Land south of 162 Hever Avenue, West Kingsdown

Preliminary Ecological Appraisal

20th October 2015 / Ref No 2015/10/03

Client: Sevenoaks District Council

Prepared by Katia Bresso CEnv MCIEEM
Trading as 'KB Ecology Ltd' (Reg 7595382)
42, Douglas Road
Lenham, Kent
ME17 2QP
Tel: 07810 412 773
Email: katia.bresso@kbecology.co.uk

Contents

1 Introduction 2
1.1 Background to the Scheme 2
1.2 Survey Location/Area 2
1.3 Survey Objectives 2
1.4 Limitations 3
2 Methodology 4
2.1 Desk Study 4
2.2 Scoping Survey 4
2.3 Bats in trees assessment 4
3 Baseline Ecological Conditions 9
3.1 Designated Nature Conservation Sites 9
3.2 Habitats 9
3.3 Amphibians 11
3.4 Reptiles 12
3.5 Birds 12
3.6 Hazel Dormouse 13
3.7 Badger 13
3.8 Bats 15
3.9 Other Species 15
4 Ecological constraints and opportunities, recommendations for mitigation and further survey 16
4.1 Designated Nature Conservation Sites 16
4.2 Habitats 17
4.3 Amphibians 17
4.4 Reptiles 17
4.5 Birds 18
4.6 Hazel Dormouse 18
4.7 Badger 18
4.8 Bats 18
4.9 Other Species 19
4.10 Additional Recommendations: Enhancements 20
5 References and Bibliography 22

1 Introduction

1.1 Background to the Scheme

KB Ecology Ltd has been commissioned to undertake a baseline ecological survey and a preliminary ecological appraisal with regards to a proposed development at land south of 162 Hever Avenue, West Kingsdown, Kent TN15 6DU, in support of a planning application for the erection of a new dwelling.

The extent of site to be surveyed is shown in red on the map below, as sent by the client:

1.2 Survey Location/Area

The site is located at approximately TQ 574 642. The location of the site is shown on Figure 1 and Figure 2.

1.3 Survey Objectives

The purpose of this survey is to provide a scoping assessment and to assist in demonstrating compliance with wildlife legislation and planning policy objectives.

The key objectives are as follows:

- Identify all relevant statutory and non-statutory designated sites and features of ecological significance within the site and its surroundings.
- Assess the potential for the presence of protected species and species of principal conservation importance, important habitats or other biodiversity features within the site and its surroundings.
- Provide recommendations for further surveys where assessed as necessary and suggest potential enhancements.
- Present the likely significance of ecological impacts on the proposed development.
- Provide an early indication of potential ecological mitigation and compensation requirements necessary as part of any development proposals.

A summary of wildlife legislation and policy has been included in Appendix A.

1.4 Limitations

This report has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct and the opinions expressed are true and professional bona fide opinions. It records the potential for flora and fauna evident on the days of the site visits. It does not record any flora or fauna that may appear at other times of the year and, as such, were not evident at the time of visit.

The findings of this report represent the professional opinion of a qualified ecologist and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this document.

2 Methodology

2.1 Desk Study

Web-based resources were consulted to identify designated nature conservation sites within 1km of the site and habitats of potentially high ecological importance and sensitivity within 500m of the site (e.g. ancient woodlands, ponds).

A data search was carried out with the Kent Reptile and Amphibian Group KRAG[1].

2.2 Scoping Survey

The site and its immediate surroundings were considered in terms of habitats, protected species and species of principal conservation importance during a walkover survey undertaken on 15th October 2015 by Katia Bresso CEnv MCIEEM, a qualified professional consultant ecologist with over 14 years of experience[2], licensed bat surveyor (Class Survey Licence Registration Number 2015-11917-CLS-CLS (CL15 Bat Roost Visitor Level 1) and 2015-11918-CLS-CLS (CL18 Bat Survey Level 2)) and Registered Consultant of the Bat Low Impact Class Licence with Natural England, licensed dormouse surveyor and licensed great crested newt surveyor (Class Survey Licences Registration Number 2014-6520-CLS-CLS and 2015-16268-CLS-CLS). Evidence of the use of the site by species was recorded (i.e. field signs).

The habitat survey was undertaken in general accordance with Phase 1 Habitat Survey (JNCC 2010), i.e. within the survey area every parcel of land is classified, recorded and mapped in accordance with a list of ninety specified habitat types using standard colour codes to allow rapid visual assessment of the extent and distribution of different habitat types.

The survey and report aim at following the guidance and recommendations in the 'British Standard Biodiversity Code of Practice for Planning and Development (BS 42020: 2013)'.

2.3 Bats in trees assessment

The survey entailed an external inspection of all trees present within the survey area, looking at potential to support bats and looking for actual signs of bats, using an endoscope, high powered torch and binoculars where needed (from the ground only).

The features of trees that can be used as bat roosts include:

- Natural holes, woodpecker holes, rot cavities that orient upwards from the entrance,
- Cracks/splits in major limbs
- Loose bark
- Behind dense, thick-stemmed ivy
- Hollows/cavities
- Within dense epicormic growth

[1] Please note that absence of records should not be taken as confirmation that a species is absent from the search area.

[2] Katia Bresso is a Suitably Qualified Ecologist with regards to Code for Sustainable Homes assessment and BREEAM

- Bird and bat boxes

Each tree was classified as follows:

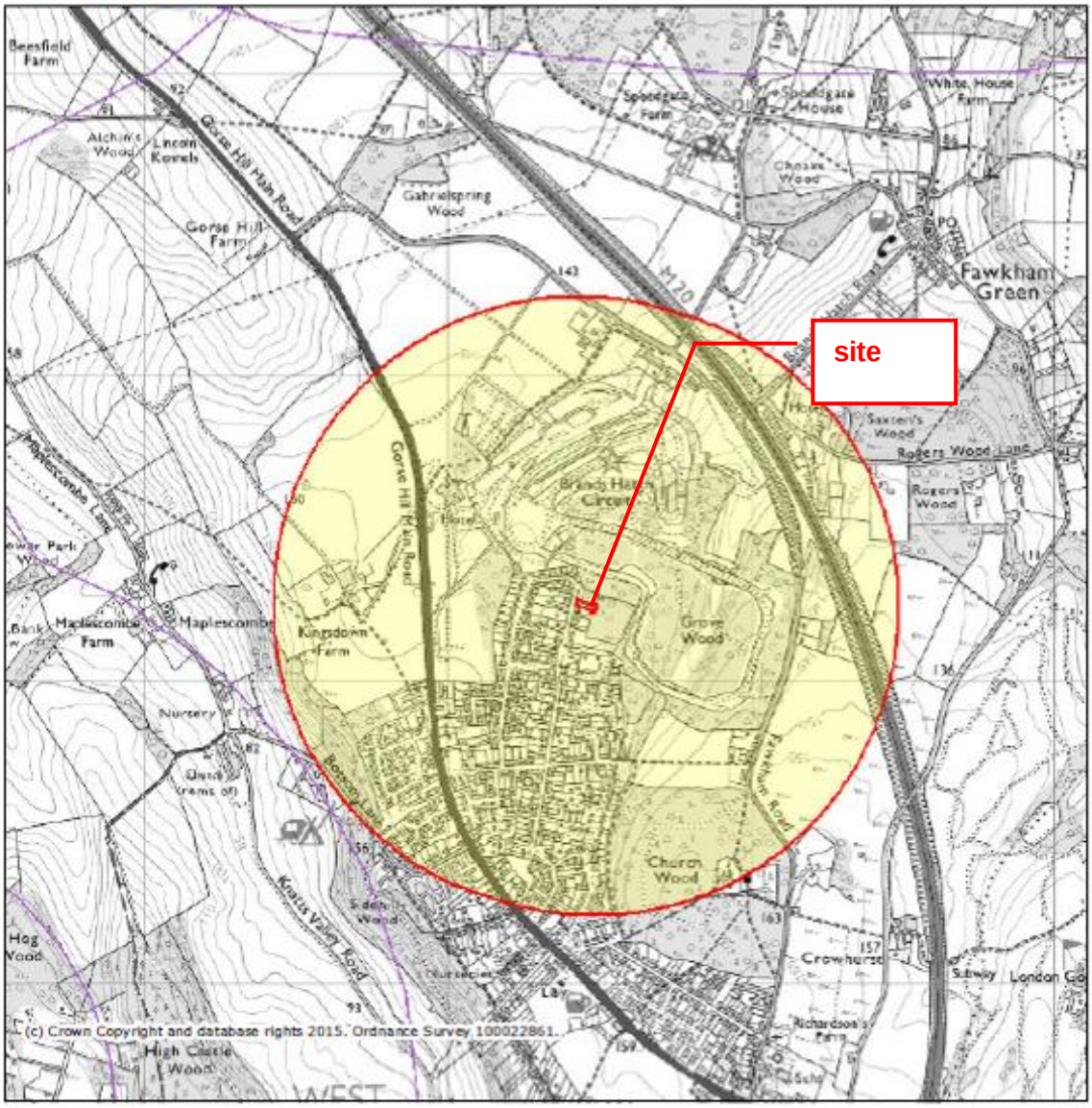
Table 8.4 Protocol for visual inspection of trees due to be affected by arboricultural work, to assess the value of the trees to bats. (Adapted from a protocol provided by Corylus Ecology Ltd.)

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Known or confirmed roost	Follow SNCO guidance and these guidelines wherever possible, to establish the extent to which bats use the site. This is particularly important for roosts of high risk species and/or roosts of district or higher importance and above		The tree can be felled only under EPS licence following the installation of equivalent habitats as a replacement.
Category 1* Trees with multiple, highly suitable features capable of supporting larger roosts	Tree identified on a map and on the ground. Further assessment to provide a best expert judgement on the likely use of the roost, numbers and species of bat, by analysis of droppings or other field evidence. ***A consultant ecologist is required***	Avoid disturbance to trees, where possible. Further dusk and pre-dawn survey to establish more accurately the presence, species, numbers of bats present and the type of roost, and to inform the requirements for mitigation if felling is required.	Felling would be undertaken taking reasonable avoidance measures[3] such as 'soft felling' to minimise the risk of harm to individual bats.
Category 1 Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats	Tree identified on a map and on the ground. Further assessed to provide a best expert judgement on the potential use of suitable cavities, based on the habitat preferences of bats. ***A consultant ecologist required***	Avoid disturbance to trees, where possible. More detailed, off the ground visual assessment. Further dusk and pre-dawn survey to establish the presence of bats, and if present, the species and numbers of bats and type of roost, to inform the requirements for mitigation if felling is required.	Trees with confirmed roosts following further survey are upgraded to Category 1* and felled under licence as above. Trees with no confirmed roosts may be downgraded to Category 2 dependent on survey findings
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. ***A consultant ecologist is unlikely to be required***	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.
Category 3 Trees with no potential to support bats	None. ***A consultant ecologist is not required unless new evidence is found***	None.	No mitigation for bats required.

No climbing inspections of trees and no emergence or dawn surveys were undertaken as part of this work.

MAGIC

Figure 1



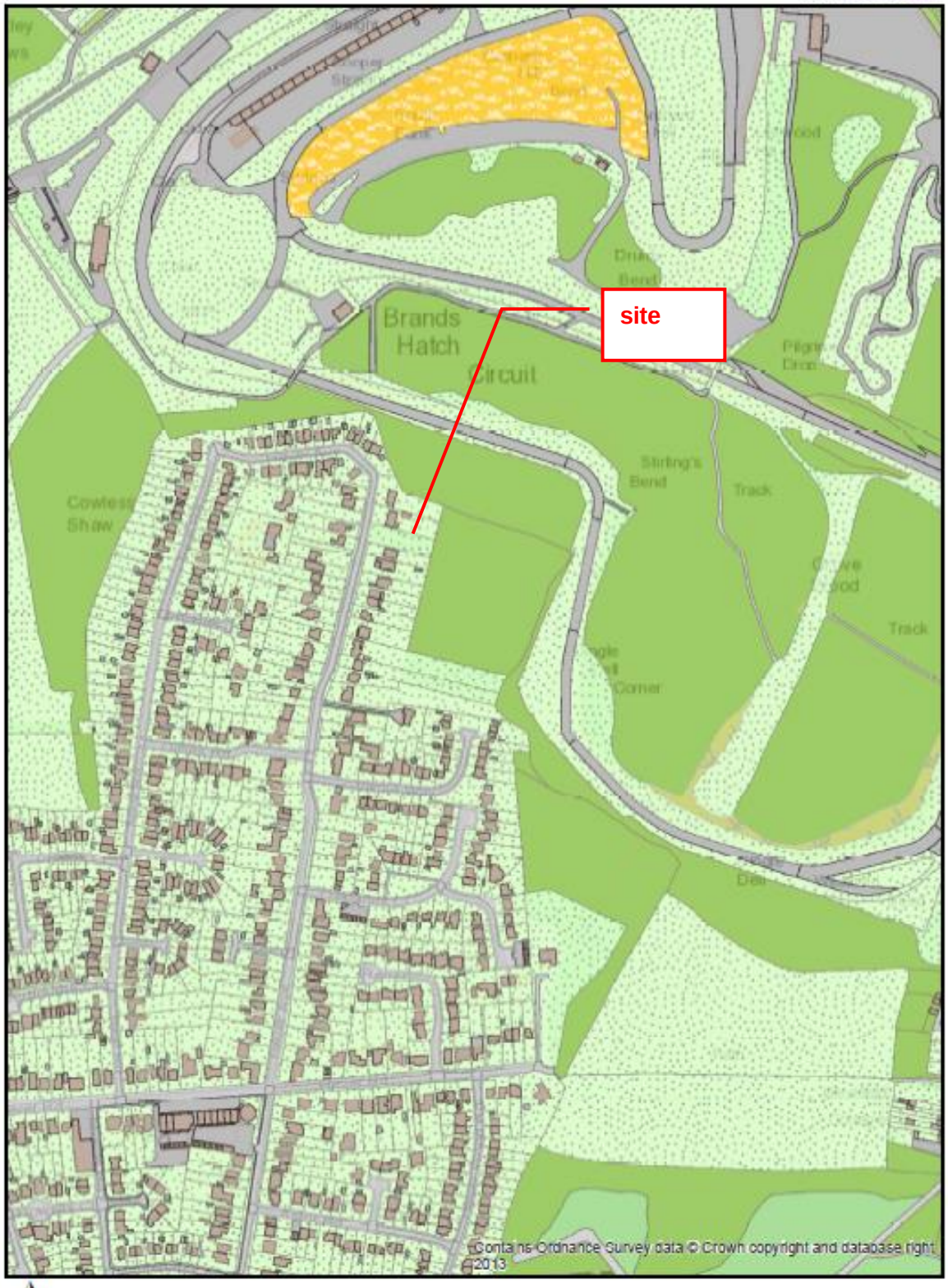
Legend

- Limestone Pavement Orders (England)
- Local Nature Reserves (England)
- Moorland Line (England)
- National Nature Reserves (England)
- National Nature Reserves (Scotland)
- National Nature Reserves (Wales)
- National Parks (England)

Projection = OSGB36
xmin = 553900
ymin = 162100
xmax = 560700
ymax = 166700

Map produced by MAGIC on 16 October, 2015.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

FIGURE 2



Scale 1:5,000

Map Dated: 16 Oct 2015


site
Image © 2015 The GeoInformation Group
Image © 2015 Getmapping plc
256 m
Google earth
Tour Guide
1940
Imagery Date: 6/4/2015 51°21'21.05" N 0°15'33.28" E elev 148 m eye alt 1.38 km

3 Baseline Ecological Conditions

3.1 Designated Nature Conservation Sites

No statutory designated sites are located within 1km of the site.

One local wildlife site, 'SE43 Knatts Valley, West Kingsdown', is present 800m to the West of the site, and another 'SE58 Saxten's Wood, Fawkham Green' is present 950m to the East, on the other side of the M20.

3.2 Habitats

The site is on the edges of a residential area, with dwellings on both sides and Grove wood to the back.

It consists of a small number of mature trees (sessile oak *Quercus petraea*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*) and a few smaller trees (hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, elder *Sambucus nigra*, blackthorn *Prunus spinosa*) with bramble scrub in places. Most of the plot is covered in bracken *Pteridium aquilinum* or common nettles *Urtica dioica*. Other ground flora included ivy *Hedera helix*, wood avens *Geum urbanum*, herb-Robert *Geranium robertianum*, cleavers *Galium aparine*, red dead-nettle *Lamium purpureum*, hedge woundwort *Stachys sylvatica*, wood sedge *Carex sylvatica*. A bare ground track is present along the southern side of the plot.

A *Leylandii* hedge is present along the back garden of 162 Hever Avenue.

Plates are present in Appendix B. Figure 3 below shows the location of the habitats.

Legend of Phase 1 habitat survey map hereafter:

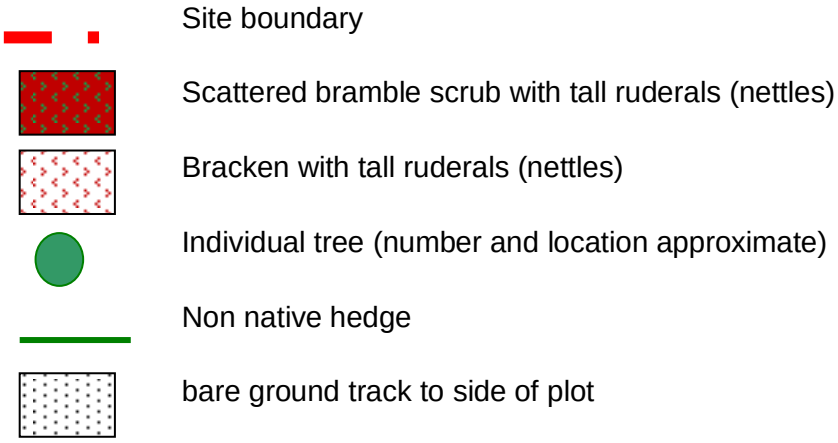
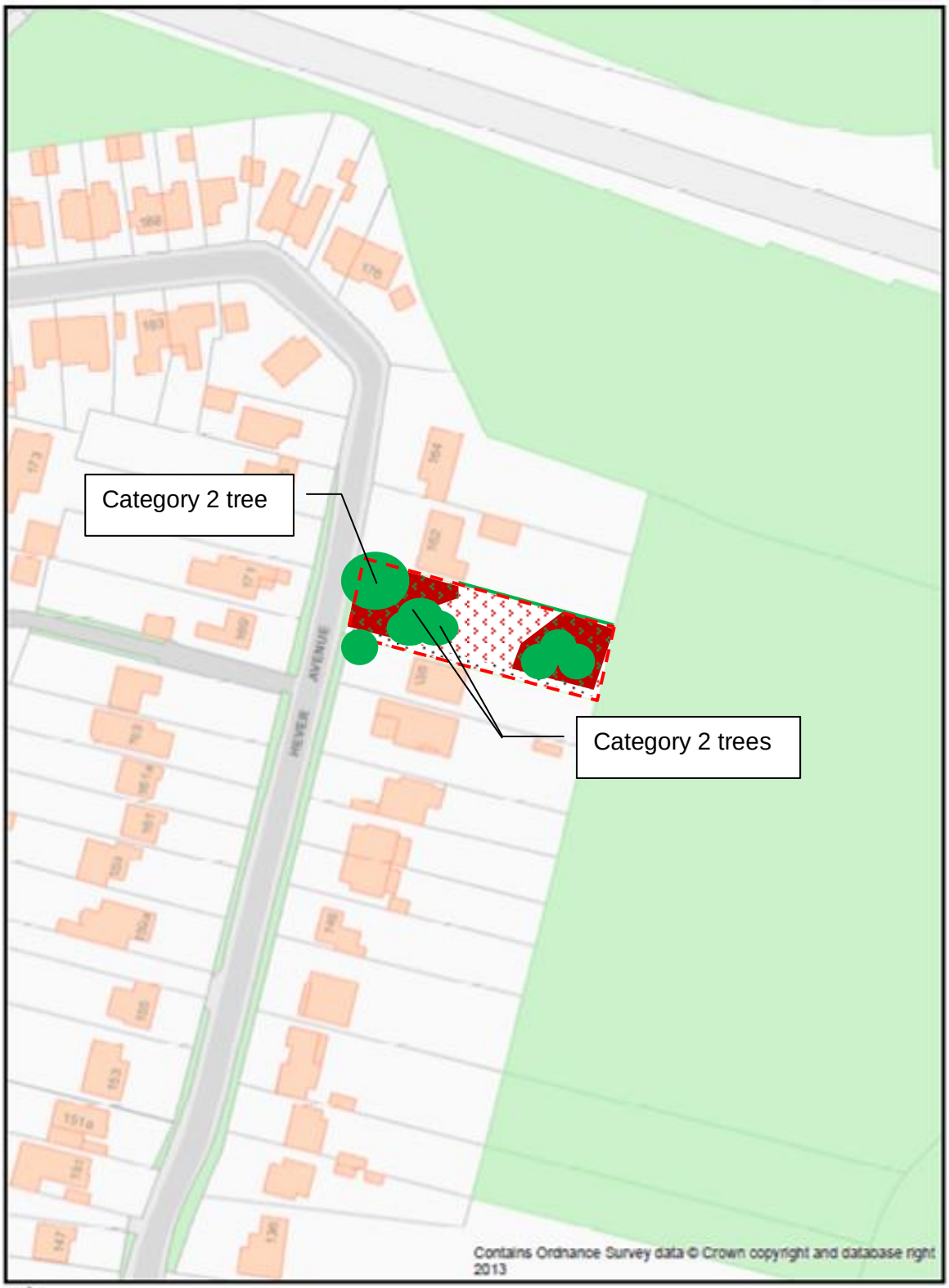


FIGURE 3



Scale 1:1,250

Map Dated: 16 Oct 2015

3.3 Amphibians

No ponds were present on site or within 250m, the nearest pond being over 470m to the west.

The data search carried out with KRAG (Enquiry No: CES/15/480) revealed that the closest recorded Great Crested Newt *Triturus cristatus* site is a historical record located at Shaurnigan, West Kingsdown, 1.65 km to the S (record id: 2394). KRAG's database risk assessment indicates that the likelihood of presence of great crested newts *in the overall area* is *'Possible'*[3].

It is considered that the site offered negligible potential for amphibians, and great crested newts in particular, due to the lack of ponds near-by.

Common amphibian species are afforded limited legal protection under the Wildlife & Countryside Act 1981 (as amended). The great crested newt is afforded full legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). It is also listed under

[3] Likelihood of Presence Scores are described using the following categories: Unlikely<Possible<Likely<High

Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and are therefore a European Protected Species (EPS). Great crested newts and common toads are also listed as species of principal conservation importance (See Appendix A).

For more information, guidance from Natural England is available at
https://www.gov.uk/great-crested-newts-protection-surveys-and-licences

3.4 Reptiles

The KRAG datasearch revealed that the closest recorded reptile is Viviparous Lizard, located at West Kingsdown Allotments, 1.4 km to the S (record id: 50756).The likelihood of reptiles to be present *in the overall area* is judged as per table below:

Reptiles

	Likelihood of Presence	
	Score	Dist (km)
Viviparous Lizard:	Likely	1.40
Slow-worm:	Possible	1.40
Sand Lizard:	*unlikely*	*77.73*
Grass Snake:	Possible	2.78
Adder:	*unlikely*	*3.64*
Smooth Snake:	n/a	n/a

Reptile survey effort in local area is considered to be relatively low. Results should be interpreted with caution.

No reptiles were seen during the site visit.

Slow worms *Anguis fragilis* and grass snakes *Natrix natrix* are known to be present in the surrounding area (from discussions with local people). The site offers suitable habitat for slow worms. Grass snakes could also sometimes be present although the site, being so small, would only be a small part of their habitat. A number of tree stumps are present which could be used for hibernation.

Common reptiles are afforded limited legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). They are also listed as species of principal conservation importance (See Appendix A).

For more information, guidance from Natural England is available at
https://www.gov.uk/reptiles-protection-surveys-and-licences

3.5 Birds

It is considered that the site has high potential to support breeding birds within the trees and hedge.

All species of bird whilst actively nesting are afforded legal protection under the Wildlife & Countryside Act 1981 (as amended) and special penalties are available for offences related to birds listed on Schedule 1. Some species are also listed as species of principal conservation importance, including sky lark, common cuckoo, house sparrow, tree sparrow and song thrush (See Appendix A).

For more information, guidance from Natural England is available at https://www.gov.uk/wild-birds-protection-surveys-and-licences

3.6 Hazel Dormouse

The hazel dormouse *Muscardinus avellanarius* is known to be present at Church wood, (where annual dormouse monitoring takes place) and which is 600m to the south of the site with sufficiently good connectivity.

Although no dormice or dormouse signs (chewed hazel nuts) or nests were found during the site visit (a check was made of the vegetation present on site, which was judged sufficient as the scrubby vegetation was not dense), it is still possible that dormice use the site, although this would be only very intermittently as their home range is much bigger[4]. A number of tree stumps are present which could be used for hibernation.

The dormouse is afforded full legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). It is also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and are therefore a "European Protected Species" EPS) . The dormouse is also listed as species of principal conservation importance (See Appendix A).

For more information, guidance from Natural England is available at https://www.gov.uk/hazel-dormice-protection-surveys-and-licences

3.7 Badger

No setts or signs of badgers *Meles meles* were identified during the survey.

The Protection of Badgers Act 1992 was introduced in recognition of the additional threats that badgers face from illegal badger digging and baiting. Under the Act, it is an offence inter alia to:

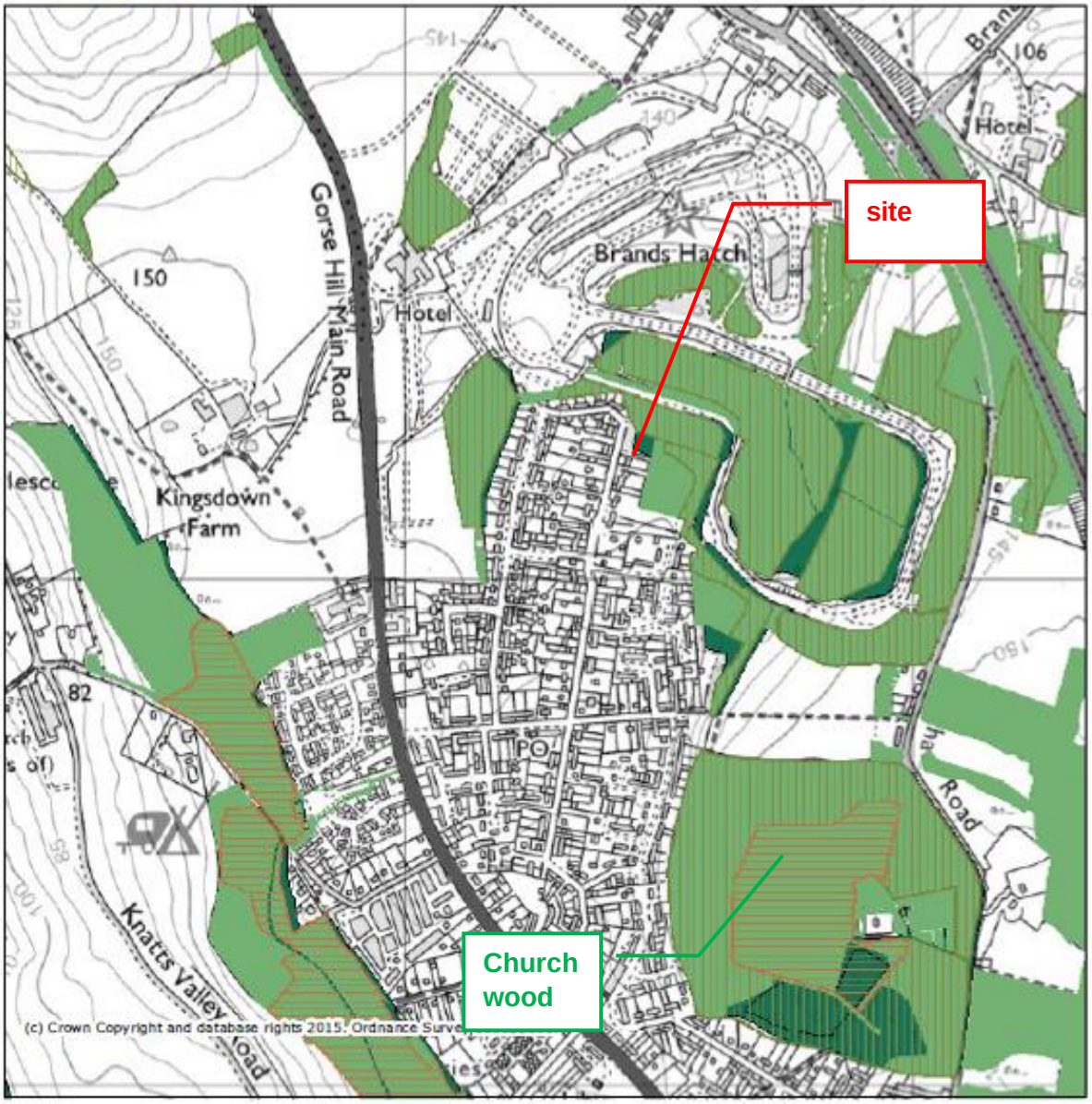
- Wilfully kill, injure or take a badger, or to attempt to do so;
- Cruelly ill-treat a badger; or
- Intentionally or recklessly interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to or any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

For more information, guidance from Natural England is available at https://www.gov.uk/badgers-protection-surveys-and-licences

[4] dormice occur at low population densities, even in ideal habitat they do not exceed 10 adults per hectare

MAGIC

Figure 4



Legend

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Forestry Commission Legal Boundary (England)
- National Inventory of Woodland and Trees (England)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

Projection = OSGB36
xmin = 555300
ymin = 162700
xmax = 559300
ymax = 165400

Map produced by MAGIC on 16 October, 2015.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

3.8 Bats

Three trees offered some limited bat potential in the shape of dense ivy (but no obvious cavities), making them Category 2.

The site is likely to be intermittently used by small numbers of foraging and commuting bats.

All species of bat are afforded full legal protection under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). They are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and are therefore a "European Protected Species" (EPS). Some species of bats (noctule, soprano pipistrelle, brown long-eared bat, barbastelle) are also listed as species of principal conservation importance.

Bats rarely use the same roosting place all year round as they need different conditions for breeding and hibernating. But bats are creatures of habit and tend to return to the same sites at the same time year after year. For this reason, roosts are legally protected even if bats don't seem to be living there at certain times of year.

The legislation makes it a criminal offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;
- Intentionally or recklessly obstruct access to a bat roost.

For more information, guidance from Natural England is available at https://www.gov.uk/bats-protection-surveys-and-licences

3.9 Other Species

It is considered that the site has moderate potential to support hedgehogs (*Erinaceus europaeus*), which are a Species of Principal Importance under Section 41 of the NERC Act (2008 updated list).

Common mammal species such as fox (*Vulpes vulpes*) are likely to be present on site.

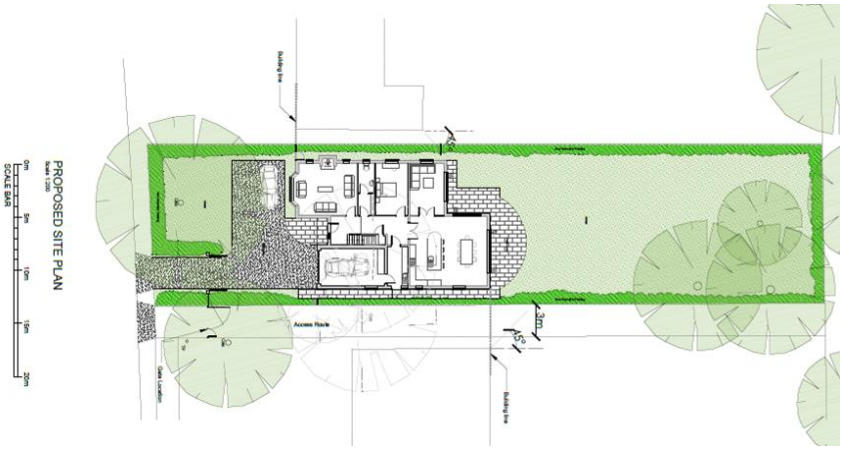
All mammals are afforded protection against unnecessary suffering by the Wild Mammals (Protection) Act 1996 (see Appendix A).

It is considered that the site also has potential to support stag beetles *Lucanus cervus*[5], which are protected against illegal trade under schedule 5 of the Wildlife and Countryside Act 1981 and are a priority Biodiversity Action Plan species in the UK.

[5] For more information, see http://ptes.org/campaigns/stag-beetles/stag-beetle-facts/

4 Ecological constraints and opportunities, recommendations for mitigation and further survey

The details of the proposed development were as below at the time of writing this report.



Should the scope of the proposed works be amended following the completion of this scoping survey, or be deferred for an extended period of time, there may be a requirement to update this scoping report and its recommendations.

4.1 Designated Nature Conservation Sites

A site check report was generated for the site using the Impact Risk Zones on the Magic website[6]:

Site Check Report Report generated on Fri Oct 16 2015
You selected the location: Centroid Grid Ref: TQ574642
The following features have been found in your search area:

SSSI Impact Risk Zones – to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)

GUIDANCE – How to use the Impact Risk Zones	/Metadata_for_magic/SSSI IRZ User Guidance v2.3 MAGIC 14Aug2015.pdf
1. DOES PLANNING PROPOSAL FALL INTO ONE OR MORE OF THE CATEGORIES BELOW?	2. IF YES, CHECK THE CORRESPONDING DESCRIPTION(S) BELOW. LPA SHOULD CONSULT NATURAL ENGLAND ON LIKELY RISKS FROM THE FOLLOWING:
All Planning Applications	
Infrastructure	Airports, helipads and other aviation proposals.
Wind & Solar Energy	
Quarry	
Rural Non Residential	
Residential	
Rural Residential	
Air Pollution	Pig & Poultry Units. Any other development/ industrial or commercial process that could cause AIR POLLUTION.
Combustion	General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment
Waste	

[6] The Impact Risk Zones (IRZs) dataset is a GIS tool which maps zones around each SSSI according to the particular sensitivities of the features for which it is notified and specifies the types of development that have the potential to have adverse impacts.

Natural England uses the IRZs to make an initial assessment of the likely risk of impacts on SSSIs and to quickly determine which consultations are unlikely to pose risks and which require more detailed consideration. Publishing the IRZs will allow LPAs, developers and other partners to make use of this key evidence tool.

http://www.naturalengland.org.uk/ourwork/planningdevelopment/impactriskzonesgistoolfeature.aspx

The type of development proposed is not listed as being a category for which the LPA should consult Natural England. The proposal is not judged detrimental to the near-by protected sites.

4.2 Habitats

Habitats present outside the works footprint should be suitably protected against any damages during works.

Trees to be retained should be protected during any construction work and guidance is given in the 'BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations' document. This standard requires a tree protection plan to be developed which involves erecting physical barriers to prevent damage to existing trees, with an exclusion area around the trees. It also looks at defining a root protection area and requires consideration when compulsory work is carried out within the root protection area.

4.3 Amphibians

Due to the absence of ponds in the general area, no further work is recommended with regards to amphibians and great crested newts in particular.

4.4 Reptiles

It was not possible to undertake a reptile survey in the time scale prior to planning application.

It is judged possible that slow worms are present on site. Should this be the case, the proposed development would entail the loss of a small area of reptile habitat and the potential killing and injuring of animals during ground clearance. To avoid this, a mitigation strategy is proposed:

- no ground clearance works should take place in the hibernation season (taken to be November to February)
- the installation of a reptile exclusion fencing should take place prior to the trapping and translocation of reptiles during suitable weather conditions between March and October. Captured animals should be released into a receptor habitat made suitable beforehand.

It is expected that a reptile survey, to confirm the above mitigation strategy, can be conditioned, should planning permission be granted. The survey would consist of placing artificial refuges (i.e. 0.5 m^2 tins or roofing felt) in areas of suitable reptile habitat and leaving them in place for at least 1 week prior to the survey commencing. The refuges would be checked on seven separate occasions, over four weeks at least, to establish presence / likely absence during suitable weather conditions (i.e. cool weather with no heavy rain but sunny intervals between showers, and ambient air temperatures between 10-20^{o}C).

Reptile surveys can be undertaken between March and October, the optimal months being April, May, June and September. Mid-summer temperatures and general activity levels are usually too high for refuges to be successfully used (surveys are highly weather dependent).

4.5 Birds

Although a breeding bird survey is not deemed to be necessary, on the basis that the site contains suitable habitat for breeding birds, consideration must be given to the timing of vegetation removal, if any is to take place.

Should there be a requirement to remove any trees that have the potential to be used by breeding birds, such works should be undertaken outside of the bird breeding season. The breeding bird season extends from March – August inclusive. It should be noted however that certain species are known to breed throughout the year (e.g. collard dove) and remain protected.

If trees cannot be removed outside of the bird breeding season, an inspection by a qualified ecologist must first be completed a maximum of 48hrs before works commence. If during the inspection a nest considered to be in use is discovered, works must be delayed until the young have fledged.

4.6 Hazel Dormouse

Although none were found during the site visit, dormice may be present on site sometimes. Should this be the case, the proposed development would entail the loss of a very small area of dormouse habitat and the potential killing and injuring of animals during vegetation clearance. To avoid this, a mitigation strategy is proposed:

- no ground clearance works should take place during the hibernation season (taken to be November to March);

- an inspection for dormouse nests by a qualified ecologist must first be completed a maximum of 48hrs before vegetation clearance commences, if done in April-October.

New hedges are proposed to be planted around the site; native species should be used to mitigate for the loss of potential dormouse habitat and include blackthorn, hawthorn, hazel, cherry, crab apple and honeysuckle.

4.7 Badger

No further work is recommended with regards to badgers.

4.8 Bats

Three category 2 trees have been identified on site. BCT's advice is as follows.

Table 8.4 Protocol for visual inspection of trees due to be affected by arboricultural work, to assess the value of the trees to bats. (Adapted from a protocol provided by Corylus Ecology Ltd.)

Tree category and description	Stage 1 Initial survey requirements	Stage 2 Further measures to inform proposed mitigation	Stage 3 Likely mitigation
Category 2 Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.	None. ***A consultant ecologist is unlikely to be required***	Avoid disturbance to trees, where possible. No further surveys.	Trees may be felled taking reasonable avoidance measures. Stop works and seek advice in the event bats are found, in order to comply with relevant legislation.

It is therefore recommended that, should trees need to be felled or works undertaken to them, this is done taking reasonable avoidance measures, i.e.

- Only cutting down the trees outside of nesting bird season and bat hibernation season; i.e. cut trees in September-October only.
- Checking if cavities are present and, should there be any, checking each cavity with an endoscope directly before cutting the tree
- Avoiding cutting through cavities
- Checking each cavity once it's cut down and leaving the log with cavity facing up overnight to allow any trapped animal to exit

Also, as lighting can be detrimental to roosting, foraging and commuting bats[7], the recommendations from the Bat Conservation Trust, titled Bats and Lighting in the UK, should be considered, when designing any lighting scheme for the proposed development (see Appendix C).

4.9 Other Species

There is some potential for hedgehogs to be present on site. Therefore any areas where mammals could be sheltering should be hand searched prior to disturbance. Excavations should not be left open for animals to fall into, or planks of wood should be placed to enable any animals which may fall into such a hole to escape.

Hedgehogs are a Species of Principal Importance under Section 41 of the NERC Act (2008 updated list). All mammals are afforded protection against unnecessary suffering by the Wild Mammals (Protection) Act 1996 (see Appendix A).

The People's Trust for Endangered Species PTES states:

'The major threat to stag beetles in the UK is the removal of larval habitat, i.e. dead wood. The removal of hedges and trees (both of which will have dead portions underground), as well as stumps, causes the greatest habitat loss. If stag beetles and/or stag beetle larvae are known or thought to be present at a site where an application for planning has been submitted, and are likely to be disturbed or destroyed whilst work is carried out at the site, it is recommended that someone with an understanding of the insects' requirements be

[7] http://www.bats.org.uk/pages/bats_and_lighting.html and http://www.batsandlighting.co.uk/index.html for more information

present to see that any larvae and/or adults are carefully translocated to a suitable natural or purpose-built habitat close by.'

It is therefore recommended that an ecologist be on site when any dead wood, wooden posts, shrubs, stumps, hedges or trees are removed, so that larvae or adults that are disturbed/dug up can be spotted, retrieved and placed out of harms way. It will be necessary to ensure that suitable relocation habitat be present or created prior to such translocation works (such as a large log pyramid and beetle buckets[8]).

4.10 Additional Recommendations: Enhancements

Ecological enhancements should where possible be incorporated into the proposed development to contribute towards the objectives of planning legislation below:
On 27 March 2012, the UK Government published the National Planning Policy Framework (NPPF) which states that "opportunities to incorporate biodiversity in and around developments should be encouraged"(Para 118).

The design and implementation of habitat enhancements could also be used to contribute towards the 'Home Quality Mark' or similar accreditation, should this be a consideration for this site.

Biodiversity enhancements for the site could include the following:

- Provision of hedgehog nesting boxes[9].
- Provision of 12cm square gaps under any new fencing to allow hedgehogs access onto all garden areas.
- Provision of ready-made bird boxes (sparrow terrace timber boxes or house martin nests for instance[10] or mix of open-fronted and hole-nesting boxes and constructed from woodcrete)[11].
- Provision of bat roosting spaces within the new buildings (examples can be found in: Williams, C (2010*). Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Build*. RIBA) or installation of ready-made bat boxes (such as Kent Bat Box[12], Habibat[13], EcoSurv Bat Box or Schwegler Bat tube[14])[15].
- Tree / shrub/ hedgerow planting (native species to be used only).
- Establish climbing plants on walls and other vertical structures[16].
- Establish wildflower plug/bulb planting in amenity grassland[17].

---

[8] Full information available here http://ptes.org/campaigns/stag-beetles/

[9] http://www.hedgehogstreet.org/pages/hedgehog-homes.html

[10] to benefit these declining urban bird species

[11] In order not to damage trees, free-hanging nesting boxes can be hung from a loop or hook over a branch. This method avoids the use of nails. It is also helpful to avoid predation.

[12] http://www.teach-organic.org.uk/uploadedfiles/CMS/pdf/bat_box.pdf

[13] Habibat is a large, solid bat box made of concrete with an internal roost space, which can be incorporated into the fabric of a building http://www.habibat.co.uk/

[14] http://www.bats.org.uk/publications_download.php/1109/BCT_BatBoxProductList_v4a.pdf

[15] It is highly recommended to install bird boxes near bat boxes to avoid birds from using the bat boxes to the detriment to bats.

[16] More information can be found here: http://www.greenblueurban.com/climbing-plant-guide.php and http://www.london.gov.uk/priorities/environment/urban-space/parks-green-spaces/green-roofs-walls

- Integration of green or grey roofs[18],[19],[20].
- Consider using grid mesh system (or Ground Reinforcement Grids) with topsoil and seeding with a wildflower species mix, to car parking areas and new access drives to retain some vegetation as well as drainage.
- Establish Fruit Espaliers[21].

Priority should be given to species present on the Kent BAP species list, which include great crested newt, common toad, viviparous lizard, slow-worm, grass snake, adder, house sparrow, tree sparrow, hedgehog, noctule, soprano pipistrelle, brown long-eared bat, brown hare, water vole, harvest mouse, dormouse, otter as well as many more species (see http://www.kentbap.org.uk/habitats-and-species/priority-species/).

[17] Spring flowering bulbs and plugs of nectar rich flowering plants should be embedded into amenity grassland to increase the biodiversity and amenity value of the grassland and to provide early sources of nectar for insects. Suitable bulbs include Snake's head fritillary *Fritillaria meleagris*, Ramsons *Allium ursinum*, Snowdrop *Galanthus nivalis*, Primrose *Primula vulgaris*, Bluebell *Hyacinthoides non-scriptus*, Wild daffodil *Narcissus pseudonarcissus*, Lesser celandine *Ranunculus ficaria*

[18] http://www.environment-agency.gov.uk/business/sectors/91967.aspx, http://www.london.gov.uk/priorities/environment/urban-space/parks-green-spaces/green-roofs-walls and http://publications.naturalengland.org.uk/publication/31036 for more information

[19] An example of a company with extensive experience in designing biodiverse roofs in Central London: the Green Roof Consultancy http://www.greenroofconsultancy.com

[20] 'Creating green roofs for invertebrates – a best practice guide' by Buglife http://www.kentbap.org.uk/images/uploads/Creating_Green_Roofs_for_Invertebrates_Best_practice_guidance.pdf

[21] http://apps.rhs.org.uk/advicesearch/profile.aspx?PID=319 for more information

5 References and Bibliography

- Joint Nature Conservation Committee (2003). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. JNCC, Peterborough. [22]

Websites Visited:

- http://maps.tunbridgewells.gov.uk/LocalViewPublic/Sites/khs2012_navigator/#
- https://cms.esriuk.com/tunbridgewells/Sites/KWT_External/
- http://magic.defra.gov.uk/MagicMap.aspx

With kind permission from Google Earth Brand

[22] http://www.jncc.gov.uk/pdf/pub90_HandbookforPhase1HabitatSurveyA5.pdf

Appendix A – Wildlife Legislation & Policy

The following is a summary of wildlife legislation and planning policy which affords protection to plants and animals and seeks to conserve, enhance and restore biodiversity. This section 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.

For further information, please see:
https://www.gov.uk/protected-species-and-sites-how-to-review-planning-proposals
and
https://www.gov.uk/government/policies/protecting-biodiversity-and-ecosystems-at-home-and-abroad/supporting-pages/species-protection

Commonly encountered protected species

Many species of plants, invertebrates and animals receive protection under the legislation detailed above. However, of these, the following are the most likely to be affected by development in the southeast:

Species	Legislation
Bats (all species) Dormice Great crested newts Otters Sand lizards and smooth snakes	The Wildlife and Countryside Act 1981 (as amended) & The Conservation of Habitats and Species Regulations 2010. These make it an offence to: • Deliberately or recklessly capture, injure or kill any wild animal of a European protected species • Deliberately or recklessly disturb wild animals of any such species • Damage or destroy their breeding site or resting place • Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead animal, or any part of, or anything derived from these species. Disturbance of animals includes in particular any disturbance which is likely • to impair their ability: - to survive, to breed or reproduce, or to rear or nurture their young, or - in the case of animals of a hibernating or migratory species, to hibernate or migrate; • to affect significantly the local distribution or abundance of the species to which they belong.

Species	Legislation
Breeding birds (in particular barn owls)	The Wildlife and Countryside Act 1981 (as amended). This makes it illegal to intentionally kill, injure or take any wild bird and to take, damage or destroy the nest (whilst being built or in use) or eggs.
Adders, grass snakes, common lizards and slow worms	The Wildlife and Countryside Act 1981 (as amended) (intentional killing and injuring only). This makes it illegal to kill or injure these animals.
Water voles	The Wildlife and Countryside Act 1981 (as amended). This makes it illegal to intentionally damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection; it is also an offence to intentionally disturb water voles while they are using these places.
White clawed crayfish	The Wildlife and Countryside Act 1981 (as amended). This makes it an offence to: • intentionally, or recklessly, kill or injure any of the above species, and/or; • sell, or attempt to sell, any part of the species, alive or dead. Advertises that he buys or sells, or intends to buy or sell.
Badgers	The Protection of Badgers Act 1992. This makes it an offence to: • Willfully killing, injures or takes, or attempts to kill, injure or take, a badger. • Cruelly ill-treating a badger, digging for badgers, using badger tongs, using a firearm other than the type specified under the exceptions within the Act. • Interfering with a badger sett by damaging, destroying, obstructing, causing dog a dog to enter a sett, disturbing an occupied sett - either by intent or by negligence. • Selling or offering for sale a live badger, having possession or control of a live badger. • Marking a badger or attaching any ring, tag, or other marking device to a badger.

The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) implements the Birds Directive (1979) and the Berne Convention (1979) into national legislation. The Wildlife and Countryside Act 1981 (as amended) includes a number of Schedules which are reviewed (usually every five years) on which details of the protected species, and their level of protection, are detailed. A

detailed summary of the sections of the Wildlife and Countryside Act, along with the protection afforded under them can be found within Paragraphs 118-122 of ODPM Circular 06/2005 (Circular06/2005)

Full details of the legislation can be found at www.jncc.gov.uk/page-3614 and details of the species listed on the Schedules can be found at:

- Birds www.jncc.gov.uk/PDF/waca1981_schedule1.pdf
- Animals www.jncc.gov.uk/page-1815
- Plants www.jncc.gov.uk/page-1816

There are no licensing functions within the Wildlife and Countryside Act for development activities which may affect a species protected under The Wildlife and Countryside Act 1981 (as amended) and works need to proceed following good practice and if appropriate rely on the 'incidental result of an otherwise lawful operation defence'. However, with regards to the water vole, where translocation of animals is proposed, Natural England does not feel this could be considered the incidental result of other activities and so would not be covered by the defence in the legislation. If there is no alternative to translocation, Natural England may be able to issue a licence to trap and translocate the water voles for the purpose of conservation.

The Countryside and Rights of Way Act 2000

The Wildlife and Countryside Act 1981 was amended by the Countryside and Rights of Way Act (CRoW Act) in 2000. The CRoW Act strengthened the protection afforded to species listed within the Schedules of the Wildlife and Countryside Act by adding 'reckless' to several of the offences and increased the penalties for wildlife offences.

In addition, Section 74 of the CRoW Act introduced a new duty on Government Ministers and Department to further the conservation of biodiversity for habitats and species of principal importance. This was superseded by Sections 40 and 41 of the Natural Environment and Rural Communities (NERC) Act of 2006. Section 40 provides that every public authority must, in exercising its functions, have regard to the purpose of conserving biodiversity. Details of the lists of habitats and species provided for at Section 41 of the NERC act can be found at www.ukbap-reporting.org.uk/news/details.asp?X=45. The ODPM Circular 06/2005 (Circular06/2005) place a clear responsibility on Local Planning Authorities to further the conservation of habitats and species of principal importance where a planning proposal may adversely affect them.

Full details of the legislation contained within the Countryside and Rights of Way Act can be found at www.opsi.gov.uk/acts/acts2000/ukpga_20000037_en_1.

The Protection of Badgers Act 1992

The legislation affording protection to badgers is primarily concerned with animal welfare and the need to protect badgers from activities such as baiting and deliberate harm. The Protection of Badgers Act 1992 makes it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger, or attempt to do so;
- To intentionally or recklessly interfere with a sett (this includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

As with The Wildlife and Countryside Act 1981 (as amended), there are several defences to prosecution in the legislation and the text should be consulted for details of these. Penalties for offences include fines up to £5,000, plus up to six months imprisonment for each illegal sett interference, or badger death or injury.

Full Details of the legislation can be found at
www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1.

Conservation of Habitats and Species Regulations 2010 (SI 2010/490) came into force (the "2010 Regulations").

From 1st April 2010, these are now the principal means by which the Habitats Directive is transposed in England and Wales. This updates and consolidates all the amendments to the Regulations since they were first made in 1994.

The 2010 Regulations implement the European Habitats Directive into national legislation. Details of those species (often referred to as European protected species or EPS) which receive protection under these regulations can be found in Schedule 2 of the 2010 Regulations.

Full details of the legislation can be found at
http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

The Regulations state that:

Part 3 - 41.—
(1) A person who:

(a) deliberately captures, injures or kills any wild animal of a European protected species,
(b) deliberately disturbs wild animals of any such species,
(c) deliberately takes or destroys the eggs of such an animal, or
(d) damages or destroys a breeding site or resting place of such an animal,

is guilty of an offence.

(2) For the purposes of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely:

(a) to impair their ability:

(i) to survive, to breed or reproduce, or to rear or nurture their young, or
(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate;

Or

(b) to affect significantly the local distribution or abundance of the species to which they belong.

(3) It is an offence for any person:

(a) to be in possession of, or to control,
(b) to transport,
(c) to sell or exchange, or
(d) to offer for sale or exchange, anything to which this paragraph applies.

(4) Paragraph (3) applies to—

(a) any live or dead animal or part of an animal—

(i) which has been taken from the wild, and

(ii) which is of a species or subspecies listed in Annex IV(a) to the Habitats Directive; and

(b) anything derived from such an animal or any part of such an animal.

(5) Paragraphs (1) and (3) apply regardless of the stage of the life of the animal in question.

(6) Unless the contrary is shown, in any proceedings for an offence under paragraph (1) the animal in question is presumed to have been a wild animal.

(7) In any proceedings for an offence under paragraph (3), where it is alleged that an animal or a part of an animal was taken from the wild, it is presumed, unless the contrary is shown, that that animal or part of an animal was taken from the wild.

(8) A person guilty of an offence under this regulation is liable on summary conviction to imprisonment for a term not exceeding six months or to a fine not exceeding level 5 on the standard scale, or to both.

(9) Guidance as to the application of the offences in paragraph (1)(b) or (d) in relation to particular species of animals or particular activities may be published by—

(a) the appropriate authority; or

(b) the appropriate nature conservation body, with the approval of the appropriate authority.

(10) In proceedings for an offence under paragraph (1)(b) or (d), a court must take into account any relevant guidance published under paragraph (9).

(11) In deciding upon the sentence for a person convicted of an offence under paragraph (1)(d), the court must in particular have regard to whether that person could reasonably have avoided the damage to or destruction of the breeding site or resting place concerned.

Licences may be obtained to permit activities that would otherwise be unlawful, but they can only be granted for certain purposes. Those purposes include that of preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment (Regulation 42(10). It is the imperative reasons of overriding public interest element of this that is relied upon by those seeking to carry out development where those activities affect a European protected species or their places used for shelter or protection. Even where that purpose is met, however a licence may only granted where:

- There is “no satisfactory alternative”; and
- The action authorised “will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”

Natural England issues licences for this purposes under Regulation 44(2)(e).

It is not the responsibility of Natural England staff to decide when a licence is required/recommended. This decision is down to the proposer of the operation who should consider whether, on balance and usually with the assistance of an ecological consultant, the operation would be reasonably likely to result in the commission of an offence under these Regulations. This view should be formed in the light of survey information and specialist knowledge. A licence simply permits an action that is otherwise unlawful. A licence should be

applied for if, on the basis of survey information and specialist knowledge, it is considered that the proposed activity is reasonably likely to result in an offence (killing, breeding site destruction, etc – see above).

It should be noted that the protection afforded to species under the UK and EU legislation referred to here is in addition to that provided by the planning system and the applicant must ensure that any activity they undertake on the application site (regardless of whether or not planning permission has been obtained) complies with the appropriate wildlife legislation. Failure to do so may result in fines and, potentially, a custodial sentence.

Biodiversity Action Plans

Biodiversity Action Plans (BAPS) set out actions for the conservation and enhancement of biological diversity at various spatial scales. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs).

The UK BAP was the UK's response to the 1992 Convention on Biological Diversity in Rio de Janeiro. Following a review in 2007 a list of 1149 priority species and 65 priority habitats has been adopted, which are given a statutory basis for planning consideration under Section 40 of the NERC Act 2006.

Further information about Kent BAP can be found here: http://www.kentbap.org.uk/habitats-and-species/priority-species/

Red Data Books

British Red Data Books (RDB) are an additional method for classifying the rarity of species, and are often seen as a natural progression from Biodiversity Action Plans.

RDB species have no automatic legal protection (unless they are protected under any of the legislation previously mentioned). Instead they provide a means of assessing rarity and highlight areas where resources may be targeted. Various categories of RDB species are recorded, based on the IUCN criteria and the UK national criteria based on presence within certain numbers of 10x10km grid-squares (see http://www.jncc.gov.uk/page-3425). As with Biodiversity Action Plans, where possible, steps should be taken to conserve RDB species which are to be affected by development.

Appendix B – Plates

IMG_2644

IMG_2645

IMG_2646

IMG_2647

IMG_2648

IMG_2649

IMG_2650

IMG_2651

IMG_2652

IMG_2653

IMG_2654

Appendix C - Bats and Lighting in the UK

Bat Conservation Trust and Institution of Lighting Engineers Summary of requirements

The two most important features of street and security lighting with respect to bats are:
1. **The UV component**. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. **Restriction of the area illuminated**. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:
Low
• Low pressure Sodium Lamps (SOX) emit a minimal UV component.
• High pressure Sodium Lamps (SON) emit a small UV component.
• White SON, though low in UV, emit more than regular SON.

High
• Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
• Mercury lamps (MBF) emit a high UV component.
• Tungsten Halogen, if unfiltered, emit a high UV component
• Compact Fluorescent (CFL), if unfiltered, emit a high UV component.

Variable
• Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.

Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting
Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting
The above recommendations concerning UV output and direction apply. In addition:
Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
Lamps of greater than 2000 lumens (150 W) must not be used.
Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.

Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.