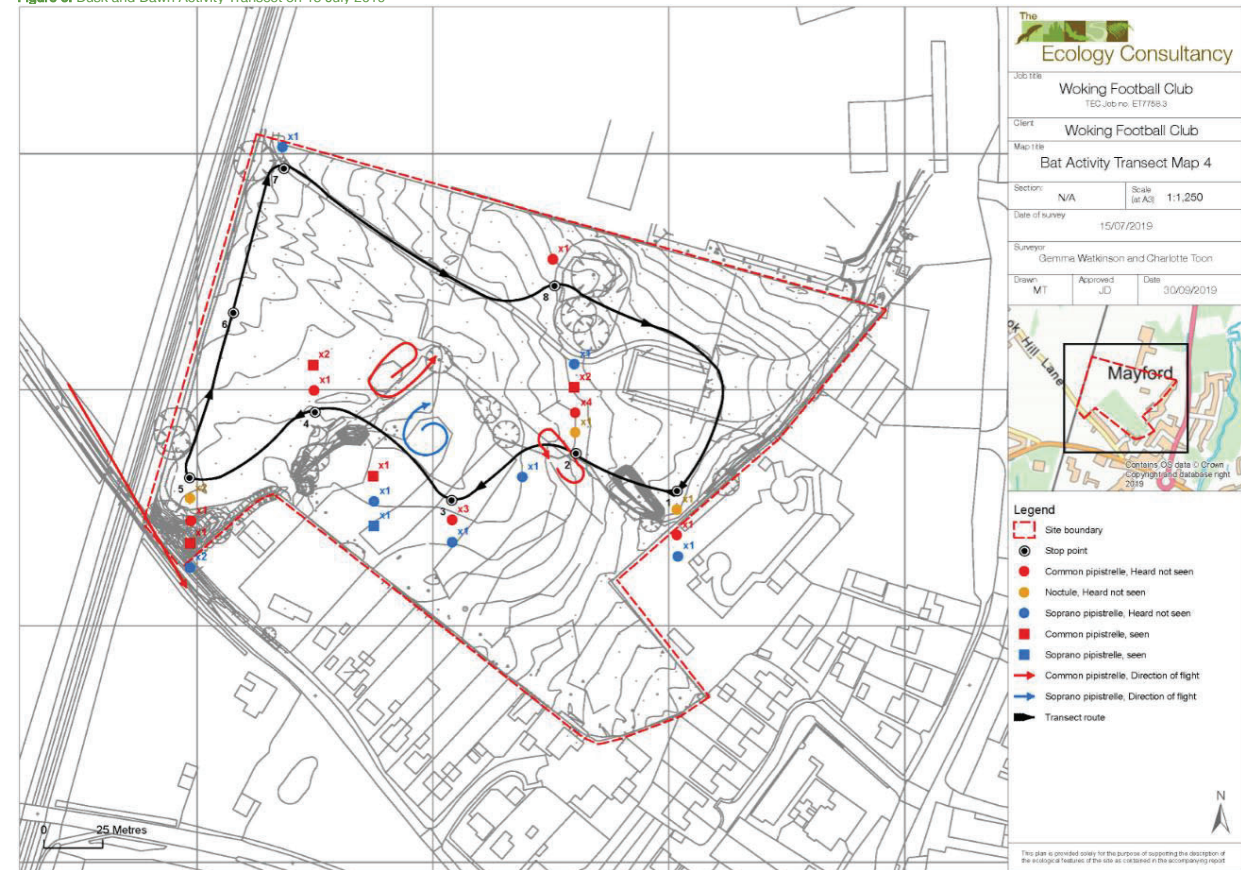


Figure 7: Dusk Activity Transect 6 August 2019

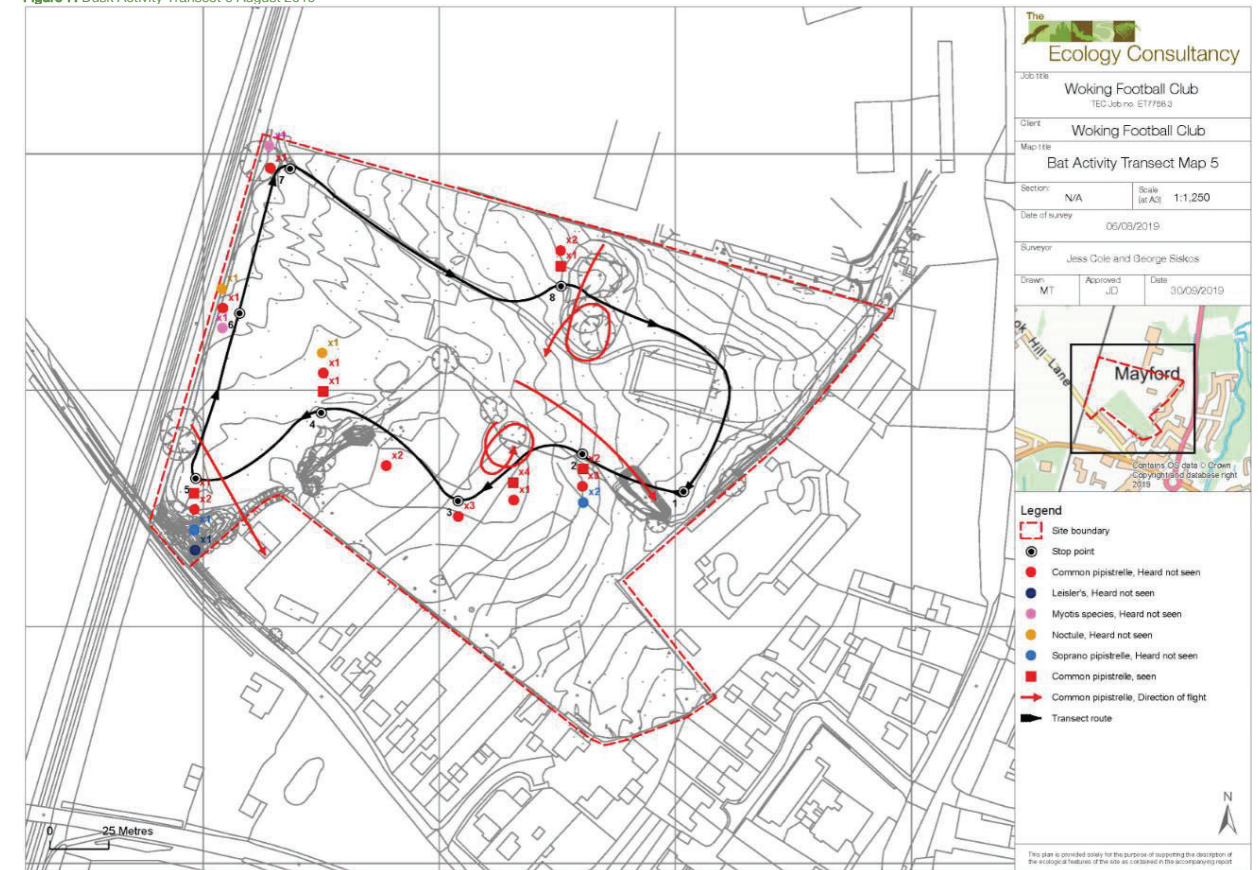


Figure 8: Dusk Activity Transect September 2019

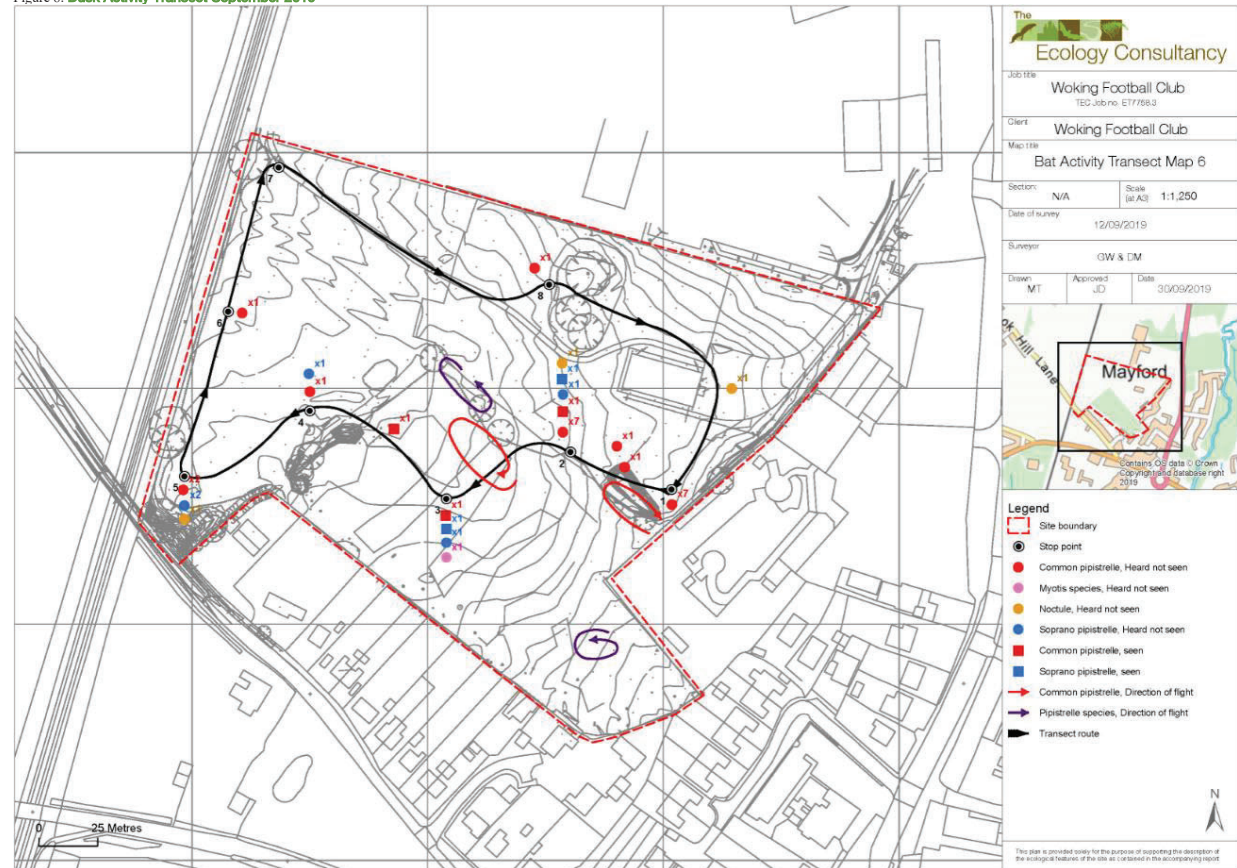
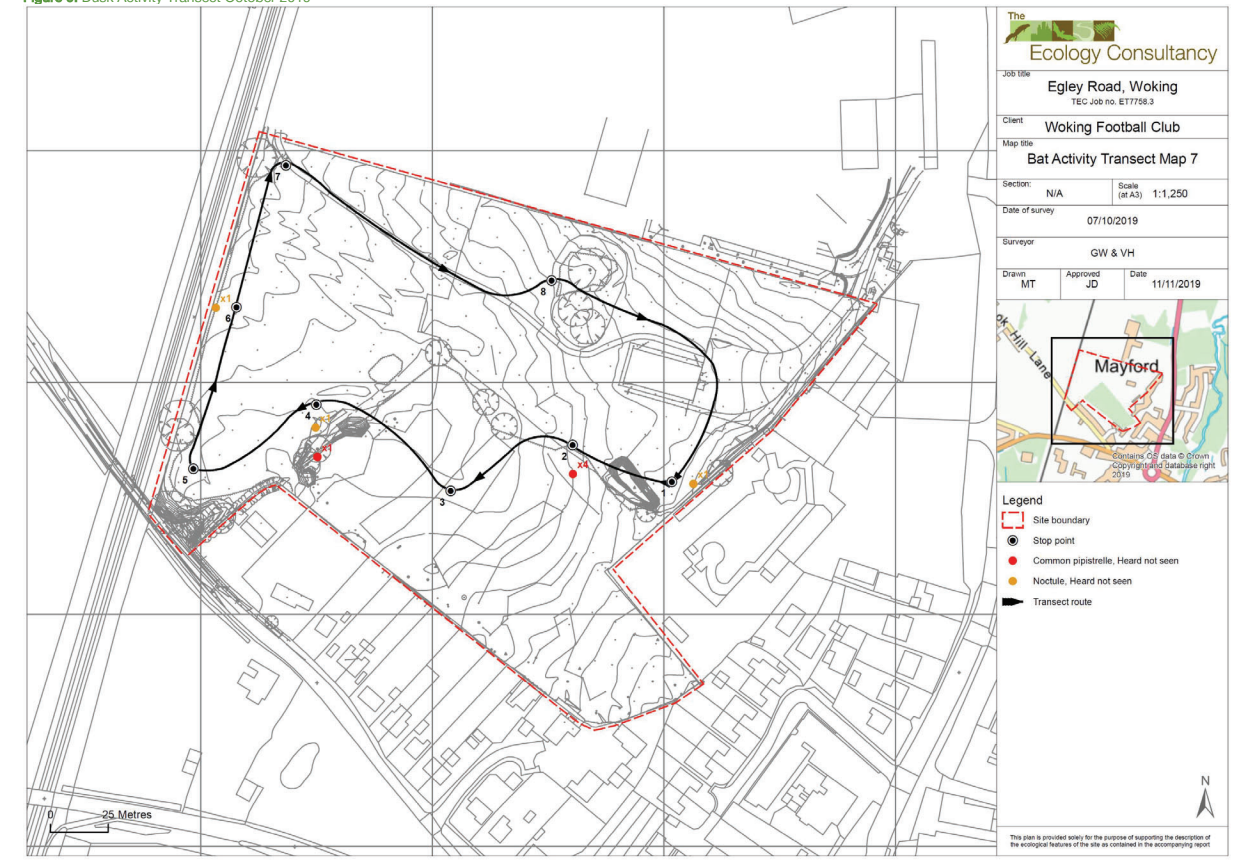


Figure 9: Dusk Activity Transect October 2019



Appendix 4: Transect Survey Data

Table A2.1: Dusk Bat Activity Transect Survey – 8 April 2019

Project		7758.3 Egley Road, Woking		Transect Reference		1	
Surveyor		Verity Heard and Gemma Watkinson		Date		08/04/2019	
Transect number		1		Survey start/end times		19:45 / 21:45	
Sunset/rise time		19:47		Equipment reference		BL001	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499498	156373
General weather conditions		Hazy, mild, still					
Temperature (start and end)	11 / 11	Cloud cover (0-8)	4	Wind (B'fort 0-12)	0	Rain (0-5)	0
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
19:45	1						Arrive at stop 1
19:54	2	SP	1	S	F	Circling	Circling around the woodland canopy
19:54	2	CP	1	NS	F	Unknown	
19:57	2	CP	1	S	F	From north	Joined first bat foraging in woodland canopy then went west
20:00	3						Arrive at stop 3
20:05	4						Arrive at stop 4
20:11	5						Arrive at stop 5
20:16	6						Arrive at stop 6
20:20	6	SP	1	NS	C	Unknown	Probably along railway line
20:23	7						Arrive at stop 7

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
20:30	8						Arrive at stop 8. Light rain shower
20:31	8	N	1	NS	C	Unknown	
20:33	8	N	1	NS	C	Unknown	Sounded like it was going into clutter
20:36	1						Arrive at stop 1
20:37	1	SP	1	NS	F	Unknown	
20:39	1	CP	1	NS	F	Unknown	
20:40	1	SP	1	NS	F	Unknown	
20:42	2						Arrive at stop 2
20:43	2	SP	1	NS	F	Unknown	
20:45	2	CP	1	NS	F	Unknown	
20:46	2						Light rain
20:48	3	SP	1	S	C	South	
20:54	4						Arrive at stop 4
21:00	5	Pip	1	NS	C	Unknown	Not recorded
21:05	5	Sp.	1	NS	C	Unknown	Not recorded
21:06	6						Arrive at stop 6
21:13	7						Arrive at stop 7
21:14	7	SP	1	S	F	Circled	Circled oak tree and went to south
21:20	8						Arrive at stop 8
21:26	1	CP	1	NS	F		Repeat passes until 21:32
21:29	1	CP	1	NS	S		Social calls
21:34	1	CP	1	NS	F		Repeat passes and social call

Table A2.2: Dusk Bat Activity Transect Survey – 23/05/2017

Project	7758.3 Egley Road, Woking		Transect Reference		1		
Surveyor	Gemma Watkinson and Alejandro Carreras		Date		23/05/2018		
Transect number	2		Survey start/end times		20:58 / 22:58		
Sunset/rise time	20:58		Equipment reference		BL25		
Starting grid ref - Easting, Northing	499498	156373	Ending grid ref - Easting, Northing		499469	156435	
General weather conditions	Warm, hot during day, moderate cloud cover, still to gentle breeze						
Temperature (start and end)	18	Cloud cover (0-8)	6	Wind (B'fort 0-12)	1	Rain (0-5)	0
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
20:59	1						Arrive at stop 1
21:05	2						Arrive at stop 2
21:12	3						Arrive at stop 3
21:13	3	N	1	NS	C	Unknown	Not recorded
21:15	3	N	1	S	C	South-east	From railway towards south-east
21:18	4						Arrive at stop 4
21:19	4	N	1	S	C	South-west	Along railway and then west
21:24	5						Arrive at stop 5
21:24	5	N	1	NS	C	Unknown	
21:26	5	N	1	S	C	South	
21:27	5	N	1	NS	C	Unknown	

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:28	5	N	1	S	C, F	South-east	Came from over bridge, foraging circle and then went SE
21:29	5	CP	1	NS	Unknown	Unknown	Not recorded
21:32	6	SP	1	NS	F	Unknown	Several passes in woodland
21:33	6	SP	1	S	F		Constant repeat passes along woodland edge at tree top level, until 21:37
21:38	7						Arrive at stop 7
21:39	7	SP	1	NS	F	Unknown	Several passes
21:40	7	CP	1	NS	F	Unknown	Several passes
21:42	7	CP	1	NS	F	Unknown	Several passes
21:43	7	CP	1	NS	F	Unknown	Several passes
21:45	8						Arrive at stop 8
21:46	8	CP	1	NS	Unknown	Unknown	
21:50	8	SP	1	NS	Unknown	Unknown	
21:52	1						Arrive at stop 1
21:53	1	CP	1	NS	Unknown	Unknown	
21:55	1	BLE	1	S	F	NE-SW	Foraging along edge of woodland

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:58	1-2	CP	1	S	F	East	East, then west then east along woodland edge
22:00	2						Arrive at stop 2
22:01	2	CP	1	NS	Unknown	Unknown	
22:02	2	N	1	S	C	West	
22:05	2	SP	1	S	F, S	Circling	Around trees, social call
22:05	2	CP	1	NS	C	Unknown	Singe pass
22:08	3						Arrive at stop 3
22:10	3	CP	1	NS	C	Unknown	
22:12	3	CP	1	NS	F	Unknown	
22:13	4						Arrive at stop 4
22:19	5						Arrive at stop 5
22:25	6						Arrive at stop 6
22:26	6	CP	1	NS	C	Unknown	Two passes
22:30	6	CP	1	NS	C	Unknown	
22:32	7	SP	1	NS	C	Unknown	
22:32	7	CP	1	NS	Unknown	Unknown	
22:32	7	Myotis sp.	1	NS	Unknown	Unknown	
22:33	7	CP	1	NS	F, S	Unknown	Several passes
22:35	7	CP	1	NS	F	Unknown	
22:36	7	CP	1	NS	F, S	Unknown	
22:38	8	CP	1	NS	F	Unknown	Repeat passes
22:39	8	SP	1	NS	Unknown	Unknown	
22:40	8	CP, SP	2	NS	F	Unknown	Repeat passes
22:42	8	SP	1	NS	F	Unknown	
22:43	8-1	CP	1	NS	F	Unknown	

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
22:46	1						Arrive at stop 1
22:52							Arrive at stop 2
22:53	2	CP	1	NS	F	Unknown	Repeat passes, possibly more than 1 bat
22:55	2	?	1	NS	C	Unknown	Not recorded
22:56	2	CP	1	NS	F, S	Unknown	Repeat passes and social calls
22:59	2						Common pip is still foraging

Table A2.3: Dusk Bat Activity Transect Survey – 19/06/2019

Project		7758.3 Egley Road, Woking		Transect Reference		1	
Surveyor		Gemma Watkinson and Samantha Shaw		Date		19/06/2019	
Transect number		3		Survey start/end times		21:39 / 23:22	
Sunset/rise time		21:22		Equipment reference		BL25	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499515	156392
General weather conditions		Heavy rain for about one hour before sunset, light rain at sunset then stopped approx. 15mins after sunset so survey started. Light rain showers throughout survey with some heavier showers.					
Temperature (start and end)	18 - 16	Cloud cover (0-8)	8	Wind (B'fort 0-12)	1	Rain (0-5)	1-4
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:39	1						Arrive at stop 1
21:40	1	CP	1	NS	C	Unknown	
21:45	1	CP	1	S	F	Circling	Circling around woodland edge
21:46	1-3	CP	1	NS	C	Unknown	
21:48	3						Arrive at stop 3
21:49	3	CP	1	NS	F	Unknown	
21:51	3	CP	1	NS	F	Unknown	
21:53	3	CP	1	NS	F	Unknown	
21:55	3-4	CP	1	NS	F	Unknown	
21:57	4						Arrive at stop 4
22:03	5						Arrive at stop 5
22:05	5						Light rain
22:06	5	CP	1	NS	Unknown	Unknown	
22:09	5	CP	1	NS	Unknown	Unknown	Not recorded
22:09	5-6	N	1	NS	Unknown	Unknown	Not recorded

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
22:10	6						Arrive at stop 6
22:17	6-7	CP	1	NS	Unknown	Unknown	
22:17	7						Arrive at stop 7
22:22	8						Arrive at stop 8
22:24	8	CP	1	NS	Unknown	Unknown	
22:26	8	N	1	NS	Unknown	Unknown	
22:27	8	N	1	NS	C	Unknown	
22:28	1						Arrive at stop 1
22:36	2						Arrive at stop 2
22:39	2	CP	1	NS	F	Unknown	
22:42	2-3	SP	1	NS	F	Unknown	
22:43	3						Arrive at stop 3
22:44	3	SP	1	NS	F	Unknown	
22:49	4						Arrive at stop 4
22:49	4	CP	1	NS	Unknown	Unknown	
22:52	4	CP	1	NS	C	Unknown	
22:52	4	SP	1	NS	C	Unknown	
22:53	4	CP	1	NS	C	Unknown	
22:55	5						Arrive at stop 5
22:56	5	CP	1	NS	C	Unknown	
23:00	5	CP	1	NS	C	Unknown	
23:01	6						Heavier Rain
23:03	6	CP	1	NS	F	Unknown	
23:07	7						Light rain
23:09	7	CP	1	NS	C	Unknown	
23:14	8						Arrive at stop 8
23:16	8	My sp.	1	NS	F	Unknown	
23:18	8	CP	1	NS	F	Unknown	Heavy rain
23:20	8-1	CP	1	NS	F	Unknown	

Table A2.4: Dusk Bat Activity Transect Survey – 15/07/2019

Project		7758.3 Egley Road, Woking		Transect Reference		1	
Surveyor		Gemma Watkinson and Charlotte Toon		Date		15/07/2019	
Transect number		4 a		Survey start/end times		21:13 / 23:13	
Sunset/rise time		21:13		Equipment reference		Batlogger 25	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499437	156373
General weather conditions		Mild, dry, clear skies. Bright, full moon.					
Temperature (start and end)	18 - 13	Cloud cover (0-8)	1	Wind (B'fort 0-12)	1	Rain (0-5)	0
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:13	1						Arrive at stop 1
21:19	2						Arrive at stop 2
21:25	2-3	SP	1	NS	F	Unknown	
21:25	3						Arrive at stop 3
21:26	3	CP	1	NS	F	Unknown	
21:27	3	CP	1	NS	F	Unknown	Repeat passes until 21:30
21:31	3-4	SP	1	S	F	Circling	Foraging within woodland canopy
21:32	3-4	CP, SP	2+	NS	F	Unknown	
21:33	4	Pip sp.	1	S	F	Circling	Repeat passes seen by bat at woodland edge at canopy height, not picked up on batlogger

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:35	4	CP	1	S	F	Circling	At tree tops of woodland edge, approx. 10m high
21:38	4	CP	2	S	F	Circling	Two bats seen at tree tops
21:40	5						Arrive at stop 5
21:43	5	CP	1	S	C	SE	Came from over railway
21:46	6						Arrive at stop 6
21:52	7						Arrive at stop 7
21:59	8						Arrive at stop 8
22:07	1						Arrive at stop 1
22:09	1	CP	1	NS	F	Unknown	Repeat passes
22:13	1	N	1	NS	C	Unknown	
22:15	2						Arrive at stop 2
22:19	2	N	1	NS	C	Unknown	
22:22	3						Arrive at stop 3
22:28	4						Arrive at stop 4
22:34	5						Arrive 5
22:35	5	N	1	NS	C	Unknown	
22:35	5	N	1	NS	C	Unknown	
22:36	5	SP	1	NS	C	Unknown	
22:37	5	CP	1	NS	C	Unknown	
22:39	5	SP	1	NS	C	Unknown	
22:41	6						Arrive at stop 6
22:47	7						Arrive at stop 7
22:50	7	SP	1	NS	C	Unknown	
22:55	8						Arrive at stop 8
22:58	8	CP	1	NS	F	Unknown	
23:01	1						Arrive at stop 1

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
23:04	1	SP	1	NS	C	Unknown	
23:07	2						Arrive at stop 2
23:11	2	CP	1	NS	F	Unknown	
23:12	2	CP	1	NS	F	Unknown	

Table A2.5: Dawn Bat Activity Transect Survey – 16/07/2019

Project		7758.3 Egley Road, Woking		Transect Reference		1	
Surveyor		Gemma Watkinson and Charlotte Toon		Date		16/07/2019	
Transect number		4 b		Survey start/end times		03:04 / 05:04	
Sunset/rise time		05:04		Equipment reference		Batlogger 25	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499406	156350
General weather conditions							
Cool, no rain overnight, damp and dewy under foot							
Temperature (start and end)	11 / 9	Cloud cover (0-8)	0	Wind (B'fort 0-12)	1	Rain (0-5)	0
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
03:04	1						Arrive at stop 1
03:10	2						Arrive at stop 2
03:13	2	SP	1	NS	C	Unknown	
03:14	2	CP	1	NS	F	Unknown	
03:16							Arrived at stop 3
03:19	3	SP	1	NS	C	Unknown	
03:22	4						Arrive at stop 4
03:28	5						Arrive at stop 5
03:34	6						Tawny owl calling from within woodland
03:40	7						Arrive at stop 7
03:47	8						Arrive at stop 8
03:55	1						Arrive at stop 1
04:01	2						Arrive at stop 2
04:02	2	CP	1	NS	F	Unknown	Arrive at stop 2

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
04:05	2	CP	2	S	F	Circling	Above trees
04:07	3						Arrive at stop 2
04:10	3	CP	1	NS	F	Unknown	
04:13	4						Arrive at stop 4
04:17	4	CP	1	NS	C	Unknown	
04:20	5						Arrive at stop 5
04:26	6						Arrive at stop 6
04:32	7						Arrive at stop 7
04:39	8						Arrive at stop 8
04:46	1						Arrive at stop 1
04:52	2						Arrive at stop 2
04:58	3						Arrive at stop 3

Table A2.6: Dusk Bat Activity Transect Survey – 06/08/2019

Project		7758.3 Egley Road Woking			Transect Reference		1	
Surveyor		Jessica Cole and George Siskos			Date		06/08/2019	
Transect number		5			Survey start/end times		20:42 / 22:42	
Sunset/rise time		20:42			Equipment reference		Batlogger	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499471	156446	
General weather conditions		Mild and still						
Temperature (start and end)	21 - 18	Cloud cover (0-8)	1	Wind (B'fort 0-12)	1	Rain (0-5)	0	
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)								
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)								
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes	
20:42	1						Arrive at stop 1	
20:46	2						Arrive at stop 2	
20:47	2	CP	1	S	F	W	Circular foraging 20:49	
20:49	2-3	CP	4	S	F	Circling	Circular foraging for a while	
20:52	3						Arrive at stop 3	
20:52	3	SP	1	NS	F	Circling	Constant foraging for a while	
20:52	3	CP	1-2	NS	F	Unknown	Repeat passes	
20:57	4						Arrive at stop 4	
21:01	5						Arrive at stop 5	
21:01	5	CP	1	S	C	SE		
21:05	6						Arrive at stop 6	
21:12	7						Arrive at stop 7	
21:16	8						Arrive at stop 8	

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
21:22	1						Arrive at stop 1
21:28	2						Arrive at stop 2
21:30	2	CP	1	S	C	W-E	Along treeline
21:30	2	SP	1	NS	Unknown	Unknown	
21:33	2-3	CP	1	NS	F	Unknown	
21:33	3						Arrive at stop 3
21:40	3-4	CP	1	NS	C/F	Unknown	
21:41	3-4	CP	1	NS	C/F	Unknown	
21:41	4						Arrive at stop 4
21:42	4	CP	1	NS	C/F	Unknown	
21:43	4	CP	1	S	F	NE-SW	Along treeline, several passes
21:45	4	N	1	NS	C	Unknown	
21:46	5						Arrive at stop 5
21:47	5	CP	1	NS	F	Unknown	
21:50	5	CP	1	NS	Unknown	Unknown	Faint
21:53	6						Arrive at stop 6
21:54	6	N	1	NS	Unknown	Unknown	
21:55	6	CP	1	NS	Unknown	Unknown	
21:57	7						Arrive at stop 7
21:59	7	Myotis sp.	1	NS	Unknown	Unknown	
22:01	7	CP	1	NS	Unknown	Unknown	
22:05	8						Arrive at stop 8
22:05	8	CP	1	S	F	W	Around trees
22:10	1						
22:15	2						Arrive at stop 2
22:15	2	CP	2	NS	Unknown	Unknown	
22:16	2	SP	1	NS	Unknown	Unknown	
22:16	2	CP	1	NS	Unknown	Unknown	

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
22:19	3						Arrive at stop 3
22:20	3	CP	1	NS	F	Unknown	Few passes
22:22	3	Pip	1	NS	F	Unknown	Few passes
22:24	4						Arrive at stop 4
22:29	5						Arrive at stop 5
22:31	5	Plecotus sp.	1	NS	Unknown	Unknown	
22:32	5	SP	1	NS	Unknown	Unknown	
22:35	6						Arrive at stop 6
22:36	6	Myotis sp.	1	NS	Unknown	Unknown	
22:38	7						Arrive at stop 7
22:39	8						Arrive at stop 8
22:39	8	CP	1	NS	Unknown	Unknown	
22:41	8	CP	1	NS	Unknown	Unknown	

Table A2.7: Dusk Bat Activity Transect Survey – 12/09/2019

Project	7758.3 Egley Road, Woking				Transect Reference	1		
Surveyor	Gemma Watkinson and Denny Moyers				Date	12/09/2019		
Transect number	6				Survey start/end times	19:24 / 21:24		
Sunset/rise time	19:24				Equipment reference	Batlogger 25		
Starting grid ref - Easting, Northing	499498	156373	Ending grid ref - Easting, Northing	499431	156374			
General weather conditions	Overcast, mild, light breeze, dry.							
Temperature (start and end)	19°C	Cloud cover (0-8)	7/8	Wind (B'fort 0-12)	1	Rain (0-5)	0	
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)								
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)								
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes	
19:17			1	S	F	circling	A bat was seen foraging in the woodland before the survey start, while collecting static detector	
19:24	1						Arrive at stop 1	
19:29	2						Arrive at stop 2	
19:30	2	CP	1	NS	Unknown		Brief pass	
19:32	2	CP, SP	2	S	F	circling	Repeat passes at tree top level in woodland	

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
19:36	3	SP, CP	2	S	F	Circling	Repeat passes and feeding buzzes, high and low passes around a clearing within woodland
19:41	3-4	Unknown	1	S	F	Circling	Not recorded. Seen at northern edge of woodland
19:42	4						Arrive at stop 4
19:44	4	SP	1	NS	F/C	unknown	Single pass
19:48	5						Arrive at stop 5
19:49	5	N	1	NS	C	Unknown	
19:51	5	CP	1	NS	F/C	Unknown	
19:53	5	CP	1	NS	C	Unknown	
19:53	5	SP	1	NS	C	Unknown	
19:55	6						Arrive at stop 6
20:00	6	CP	1	NS	Unknown	Unknown	
20:01	7						Arrive at stop 7
20:09	8						Arrive at stop 8
20:15	8-1	N	1	NS	C	Unknown	
20:18	1	CP	1	NS	Unknown	Unknown	
20:21	1	CP	1	NS	S		Social call heard
20:22	1	CP	1	NS	F	Unknown	Repeat passes
20:24	1	CP	1	NS	F, S	Unknown	Repeat passes and social calls, seen occasionally at woodland edge
20:26	1-2	CP	1	NS	F	Unknown	
20:28	2						Arrive at stop 2

Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
20:30	2	CP	1	NS	F, S	Unknown	
20:32	2	N	1	NS	F	Unknown	
20:33	2-3	CP	1	NS	F	Unknown	
20:34	3						Arrive at stop 3
20:36	3	SP	1	NS	Unknown	Unknown	
20:38	3	Myotis sp.	1	NS	Unknown	Unknown	Brief pass
20:38	3	CP	1	NS	Unknown	Unknown	
20:41	4						Arrive at stop 4
20:47	5						Arrive at stop 5
20:50	5	SP	1	NS	C	Unknown	Brief pass
20:53	6						Arrive at stop 6
20:59	7						Arrive at stop 7
21:06	8						Arrive at stop 8
21:07	8	CP	1	NS	C	Unknown	Brief pass
21:14	1	CP	1	NS	F	Unknown	Repeat passes
21:16	1	CP	1	NS	S	Unknown	Social calls
21:17	1	CP	1	NS	S	Unknown	Not recorded
21:18	1	Pip sp.	1	NS	C	Unknown	Not recorded
21:20	2	CP	1	NS	F	Unknown	Repeat passes until end of survey
21:24	2	SP	1	NS	F	Unknown	
21:24	2	CP	2-3	NS	F	Unknown	Repeat passes

Table A2.7: Dusk Bat Activity Transect Survey – 10/10/2019

Project		7758.3 Egley Road, Woking		Transect Reference		1	
Surveyor		Gemma Watkinson and Verity Heard		Date		07/10/2019	
Transect number		7		Survey start/end times		18:27 / 20:27	
Sunset/rise time		18:27		Equipment reference		Batlogger 25	
Starting grid ref - Easting, Northing		499498	156373	Ending grid ref - Easting, Northing		499431	156374
General weather conditions		Overcast, light rain just before sunset, and light rain showers during survey.					
Temperature (start and end)	15°C - 15°C	Cloud cover (0-8)	8	Wind (B'fort 0-12)	1-2	Rain (0-5)	0-1
Species - (CP=common pipistrelle, SP=soprano pipistrelle, LE=long-eared, N=Noctule, S=Serotine, M=Myotis, U=Unknown)							
Activity type - (E = Emergence, R = Return to roost, C = Commuting, F = Foraging, S = Socialising)							
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
18:27	1						Arrive at stop 1
18:33	1	N	1	NS	C	Unknown	
18:34	2						Arrive at stop 2
18:40	3						Arrive at stop 3
18:46	4						Arrive at stop 4
18:48	4	CP	1	NS	F	Unknown	
18:51	4	N	1	NS	C	Unknown	
18:53	5						Arrive at stop 5
18:59	6						Arrive at stop 6
19:00	6	N	1	NS	C	Unknown	
19:05	7						Arrive at stop 7
19:10							Light rain shower started
19:13	8						Arrive at stop 8
19:19	1						Arrive at stop 1

19:24	1						Heavier rain shower
Time	Listening station /Map ref	Species	Number of bats	Seen/not seen (S/NS)	Activity type	Direction of flight	Notes
19:25	2	CP	1	NS	C		
19:26	2	CP	1	NS	S		
19:27	2	CP	1	NS	C		
19:31	3						Arrive at stop 3
19:37	4						Arrive at stop 4
19:43	5						Arrive at stop 5
19:49	6						Arrive at stop 6
19:57	7						Arrive at stop 7
20:05	8						Arrive at stop 8
20:12	1						Arrive at stop 1
20:18	2	CP	1	NS	C		

Appendix 5: Light Measurements Data

Table A2.8: Light Levels (in Lux) during October – Dusk transect 07/10/2019

Time (minutes after sunset)	Location							
	1	2	3	4	5	6	7	8
10-20			Up – 0.6 Down – 0.05 N – 0.3 E – 0.15 S – 0.3 W – 0.3	Up – 3.8 Down – 0.2 N – 1.7 E – 0.8 S – 1.3 W – 1.6				
20-30					Up – 1.2 Down – 0.09 N – 0.5 E – 0.6 S – 0.46 W – 0.2			
30-40						Up – 0.4 Down – 0.1 N – 0.5 E – 0.3 S – 0.15 W – 0.2	Up – 0.3 Down – 0.05 N – 0.65 E – 0.48 S – 0.1 W – 0.1	

40-50								Up - 0.15 Down - 0.03 N - 0.25 E - 0.15 S - 0.03 W - 0.13
50-60	Up - 0.5 Down - 0.01 N - 0.12 E - 0.09 S - 0.03 W - 0.11	Up - 0.14 Down - 0.02 N - 0.28 E - 0.05 S - 0.02 W - 0.17						
60-70			Up - 0.2 Down - 0.00 N - 0.03 E - 0.01 S - 0.00 W - 0.00					
70-80				Up - 0.12 Down - 0.02 N - 0.33 E - 0.15 S - 0.02 W - 0.03	Up - 0.06 Down - 0.01 N - 0.19 E - 0.08 S - 0.02 W - 0.01			

80-90								Up - 0.14 Down - 0.07 N - 0.33 E - 0.29 S - 0.04 W - 0.02
90-100								Up - 0.02 Down - 0.04 N - 0.56 E - 0.51 S - 0.05 W - 0.03
100-110	Up - 0.08 Down - 0.01 N - 0.09 E - 0.07 S - 0.02 W - 0.07							
110-120				Up - 0.08 Down - 0.00 N - 0.23 E - 0.05 S - 0.01 W - 0.12				

Appendix 6: Legislation

Important Notice: This section contains details of legislation applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive¹ is to conserve the various species of plant and animal which are considered rare across Europe. Under Annex 2 it sets out which bat species can have Special Areas of Conservation designated for them including, Greater horseshoe, Lesser horseshoe, Barbastelle and Bechstein's. 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) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife and Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CROW) Act 2000 (as amended).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Countryside and Rights of Way Act 2000
- Natural Environment and Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992

¹ Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

- Wild Mammals (Protection) Act 1996

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, hazel dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2017 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, hazel dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2017 (as amended) does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests': i) the action(s) are necessary for the purpose of preserving public health or safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Bats

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:
 - a) to impair their ability:

(i) to survive, breed, or reproduce, or to rear or nurture young;

(ii) to hibernate or migrate³

b) to affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected 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
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species Mitigation licence issued by the relevant countryside agency (e.g. 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 those activities mentioned above (survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to ensure appropriate mitigation measures be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost².

² Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. 150. The Mammal Society, Southampton.



Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 W. www.ecologyconsultancy.co.uk E. enquiries@ecologyconsultancy.co.uk

■ **Sussex** - The Old Dairy, Barcombe Mills Road, Lewes, East Sussex BN8 5FF T. 01273 813739
■ **East Anglia** - Thorpe House, 79 Thorpe Road, Norwich NR1 1UA T. 01603 628408
■ **Midlands** - 9 The Mews, Trent Park, Eastern Avenue, Lichfield WS13 6RN T. 01543 728971
■ **North** - Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR T. 01924 683558
■ **Scotland** - 3 Coates Place, Edinburgh Scotland EH3 7AA T. 0131 225 8610

Annex 5: Great Crested Newt Assessment Report

Egley Road, Woking

Great Crested Newt Survey

Report for Woking Football Club

Author	Gemma Watkinson MBiolSci (Hons) ACIEEM		
Job No	7758.3		
Version	Date	Checked by	Approved by
1.0	11/07/2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	Wendy McFarlane MA MSc MCIEEM
2.0	13/11/2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	
3.0	20/11/2019	Demian Lyle BSc (Hons) MSc DIC MCIEEM	



Contents

1	Introduction	2
2	Legislation	4
3	Methodology	6
4	Survey Results	10
5	Conclusions and Recommendations	11
	References	12
	Appendix 1: Pond Location Map	14
	Appendix 2: Habitat Suitability Index Assessment Results	16

LIABILITY

The Ecology Consultancy has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of The Ecology Consultancy. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by The Ecology Consultancy, unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of The Ecology Consultancy. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy, part of the Temple Group, is the trading name of Ecology Consultancy Ltd.

Executive Summary

The Ecology Consultancy was commissioned by Woking Football Club to conduct Habitat Suitability Index (HSI) assessments and an eDNA survey of ponds within 500 metres of the proposed development at Egley Road, Woking. These were conducted to inform the requirement for further great crested newt surveys.

The main findings of the survey work were as follows:

- The data search returned four records of great crested newt from within 2 kilometres (km) of the survey site. The most recent record dates from 2016 and the records are to an accuracy of 1km only (The Ecology Consultancy, 2019).
- The proposed development site included woodland, scrub and semi-improved grassland. These habitats offered foraging, commuting, refuge and hibernation opportunities for great crested newts.
- One pond is located within 500m of the proposed works area (Appendix 1, Figure 1) and was assessed using the Habitat Suitability Index (HSI) methodology outlined in National Amphibian and Reptile Recording Scheme (NARRS 2009, based on Oldham *et al.*, 2000) on 15 April 2019. The pond is located approximately 90 metres (m) south of the site boundary (The Ecology Consultancy, 2019) and was calculated to have an average probability of great crested newt occurrence.
- An eDNA survey was undertaken on 15 April 2019 following methodology accepted by Natural England (Biggs *et al.*, 2014), which returned a negative result.
- Great crested newts were considered likely to be absent from the terrestrial habitats on-site. No further survey or mitigation in respect of this species is required.

1 Introduction

BACKGROUND

- 1.1 The Ecology Consultancy was commissioned by Woking Football Club to undertake a Habitat Suitability Index Assessment (HSI) and an Environmental DNA (eDNA) survey for great crested newt on a pond located approximately 90 metres (m) to the south of the site boundary of land at Egley Road, Woking (hereafter referred to as 'the site').
- 1.2 A Preliminary Ecological Appraisal carried out by The Ecology Consultancy in February 2019 identified suitable refuge and foraging habitat on land at Egley Road, Woking, and off-site waterbodies suitable for breeding within a commutable distance of the site boundary (The Ecology Consultancy, 2019). There are no ponds on site.

SCOPE OF THE REPORT

- 1.3 This report provides an assessment of the presence/likely absence of great crested newts in ponds within 500m¹ of the site boundary. Where applicable, any potentially significant ecological constraints that may affect the proposals, such as seasonal constraints and the need to apply for a European Protected Species Mitigation (EPSM) licence prior to the commencement of works are also discussed together with detailed recommendations for habitat mitigation measures that should be followed prior to, during and post development.

SITE CONTEXT AND STATUS

- 1.4 The proposed development site is approximately 4.1 hectares (ha) in size and is centred on Ordnance Survey National Grid reference SU 99416 56408. The site lies off Egley Road, on the outskirts of Woking, in Surrey. The site currently comprises open field, with one building located in the north-east of the site. There is a large area of trees in the southern portion of the site and access to the site is via a small road off of Egley Road (A320), located to the east of the site. The site is not subject to any statutory or non-statutory nature conservation designations. The site is bordered by a school and sports facility to the north, a railway line to the west, a garden centre and business properties to the east, and residential dwellings and gardens to the south. The wider landscape comprises grassland fields with hedgerows and woodland to the west,

further residential dwellings and Mayford Meadows Local Nature Reserve to the east of Egley Road, and further residential properties, a school, grassland and scattered trees in the wider landscape to the south.

DEVELOPMENT PROPOSAL

- 1.5 The proposals are for the Redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road serving Hoe Valley School.

¹ Great crested newts typically use a network of ponds for breeding each year and guidelines state that animals may travel up to 500m to commute between ponds and terrestrial habitat (English Nature, 2001)

2 Legislation

2.1 The great crested newt *Triturus cristatus* receives full protection under The Conservation of Habitats and Species Regulations 2017 through their inclusion on Schedule 2. This legislation prohibits:

- Deliberate killing, injuring or capturing
- Deliberate disturbance:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young;
 - (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate
 - b) to affect significantly the local distribution or abundance of the species
- Deliberate taking or destroying of the eggs
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

2.2 The great crested newt is 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
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

2.3 A European Protected Species Mitigation (EPSM) licence issued by the relevant countryside agency (i.e. Natural England) will be required for works liable to affect the breeding sites or resting places of great crested newts protected under The Conservation Habitats and Species Regulations 2017. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to

enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

3 Methodology

HABITAT SUITABILITY INDEX ASSESSMENT

- 3.1 All waterbodies within 500m of the site boundary were identified from an Ordnance Survey map and ground truthing surveys, with further clarification from the previous Ecological Appraisal report (The Ecology Consultancy, 2019). Ponds and waterbodies within 500m considered to be separated from the site by a significant barrier to dispersal of great crested newt were not included for further survey.
- 3.2 A survey was conducted of one pond located within 500m of the site (Appendix 1, Figure 1). The survey was carried out in order to collect data with which to calculate a Habitat Suitability Index (HSI) score for the pond. The pond was visited on the 15 April 2019 and environmental data collected using the methods described in the National Amphibian and Reptile Recording Scheme (NARRS, 2009 based on Oldham *et. al.*, 2000).
- 3.3 The HSI assessment methodology uses ten key habitat criteria and was based on the assumption that habitat quality determines great crested newt population size (Oldham *et. al.*, 2000). The criteria are as follows:
- SI1 = geographic location;
 - SI2 = pond area;
 - SI3 = pond permanence;
 - SI4 = water quality;
 - SI5 = pond shading;
 - SI6 = number of waterfowl;
 - SI7 = occurrence of fish;
 - SI8 = pond density;
 - SI9 = proportion of ‘newt friendly’ habitat; and
 - SI10 = macrophyte (aquatic plant) content.

3.4 The HSI score is a geometric mean and is derived using the following equation:

$$HSI = (SI_1 * SI_2 * SI_3 * SI_4 * SI_5 * SI_6 * SI_7 * SI_8 * SI_9 * SI_{10})^{1/10}$$

- 3.5 The results of the HSI calculation were compared to categorised HSI scores used by the National Amphibian and Reptile Recording Scheme (Oldham *et. al.*, 2000) to identify the probability of a pond supporting great crested newts. The five categories are summarised in Table 1 below and survey data is provided in Appendix 3.

Table 1: HSI Categories

Habitat Quality	HSI Score
Poor	Below 0.5
Below average	0.5-0.59
Average	0.6-0.69
Good	0.7-0.79
Exceptional	Above 0.8

(Extracted from Oldham *et al.*, 2000)

ENVIRONMENTAL DNA SURVEY

- 3.6 The eDNA survey was undertaken on 15 April 2019 by Demian Lyle, an experienced ecologist who holds a Natural England great crested newt class licence for survey. The survey followed the methodology set out in ‘Technical advice note for field and laboratory sampling of great crested newt environmental DNA’ (Biggs *et al.*, 2014), which is an appendix of the report published by Defra into eDNA testing for great crested newts, and is the only methodology accepted by Natural England for this technique.
- 3.7 The pond held water at the time of the survey (see Appendix 1 – Figure 1 for the location). The eDNA survey included the following sampling information:
- Site name;
 - Nearest settlement;
 - County;
 - Time between receipt of sampling kit and date of sampling;
 - Date of sampling;
 - Personnel collecting sample;
 - Ordnance Survey grid reference (12 figures);
 - Percentage of pond perimeter accessible for survey;

- Data on inflows (and whether these were wet or dry at time of survey);
- Data on any great crested newts recorded on survey; and
- Information on any difficulties experienced during sample collection.

3.8 Using the current guidance, the following methodology for the sampling procedure for eDNA analysis was applied in the field:

- Twenty samples of 30ml each were taken from around the pond, as equally spaced as possible. The locations of the samples were chosen to sample the entire margin of the pond, with areas targeted where there may be newt egg laying and/or displaying activities;
- The sample ladle was stirred gently in the pond before the sample was retrieved in order to mix the water column, with care being taken not to stir up the sediment;
- All 20 samples were emptied into a Whirl-Pack bag, which was then sealed and mixed for 10 seconds;
- Upon mixing, approximately 15ml of the sample was transferred from the Whirl-Pack bag into each of the six sterile tubes, which contained 35ml of ethanol to preserve the eDNA, using a sterile pipette. The sample was stirred between filling each tube to homogenize the water;
- Once filled to 50ml, each tube was mixed for 10 seconds to mix the sample and preservative; and
- Samples were returned to the refrigerator and stored at 2-4°C.

3.9 The following precautions were adhered to, which ensured that no cross contamination of samples occurred:

- Sterile gloves were worn by all surveyors at all times during the sampling process;
- Gloves were replaced with a new pair of gloves between sample collection from the pond and pipetting into the sub-sampling tubes; and
- Samples were collected without the surveyor entering the water (i.e. the surveyors stood on the pond bank or edge).

3.10 The Ecology Consultancy works in partnership with Nature Metrics Ltd eDNA testing service. The samples were analysed by Nature Metrics Ltd following Natural England's published protocol (Biggs et al., 2014).

LIMITATIONS

3.11 It should be noted that, whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment. It is considered that this report accurately reflects the habitats present, their biodiversity values and the potential of the site to support great crested newts.

4 Survey Results

DESK STUDY

- 4.1 The closest EPSM licence for great crested newts to the site was 2014-2994-EPS-MIT located 4.2km to the north-east. This licence was granted for the damage and destruction of a resting place, between September 2014 and May 2015.
- 4.2 The data search returned a total of four desk study records for great crested newt within 2km of the site. The most recent record dates from 2016 and the records are to an accuracy of 1km only, from within the grid squares TQ0055, TQ0056, TQ0156 and SU9856.

HABITAT SUITABILITY INDEX ASSESSMENT

- 4.3 Full tabulated results for the HSI of the surveyed waterbody is provided in Appendix 2 of this report. A short description of the waterbody is provided below.

Pond 1 – Average suitability

- 4.4 Pond 1 (Appendix 2, Table 1) was located approximately 90m south of the site boundary. It was located within a small area of public openspace. It was a small and shallow pond, which was partially dry at the time of the survey. The pond had approximately 65% macrophyte cover, predominantly reeds and rushes at the margins, and it was only 25% shaded. Waterfowl use was minor, and fish were likely absent from the pond, and the water quality was moderate.
- 4.5 The calculated HSI score for this pond was **0.60** which equates to an **average** habitat suitability and therefore **moderate** probability of great crested newts being present (Oldham *et. al.*, 2000).

ENVIRONMENTAL DNA SURVEY

- 4.6 The pond to the south of the site (Pond 1) returned a negative result for the eDNA analysis (see Appendix 3 for the report returned from Nature Metrics). It is therefore taken that great crested newt is likely to be absent from the off-site pond.

5 Conclusions and Recommendations

CONCLUSIONS

- 5.1 The results of the HSI Assessment indicate that Pond 1 located approximately 90m south of the site has average suitability to support great crested newt. The environmental DNA survey indicates that great crested newts are likely to be absent from the pond.
- 5.2 It can therefore be concluded that the terrestrial habitats on site are unlikely to support great crested newts in their terrestrial phase. As such no further survey or mitigation is required for this species.

RECOMMENDATIONS

- 5.3 Whilst the site was considered unlikely to support great crested newt, if any unexpected discoveries of this species are made on site during the proposed works, then all activities on site should be halted and further advice sought from a suitably qualified ecologist.

References

Amphibian and Reptile Groups of the UK (May 2010) ARG Advice Note 5- Great Crested Newt Habitat Suitability Index

Beebe, T. & Griffiths, R. (2000). *Amphibians and Reptiles – A Natural History of the British Herpetofauna*. HarperCollins, London.

Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dun F. (2014) *Analytical and methodological development for improved surveillance of the great crested newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA*. Freshwater Habitats Trust, Oxford.

Buckley J. & Inns H., (1998). Chapter 2: *Field identification, sexing and aging, in Herpetofauna Worker's Manual*, Gent T. and Gibson S., Joint Nature Conservation Committee, Peterborough.

English Nature (2001) *Great crested newt mitigation guidelines*. English Nature, Peterborough

Gent, T. & Gibson, S. (2003). *Herpetofauna Workers Manual*. Joint Nature Conservancy Council, Peterborough UK.

Griffiths R. & Inns H. (1998). Chapter 1: *Surveying, in Herpetofauna Worker's Manual*, Gent T. and Gibson S., Joint Nature Conservation Committee, Peterborough.

Herpetofauna Groups of Britain and Ireland (HGBI) (1998). *Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards*. HGBI advisory notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth. Unpubl.

Her Majesty's Stationary Office (1981) *The Wildlife and Countryside Act (WCA)* (as amended).

Her Majesty's Stationary Office (2000) *The Countryside and Rights of Way Act (CRoW)*.

Her Majesty's Stationary Office (2017) *The Conservation of Habitats and Species Regulations 2017*.

Langton, T.E.S., Beckett, C.L, and Foster, J.P. (2001), *Great Crested Newt Conservation Handbook*, Froglife, Halesworth.

Natural England (2001). *Great Crested Newt Mitigation Guidelines*. Natural England, Peterborough, UK.

Natural England (2019). *Great crested newts: district level licensing schemes*. Available online: <https://www.gov.uk/government/publications/great-crested-newts-district-level-licensing-schemes>

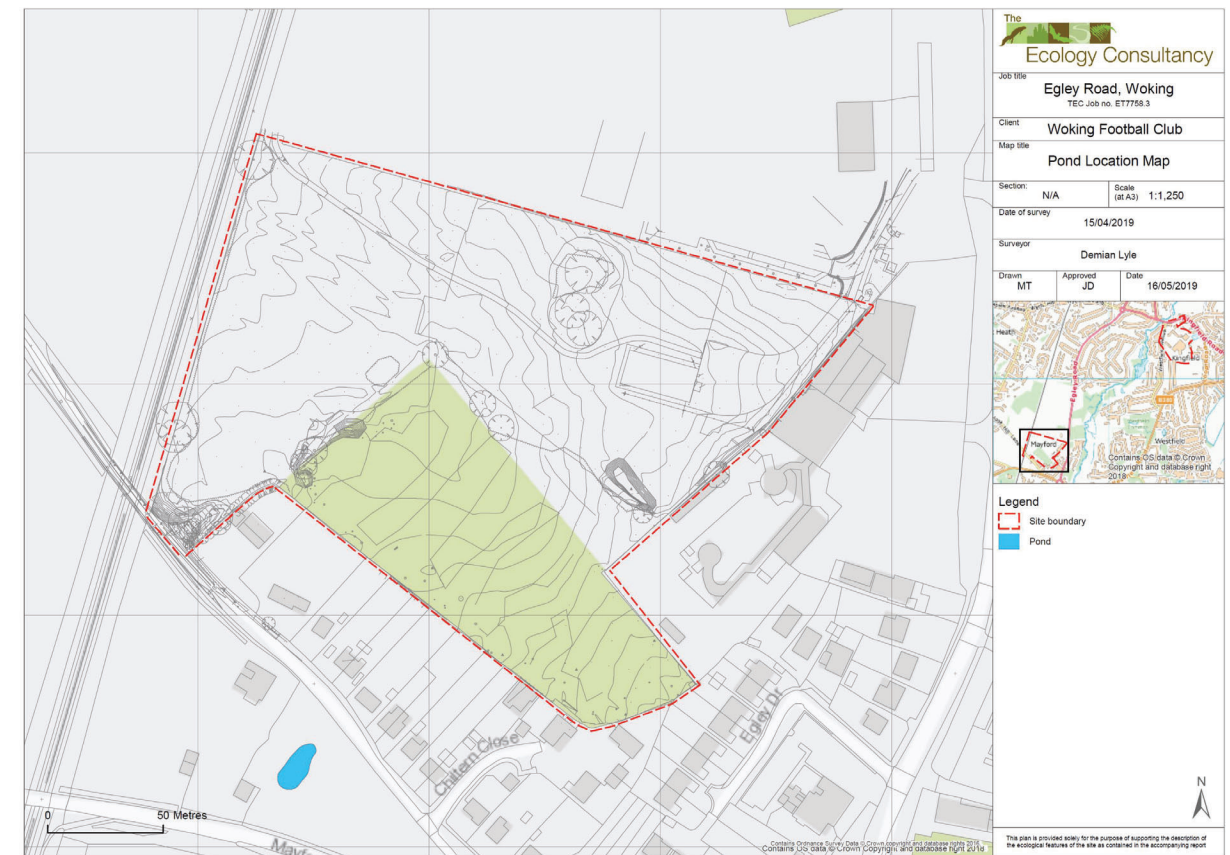
Nature Metrics (2019). Great Crested Newt eDNA Results. Report 19038-TEC-DL-1. Order number TEC-19009-DL.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

The Ecology Consultancy (2019). *Egley Road, Woking: Preliminary Ecological Appraisal*. Report for Woking Football Club. Reference 7758.


Appendix 1: Pond Location Map

Figure 1: Pond location map.



Appendix 2: Habitat Suitability Index Assessment Results

Table 1: Habitat Suitability Index assessment for Pond 1

Pond Number: 1	
Grid reference: SU 99341 56236	
Pond location: 90m south	
Pond Description	
A small pond with shallow water and was partially dry. Reeds and rushes were present around the margins.	

Pond 1 HSI Assessment Results

	SI value	
SI1. Map location	A	1.00
SI2. Surface area (m ²)	60	0.10
SI3. Desiccation rate	Sometimes	0.50
SI4. Water quality	Moderate	0.67
SI5. Shade % of margin shaded 1m from bank	25%	1.00
SI6. Waterfowl	Minor	0.67
SI7. Fish population	Absent	1.00
SI8. Pond density within 1km	1	0.43
SI9. Terrestrial habitat	Moderate	0.67
SI10. Macrophyte cover %	65%	0.95
	HSI score	0.6
	Pond suitability	Average



Report: 19038-TEC-DL-1 Order number: TEC-19009-DL

Great Crested Newt eDNA Results

Company: The Ecology Consultancy
Contact: Demian Lyle
Project code | Task code: Egley Road, Woking - 7758.3 | 2019 GCN eDNA - 7758.3
Date of Report: 26 April 2019
Number of samples: 1

Thank you for sending your sample for analysis by NatureMetrics. Your sample has been processed in accordance with the protocol set out in Appendix 5 of Biggs et al. (2014).

DNA was precipitated via centrifugation at 14,000 x g and then extracted using Qiagen Blood and Tissue extraction kits.

qPCR amplification was carried out in 12 replicates per sample, using the primers and probe described by Biggs et al. (2014), in the presence of both positive and negative controls.

Results indicate GCN absence in 'E1'. Inhibition was detected, which was overcome by diluting the DNA. All controls performed as expected and so the results are conclusive.

Results are based on the samples as supplied by the client to the laboratory. Incorrect sampling methodology may affect the results. Note that a negative result does not preclude the presence of Great Crested Newts at a level below the limits of detection.

Sample	Pond ID	Arrived	Inhibition	Degradation	Score	GCN status
405	'E1'	17-Apr	No	No	0	Negative after dilution

End of report

Report issued by: Dr. Cuong Tang

Contact: ct@naturemetrics.co.uk | 01491 829042



NatureMetrics Ltd, CABI site, Bakeham Lane, Egham, Surrey, TW20 9TY

Appendix 3: Environmental DNA Survey -Nature Metrics Report



Understanding your results

- Positive:** GCN DNA has been detected in this sample, meaning that at least one of the 12 replicates has amplified. Remember that this is not a quantitative test, so you should not interpret a high eDNA score (e.g. 12/12) as necessarily indicating a larger population of GCN than a low eDNA score (e.g. 1/12).
- Negative:** No GCN DNA has been detected in this sample, and the internal and external controls worked as expected. This tells us that if there had been GCN DNA in the sample, we would have detected it, so we can be confident in its absence from the sample provided. Samples marked as 'Negative after dilution' are those where inhibition was detected (when the marker added in the lab fails to amplify) but overcome by diluting the DNA. Inhibition can be caused by certain chemicals or organic compounds that may be present in the water sample.
- Inconclusive:** No GCN DNA was detected in the sample, but the internal controls failed to amplify as expected. This means that any GCN DNA in the sample might also have failed to amplify properly, so we cannot have confidence in this negative result. Inconclusive results can be caused by degradation of the DNA (when the DNA marker contained in the ethanol in the kits fails to amplify) or by inhibition of the reaction (when the marker added in the lab fails to amplify) caused by certain chemicals or organic compounds that may be present in the water sample.



NatureMetrics Ltd, CABI site, Bakeham Lane, Egham, Surrey, TW20 9TY



Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 W. www.ecologyconsultancy.co.uk E. enquiries@ecologyconsultancy.co.uk

- **Sussex** - 3 Upper Stalls, Iford, Lewes, East Sussex BN7 3EJ T. 01273 813739
- **East Anglia** - 60 Thorpe Road, Norwich, Norfolk NR1 1RY T. 01603 628408
- **Midlands** - 1-2 Trent Park, Eastern Avenue, Lichfield, Staffordshire WS13 6RN T. 01543 229049
- **North** - Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR T. 01924 683558

Annex 6: Reptile Survey Report

Egley Road, Woking

Reptile Survey

Report for Woking Football Club

Job Number	7758.3				
Author	Gemma Watkinson MBiolSci (Hons) ACIEEM				
Version	Checked by	Approved by	Date	Type	
1.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM	Wendy McFarlane MA MSc MCIEEM	24/09/2019	Initial	
2.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		13/11/2019	Revision	
3.0	Demian Lyle BSc (Hons) MSc DIC MCIEEM		20/11/2019	Revision	



Contents

Executive Summary	1
1 Introduction	2
2 Legislation	4
3 Methodology	5
4 Survey Results	9
5 Conclusions and Recommendations	11
References	15
Appendix 1: Habitat Map	16
Appendix 2: Reptile Survey Results	18
Appendix 3: Photographs	20
Appendix 4: Hibernacula Specification	23
Appendix 5: Woking Borough Local Planning Policy	25

LIABILITY

The Ecology Consultancy has prepared this report for the sole use of the commissioning party in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party without the prior written permission of The Ecology Consultancy. The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by The Ecology Consultancy, unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of The Ecology Consultancy. Any unauthorised reproduction or usage by any person is prohibited. The Ecology Consultancy, part of the Temple Group, is the trading name of Ecology Consultancy Ltd.

Executive Summary

The Ecology Consultancy was commissioned by Woking Football Club to undertake a reptile survey on land at Egley Road, Woking, where a new residential development and leisure facility are proposed. The aim of the survey was to determine the presence or likely absence of widespread reptiles and if present, to establish a population estimate and distribution of reptiles across the site.

The survey included an assessment of any ecological constraints applying to the proposed development and recommendations for enhancing the habitat on site for reptiles. The main findings of the surveys were as follows:

- The site contained habitats with the potential to support widespread reptile species in the form of a mosaic of broadleaf woodland, semi-improved grassland, amenity grassland, areas of continuous scrub, continuous bracken and scattered trees. There are also many suitable refuges on site including piles of timber and discarded materials around the woodland edges.
- Seven survey visits were made between July and mid-September 2019.
- One common lizard was recorded on the site during one of the September visits. Low populations (HGBI, 1998) of common lizard were therefore likely present on site.
- No other species of reptile were recorded at the site and were therefore considered to be likely absent.
- In addition, common frog was also recorded on site on three occasions.
- In order to comply with the legislation afforded to reptiles, consideration must be given to the protection of these species as part of the development proposals. As works are due to impact suitable habitats, a thorough and phased mitigation strategy in the form of reptile displacement must be adopted. This will require habitat manipulation, and a destructive search.
- Please note that the identification of a suitable receptor site is not deemed to be necessary, as adjacent off-site habitat is suitable and the favourable conservation status of reptiles would be unaffected by displacing small numbers into this area.
- Recommended habitat creation and improvement measures for reptiles are described in Section 5, and include habitat retention and the installation of log piles/hibernacula.

1 Introduction

BACKGROUND

- 1.1 A Preliminary Ecological Appraisal (PEA) carried out in February 2019 (The Ecology Consultancy, 2019) indicated that habitats suitable to support widespread reptile species were present on the proposed development site at Egley Road, Woking, in Surrey (hereon referred to as 'the site').
- 1.2 Following the conclusions of the PEA, The Ecology Consultancy was subsequently commissioned by Woking Football Club to carry out a reptile presence / likely absence survey within the site.

SCOPE OF THE REPORT

- 1.3 This report provides an assessment of the status of reptiles on site, information on their presence or likely absence and if present, their population size-class and distribution. Any potentially significant ecological constraints that may affect the proposals are also discussed. This appraisal is based on the following information sources:
 - a Preliminary Ecological Appraisal of the site to identify and map the habitats present, including a desk study of the site and land within a 2 kilometre (km) surrounding radius (The Ecology Consultancy, 2019); and
 - the results of targeted reptile surveys on site.
- 1.4 This report has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM) and as detailed in British Standard 42020:2013 Biodiversity - Code of Practice for Biodiversity and Development (BSI, 2013).
- 1.5 A habitat map of the site is provided in Appendix 1, and a map showing the locations of the refuges that were deployed and where reptiles were recorded is provided in Appendix 2. Representative photographs of natural refuges on site and the placement of artificial refuges are provided in Appendix 3. Examples of hibernacula are detailed in Appendix 4. Relevant sections of the Woking local planning policy are in Appendix 5.

SITE CONTEXT AND STATUS

- 1.6 The site currently comprises open field, with one building located in the north-east of the site. There is a large area of trees in the southern portion of the site and access to the site is via a small road off of Egley Road (A320), located to the east of the site. The proposed development site is approximately 4.1 hectares (ha) in size and is centred on Ordnance Survey National Grid reference SU 99416 56408. The site lies off Egley Road, on the outskirts of Woking, in Surrey. The site is not subject to any statutory or non-statutory nature conservation designations. The site is bordered by a school and sports facility to the north, a railway line to the west, a garden centre and business properties to the east, and residential dwellings and gardens to the south. The wider landscape comprises grassland fields with hedgerows and woodland to the west, further residential dwellings, and Mayford Meadows Local Nature Reserve to the east of Egley Road, and further residential properties and a school to the south, and grassland and scattered trees in the wider landscape to the south.

DEVELOPMENT PROPOSALS

- 1.7 The development proposals for the site, based on current plans provided by the client (Leach Rhodes Walker Architects, 2019) are for the redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road serving Hoe Valley School. The majority of the existing woodland will be retained on site, but several of the trees on the edge of the woodland will be removed to facilitate development.

2 Legislation

REPTILES

2.1 All reptiles native to the UK are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The four most widespread species of reptile; grass snake, adder, slow worm and common lizard are protected under Section 9(1) and 9(5) of the Act, which makes it an offence to:

- Intentionally kill or injure reptiles; and
- Sell, offer for sale, possess or transport a reptile for the purpose of sale.

How is the legislation pertaining to reptiles liable to affect development works?

2.2 An offence under the Wildlife and Countryside Act 1981 with regards to reptiles can lead to fines of up to £5000, confiscation of machinery, and/or six months imprisonment for each offence. Harm to more than one animal may be taken as separate offences. Both individuals and companies may be liable for offences.

2.3 There are no licensing provisions within the Act for development activities affecting these species. However, developers are expected to take adequate precautions to avoid breaches of the legislation, including undertaking adequate surveys and mitigation to avoid or minimise the risk of killing or injuring reptiles.

2.4 Widespread reptiles are species of principal importance for the purpose of conserving biodiversity and are covered under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act (2006) and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

3 Methodology

DESK STUDY

3.1 As part of the PEA carried out by The Ecology Consultancy (The Ecology Consultancy, 2019), the following data sources were reviewed to provide information on the location of statutory designated sites¹, non-statutory designated sites², legally protected species³, Species and Habitats of Principal Importance⁴ and other notable species⁵ and notable habitats⁶ that have been recorded within a 2km radius of the site:

- Surrey Biodiversity Information Centre (SBIC), the local Biological Records Centre, principally for species records and information on non-statutory sites;
- MAGIC (<http://www.magic.gov.uk/>) - the Government's on-line mapping service;
- Ordnance Survey mapping and publicly available aerial photography; and
- Woking Borough Council Planning search <https://caps.woking.gov.uk/online-applications/> – for documents associated with the development of land to the north of the site (PLAN/2015/0703), including ecology reports. The redline site boundary of this development included the northern part of the current survey site. Protected species surveys were carried out across part of the current survey site in 2015, including surveys for dormouse, reptiles, badger, grayling butterfly, and bat surveys.

REPTILE SURVEY

3.2 A survey to establish the presence or likely absence of reptiles was undertaken in all areas of suitable reptile habitat within the site boundary. The survey was carried out

¹ Statutory designations include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

² Non-statutory sites are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

³ **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); or in the Protection of Badgers Act 1992 (as amended).

⁴ **Species of Principal Importance** are those listed on Section 41 of the Natural Environment and Rural Communities Act, 2006.

⁵ **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2015); and/or Red Data Book/nationally notable species (JNCC, undated).

⁶ **Notable habitats** include Habitats of Principal Importance under the Natural Environment and Rural Communities Act, 2006; those included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

following best practice guidance recommended by the JNCC Herpetofauna Workers' Manual (Gent and Gibson, 2003) and Froglife (1999). Note that the Froglife advice is now defunct but still widely used as an industry reference document.

- 3.3 The reptile survey involved the placement and checking of artificial refuges in the form of bitumen-based roofing felt and corrugated metal tins, together with direct observation to determine whether reptiles were present or likely to be absent. The use of such artificial refuges increases the chances of observing reptiles, which are usually elusive.
- 3.4 The refuges were cut to a size of approximately 50cm x 50cm. This material warms up in the sun and attracts reptiles to bask on top of them or hide beneath them, where they regulate their body temperature out of sight from predators. A total of 52 refuges were placed around the site on 23 May 2019, in locations where the habitat was considered suitable for reptiles (Appendix 2, Figure 2 & Appendix 3, Photograph 1-4).
- 3.5 Suitable habitat for reptiles included areas of woodland edges, semi-improved grassland, mosaics of tall ruderal vegetation, dense scrub edges and bracken; which can be used for basking whilst also providing a source of invertebrate prey and shelter.
- 3.6 The refuges were left in place for four weeks to settle to allow any reptiles present to habituate to them before commencement of the seven survey visits, which took place between 19 June 2019 and 12 September 2019.
- 3.7 It was aimed to complete survey visits during optimal weather conditions whenever possible; with temperatures between 10°C and 18°C with intermittent or hazy sunshine and little or no wind (Beebe and Griffiths, 2000). The optimum time of day for a survey can vary according to weather conditions.
- 3.8 Sunny spells between rain showers provide windows of opportunity for reptiles to bask and therefore provide good opportunities for finding them. Very bright sunny days are often poor for surveying as the animals will reach their optimum temperature very quickly and, therefore, spend less time basking before moving off into vegetation, where they are less visible.
- 3.9 Reptile surveys can be undertaken in suitable weather conditions between April and mid-October, with April, May and September being the optimal months for survey (Gent and Gibson, 2003).

Population size estimate

- 3.10 A population size estimate was made for the site. The assessment of reptile population size is typically based on the Best Practice and Lawful Standards HGBI advisory notes for Amphibian and Reptile Groups (HGBI, 1998). Reptile population sizes are then assigned to one of three categories based on the peak count of adult individuals for each species across all the visits.
- 3.11 It should be noted that only seven visits were carried out at the site as part of a presence or likely absence survey and the population assessment for the proposed development site is, therefore, an estimate based on the guidance (refer to Table 1 below).

Table 1: Reptile Population Class Estimates based on Adult Density (HGBI, 1998)

Species	Low Population	Good Population	Exceptional Population
Adder	<2/ha	2-4/ha	>4/ha
Grass snake	<2/ha	2-4/ha	>4/ha
Common lizard	<20/ha	>40/ha	>80/ha
Slow-worm	<50/ha	>50/ha	>100/ha

LIMITATIONS

- 3.12 It is important to note that, even where data is available, 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.
- 3.13 The reptile survey consisted of only seven visits, which according to the Froglife (1999) guidance, is not sufficient to estimate population size. This guidance recommends at least 20 repeat survey visits are undertaken in total in order to estimate population size. However, in order to determine the level of mitigation required, population sizes have been estimated here based on the results of the seven visits. As based on the results following seven visits and the quality of the habitat, it was considered unlikely that a higher population size class would have been recorded by undertaking further visits.
- 3.14 Gent and Gibson (2003) stipulate that although reptile surveys can be undertaken in suitable weather conditions between April and mid-October, the optimal months for survey are April, May and September. Only two of the survey visits were completed within these optimal months; however, this is not considered to be a major limitation.

3.15 Beebe and Griffiths (2000) state that temperatures between 10°C and 18°C are optimal for reptile surveys. On four out of seven occasions the finishing temperature of the survey was exceeding the optimal survey temperature by between one and two degrees Celsius. However, as reptiles were confirmed present on site during surveys carried out under optimal conditions, this is not considered to be a major limitation.

3.16 It should be noted that, whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment.

4 Survey Results

DESK STUDY

4.1 The data search returned 15 records of widespread reptile species including grass snake, slow worm and common lizard within 2km of the site. These species have been recorded within the grid square SU9956 which covers the survey site, with slow-worm recorded in 2016 and grass snake and common lizard in 2015. Surveys associated with the development of the land to the north of the site carried out in 2015 included the current site and recorded common lizard and slow-worm (Thomson Ecology, 2015b). The data search returned no records for rare reptile species (sand lizard, smooth snake) and there are not considered to be any suitable habitats for these species on site.

REPTILE SURVEY

4.2 One common lizard, a female, was recorded under mat 16 on 4 September 2019, under one of the artificial refuges adjacent to the railway line on the western boundary of the site. No other reptile species were recorded during the surveys. Full survey results are shown in Table 1, below.

Table 1: Reptile survey dates, weather conditions and results

Date	Weather conditions	Common lizard	
		Number of individuals	Peak number per visit
19/06/2019	20°C, gentle breeze, some rain before the survey, 50% cloud cover	0	0
27/06/2019	Breezy, warm, dry, 20°C, no rain, no cloud cover	0	0
09/07/2019	19°C, gentle breeze, no rain, 80% cloud cover, overcast, sun just starting to break through, muggy feeling	0	0
16/07/2019	Dry, cool, clear skies and sunny 10°C, gentle breeze, no rain, no cloud cover	0	0
02/08/2019	Mild, 17°C, still to gentle breeze, dry but damp and dewy on ground. Scattered cloud became more overcast throughout survey	0	0
04/09/2019	17°C, scattered cloud and sun, moderate breeze, rain earlier in the day.	1	1
12/09/2019	19°C, scattered cloud and sun, light breeze.	0	0

4.3 In addition, incidental records for common amphibians and small mammals were recorded on the site. On three occasions, an adult frog was recorded under some discarded metal sheeting on site near to Tile 34 on 23 May 2019 (during the survey set up), 9 July 2019, and 4 September 2019 and under mat 40 on 12 September 2019. A wood mouse was recorded on 16 July 2019, 4 September 2019, and 12 September 2019, and a short-tailed field vole was also recorded on 4 September and 12 September 2019.

5 Conclusions and Recommendations

CONCLUSIONS

- 5.1 The site at Egley Road, Woking was confirmed to support singular common lizard. No other widespread reptile species were found on the site, and are therefore considered likely to be absent.
- 5.2 In order to comply with the Wildlife and Countryside Act 1981 (as amended) with respect to reptiles, a suitable mitigation strategy must be adopted to prevent potential killing or injury of these animals during the works. This mitigation strategy is detailed as follows.

RECOMMENDATIONS

Phased Mitigation Strategy of Reptile Habitat to be Disturbed

- 5.3 As areas suitable for reptiles are scheduled to be impacted/cleared, an appropriate mitigation strategy to safeguard the reptile populations will be required for the site. A standalone method statement should be issued, with details summarised (and carried out as ordered) as follows.

Reptile Displacement

- 5.4 Reptile displacement is considered to be the most appropriate mitigation method, and will reduce the risk of injuring, or causing harm to any reptiles present.
- 5.5 Any areas of suitability for reptiles scheduled to be cleared, such as long grassland, bracken, scrub and woodland edge habitats, will undergo a systematic vegetation clearance between April and October inclusive (when reptiles are active) using only hand tools. Prior to this, a suitably experienced ecologist will carry out a hand search of suitable habitat. Any possible refuges for reptiles (e.g. piles of wood and discarded materials across the site) will be moved to within any suitable retained boundary habitats on or adjacent to site where appropriate. Any reptiles found during the hand search will be moved into areas of suitable retained boundary habitats such as grassland and scrub, such as the grassland adjacent to the railway sidings in the north-west of the site that will be retained.
- 5.6 The vegetation clearance will comprise the clearance of vegetation above ground level, to a minimum height of 10 centimetres (cm), in a north-westerly direction starting in the south-eastern corner. This will encourage reptiles to be displaced to adjacent habitats

to the north and west. The vegetation clearance should not exceed a distance of 30m in a north-westerly direction in any one day, to encourage reptiles to move towards suitable retained habitat rather than become isolated.

- 5.7 After at least 24 hours, following another hand search by an ecologist, vegetation clearance to ground level will be undertaken in the same direction. After another 24 hours a destructive search of the works footprint will then be carried out under strict ecological supervision with a long-armed excavator with a toothed bucket attachment. Care must be taken to ensure that any plant machinery does not track on any habitat that has not first been cleared. Prior to the destructive search, an ecologist will carry out a fingertip search of the area for any remaining reptiles.
- 5.8 In the event that reptiles are found, the vegetation clearance contractor will be signalled to stop by the ecologist. All equipment will be turned off immediately and the animal moved if appropriate by the supervising ecologist. In no event should any other site staff attempt to move any animals unless permission is given by the ecologist.
- 5.9 Where trees and scrub are to be cleared, removal of stumps should be undertaken April – October inclusive and supervised by an ecologist.
- 5.10 All works should be undertaken in strict adherence to legislation relating to nesting birds.

Construction Phase

- 5.11 During commencement of installation works, site staff should continue to monitor for the presence of reptiles and other protected species. In the case that any are encountered, works must cease and an ecologist contacted immediately.
- 5.12 The areas within the construction zone should be maintained as unsuitable habitat, to inhibit dispersal of reptiles (and amphibians) on to the development footprint during the construction phase. If vegetation is allowed to re-establish before the construction phase, clearance procedures must be repeated during the reptile active period (April and October inclusive), so as to avoid the reptile hibernation period, thus potentially delaying the proposed construction time frame.
- 5.13 Any suitable habitat that falls within the site boundary but not within the works area should be adequately protected throughout the duration of the works. This includes the woodland, woodland edges, areas of scrub, and areas of unmanaged grassland on the

boundaries of the site, where retained. Any habitats to be retained should be protected throughout the works as a 'no work zone' using heras fencing.

OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

Habitat retention/enhancement/creation

- 5.14 Where possible, retained suitable habitat should be linked together and to suitable off-site habitat using commuter corridors to encourage dispersal by reptiles and other fauna between habitat patches. This should be done with the retention of scrub and grassland buffers where possible between the woodland and the railway sidings adjacent to the site.
- 5.15 The plans for the landscaped areas on the boundaries of the site and around the proposed courts currently include ornamental planting. It is recommended that the ornamental planting is replaced with a wildflower seed mix suitable for the soil composition and drainage levels of the site. The inclusion of a wildflower seed mix will increase the plant and invertebrate diversity and in turn provide good foraging and commuting habitat for reptiles. The grassland should be managed with a relaxed mowing scheme to allow it to grow into good quality reptile habitat. The mowing schedule could include rotational cut in sections, reduction in mowing frequency to allow flowering and subsequent self-sowing and height of cut to be no shorter than 5cm to keep dense cover. Creation and enhancement of grassland and scrub would improve the function and connectivity of existing green infrastructure assets and comply with local planning policies including Woking Borough Core Strategy (Appendix 5).

Creation of log piles and hibernacula

- 5.16 Log piles and hibernacula that can be used as shelters and hibernation sites for reptiles could be integrated into the landscaping design, and included in the woodland edge habitats. These should be created as habitat enhancements within areas of retained habitat on site. These deadwood piles should be made from native hardwood locally cut from around the site. The piles should be stacked approximately 1m in height, either in a pyramidal shape (bound with wire to prevent them breaking apart over time) or against a semi-mature/mature tree trunk.
- 5.17 Hibernacula should be constructed above or below ground and should comprise native hardwood locally cut from the site covered with turf or moss from within the site. Hibernacula should be approximately 1m in width and 2m in length. They should be interspersed with log piles within receptor areas and areas of retained and created

habitat. Specifications for hibernacula should be in accordance with HA DMRB, Volume 10 Section 4 Annex D (Highways Agency, 2005), with examples detailed in Appendix 4.

5.18 Any log piles and hibernacula created should be left untouched as regular disturbance will limit the diversity of invertebrates in log piles and hibernacula. As well as supporting many kinds of invertebrate, deadwood piles also provide good foraging areas for reptiles and birds such as robins and wrens, and hibernation sites for hedgehogs⁷.

References

Beebe, T. & Griffiths, R. (2000). *Amphibians and Reptiles – A Natural History of the British Herpetofauna*. HarperCollins, London.

British Standards Institute (2013). British Standard 42020:2013 Biodiversity – *Code of Practise for Biodiversity and Development*.

Edgar, P., Foster, J. and Baker, J. (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Froglife (1999). *Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10*. Froglife, Halesworth.

Gent, T. & Gibson, S. (2003). *Herpetofauna Workers Manual*. Joint Nature Conservancy Council, Peterborough UK.

Herpetofauna Groups of Britain and Ireland (1998), *Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARGs)*. HGBI, c/o Froglife, Halesworth. Unpubl.

Highways Agency (2005) *Design Manual for Roads and Bridges (HA116/05): Nature Conservation Advice in Relation to Reptiles and Roads*.

HMSO - Her Majesty's Stationery Office (1981). *The Wildlife and Countryside Act (WCA) (as amended)*.

Leach Rhodes Walker Architects (2019). Option 11- Egley Road Ground Floor Site Plan. 7884_L(00)263_C. Date drawn 26.06.19.

Natural Environment and Rural Communities (NERC) Act 2006.

The Ecology Consultancy (2019). *Egley Road, Woking: Preliminary Ecological Appraisal*. Report for Woking Football Club.

Thomson Ecology (2015). *Egley Road, Woking: Badger, Bat and Reptile surveys. Report for Willmott Dixon Construction Limited*. Project no. NWIL206 / 004 / 003 / 001. Document associated with planning application PLAN/2016/0247.

⁷ Species of Principal Importance and UK BAP priority species.

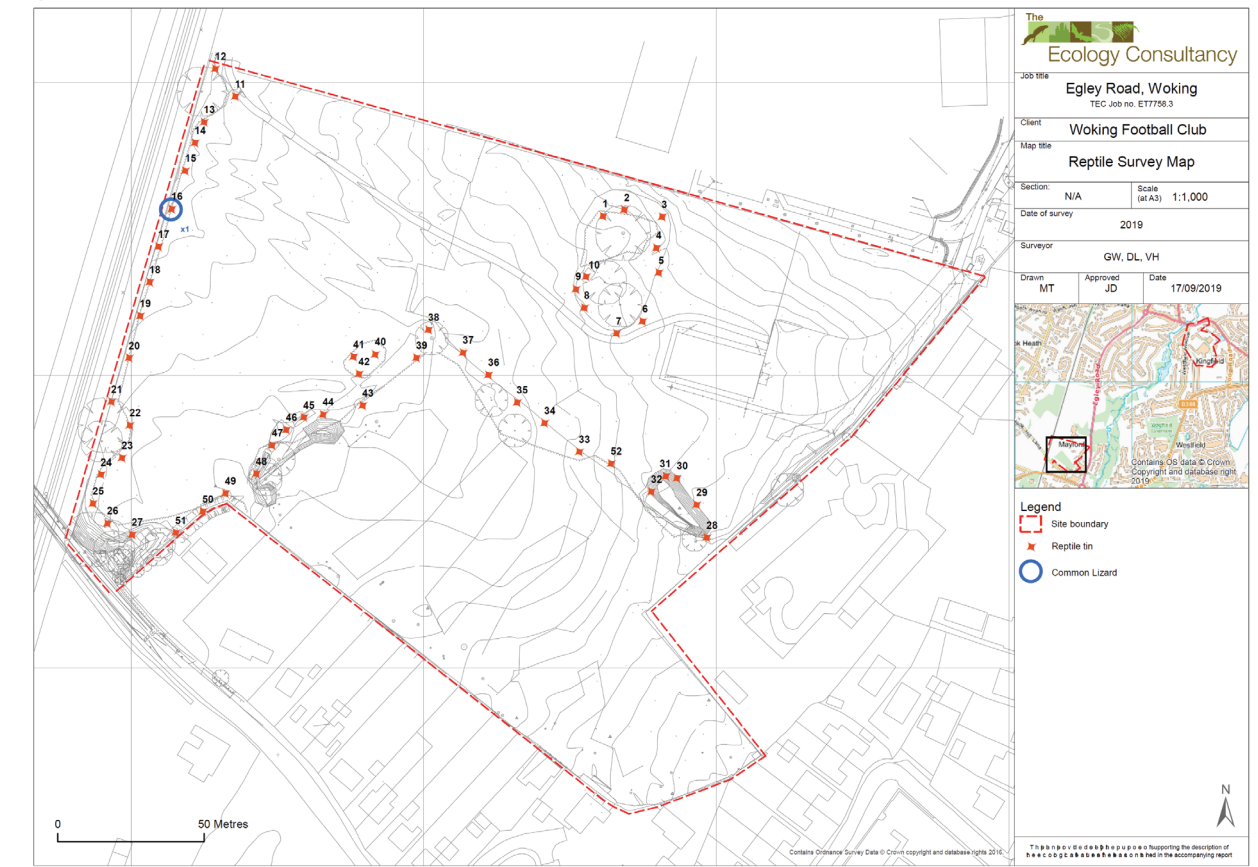
Appendix 1: Habitat Map

Figure 1: Phase 1 Habitat Map



Appendix 2: Reptile Survey Results

Figure 2: Reptile Survey Results



Appendix 3: Photographs

Photograph 1

Location of reptile tin within mosaic of tall ruderal, scrub and grassland along the north-eastern edge of the woodland on site. View facing south west.



Photograph 2

Metal tin artificial refuge within tall ruderal and grassland.



Photograph 3

Example of discarded material onsite that could be utilised as refuge by common reptile species.



Photograph 4

Example of discarded material onsite that could be utilised as refuge by common reptile species.

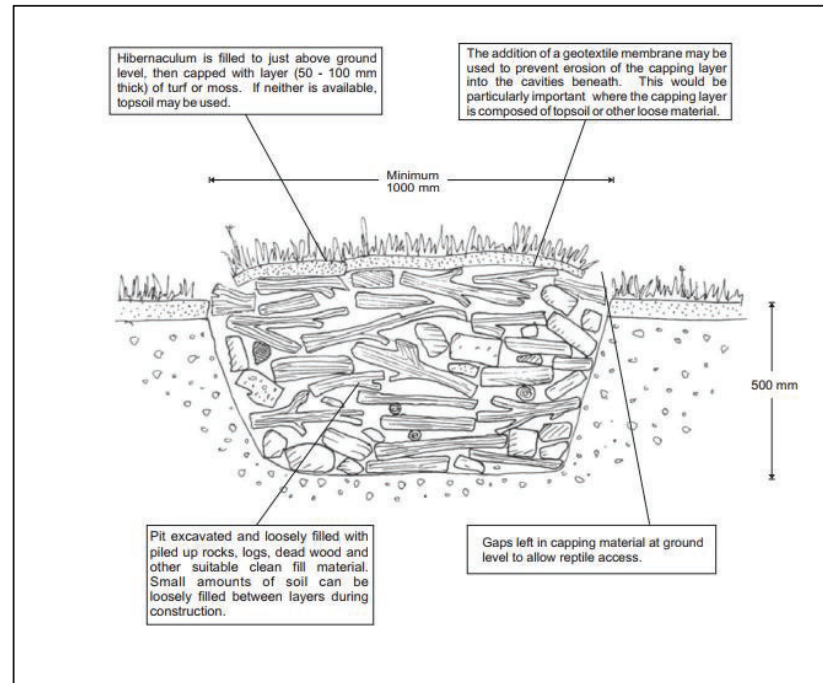
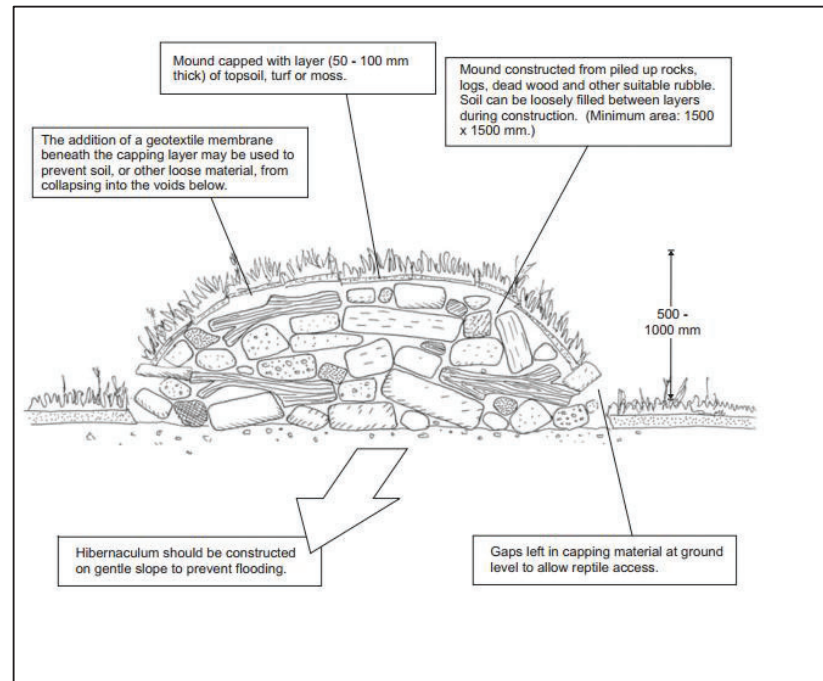


Photograph 5
Example of discarded
material onsite that could be
utilised as refuge by
common reptile species.



Appendix 4: Hibernacula Specification

Example of above and below ground hibernacula using branches or logs covered with turf or moss (taken from HA DMRB Volume 10 Section 4 Annex B)



Appendix 5: Woking Borough Local Planning Policy

Woking Borough Core Strategy

The Woking Borough Core Strategy (2012) deals with matters of strategic importance for the Woking area. Key chapters include Chapter 5 – *Borough wide policies*.

Policy CS7: Biodiversity and Nature Conservation

The Council is committed to conserving and protecting existing biodiversity assets within the Borough. It will require development proposals to contribute to the enhancement of existing biodiversity and geodiversity features and also explore opportunities to create and manage new ones where it is appropriate. This will include those habitats and species listed in the Surrey Biodiversity Action Plan (BAP). Any development that will be anticipated to have a potentially harmful effect or lead to a loss of features of interest for biodiversity will be refused.

The Council will encourage new development to make positive contribution to biodiversity through the creation of green spaces, where appropriate, and the creation of linkages between sites to create a local and regional biodiversity network of wildlife corridors and green infrastructure. It will seek to retain and encourage the enhancement of significant features of nature conservation value on development sites.

Any development with potential impact on the SPA or the SAC will be subject to a Habitats Regulations Assessment to determine the need for Appropriate Assessment.

Policy CS17: Open space, green infrastructure, sport and recreation

All proposals for new residential development (other than replacement dwellings) will be required to contribute towards the provision of open space and green infrastructure, including the following:

- children's play areas and outdoor recreational facilities for young people.
- outdoor sports facilities.

Developers will be expected to contribute to provision through the Community Infrastructure Levy (CIL) or on larger sites through on-site provision and/or a S106 contribution as appropriate. Development involving the loss of open space will not be permitted unless:

- alternative and equivalent or better provision is made available in the vicinity
- or the development is directly related to the enhancement of the open space.

New residential units within five kilometres of an SPA will be required to provide or contribute to the provision and improvement of Suitable Alternative Natural Greenspace (SANG) which is a component of Green Infrastructure and also its Strategic Access Management and Monitoring (SAMM). This land will be used to mitigate the impact and effect of residential development on the SPA, by providing informal recreation land of appropriate quality across Woking Borough. Standards for the provision of SANG are set out in the Council's Thames Basin Heaths SPA Avoidance Strategy 2010-15.

Policy CS22: Sustainable Construction

New residential development on greenfield sites will be required to meet the Code for Sustainable Homes level 5 (or any future national requirement) from now because of the relatively lower cost of developing such sites.

The Council will consider a case based on evidence of viability if an applicant can demonstrate that the requirement for code level 5 cannot be met. This will be considered on a case by case basis. New non-residential development of 1,000 sq.m or more (gross) floorspace is required to comply with BREEAM very good standards (or any future national equivalent).

All development is encouraged to make biodiversity enhancements such as green roofs and bird and bat boxes. All new residential development is encouraged to meet the 'ecology' elements of the Code.

Policy CS24- Woking's landscape and townscape

All development proposals will provide a positive benefit in terms of landscape and townscape character, and local distinctiveness and will have regard to landscape character areas. To protect local landscape and townscape character, development will be expected to:

- conserve, and where possible enhance existing character, especially key landscapes such as heathlands, escarpments and the canal/river network and settlement characteristics; maintain locally valued features, and enhance or restore deteriorating features
- respect the setting of, and relationship between, settlements and individual buildings in the landscape
- conserve, and where possible, enhance townscape character, including structure and land form, landscape features, views and landmarks, and appropriate building styles and materials

- support land management practices that have no adverse impact on characteristic landscape patterns and local biodiversity.
- Protect and encourage the planting of new trees where it is relevant to do so.

LOCAL BAPS

A number of priority habitats and species have been identified in the Biodiversity & Planning in Surrey document (Surrey Nature Partnership, 2018). Priority habitats and species within Surrey include reptiles – Common lizard, grass snake, slow-worm.



Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 W. www.ecologyconsultancy.co.uk E. enquiries@ecologyconsultancy.co.uk

■ **Sussex** - 3 Upper Stalls, Iford, Lewes, East Sussex BN7 3EJ T. 01273 813739
■ **East Anglia** - 60 Thorpe Road, Norwich, Norfolk NR1 1RY T. 01603 628408
■ **Midlands** - 1-2 Trent Park, Eastern Avenue, Lichfield, Staffordshire WS13 6RN T. 01543 229049
■ **North** - Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR T. 01924 683558