Cookham Dene, Chislehurst, Kent

Preliminary Ecological Appraisal

25th April 2023 / Ref No

Client: Mr M Benaron

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1 Introduction

1.1 Background to the Scheme

KB Ecology Ltd was commissioned to undertake a baseline ecological survey and a preliminary ecological appraisal with regards to a proposed development at Cookham Dene, Cookham Dene Close, Chislehurst BR7 5QD, Kent, in support of a planning application for re-roofing of the house, changes to the garage and coach house, erection of a pool house to the south east of the house and of an agricultural hangar in the south tip of the site.

1.2 Survey Location/Area

The site is located at approximately TQ 448 696. 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.

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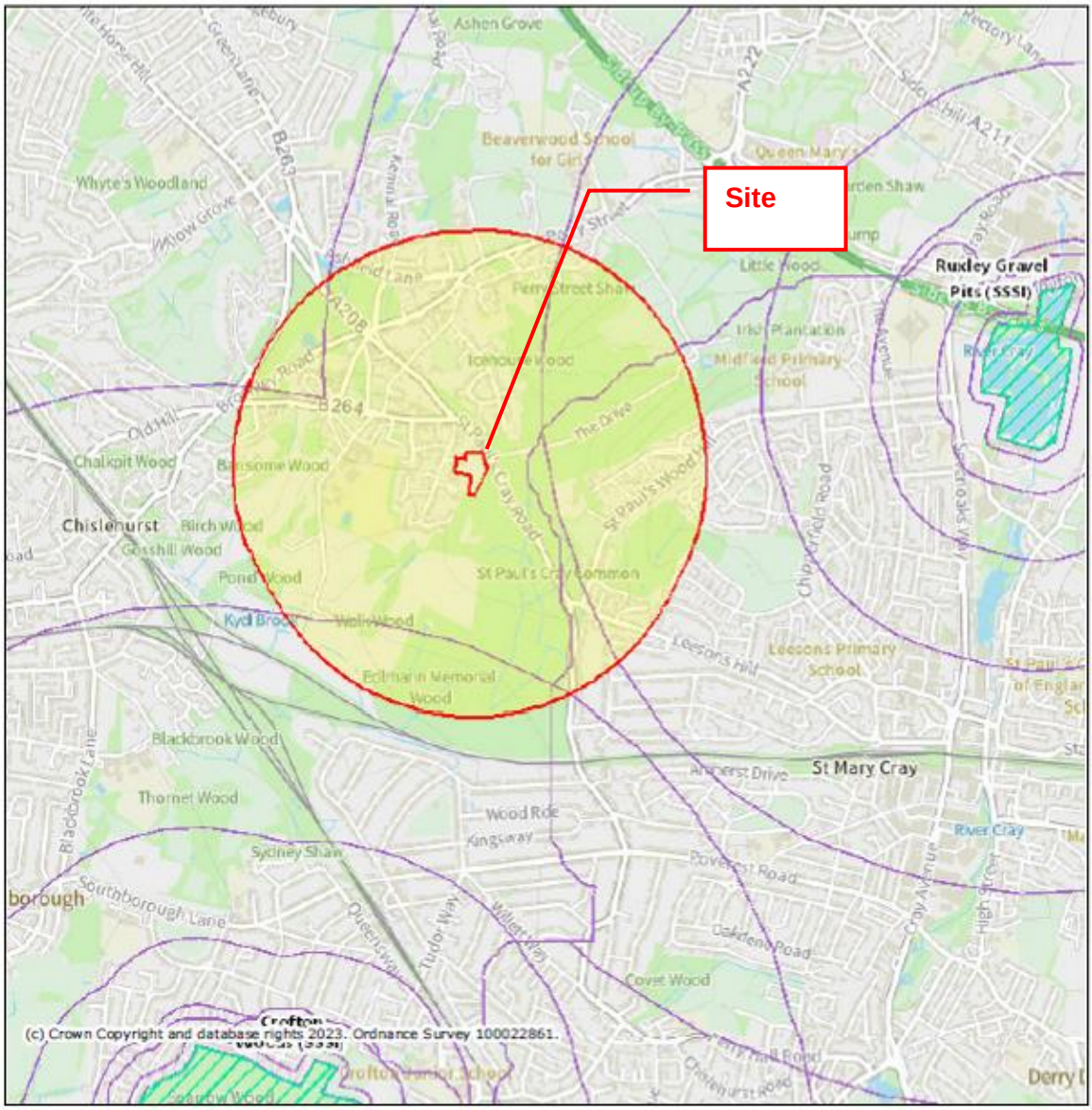
Figure 1



Legend

- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

0 0.75 1.5
km

Projection = OSGB36
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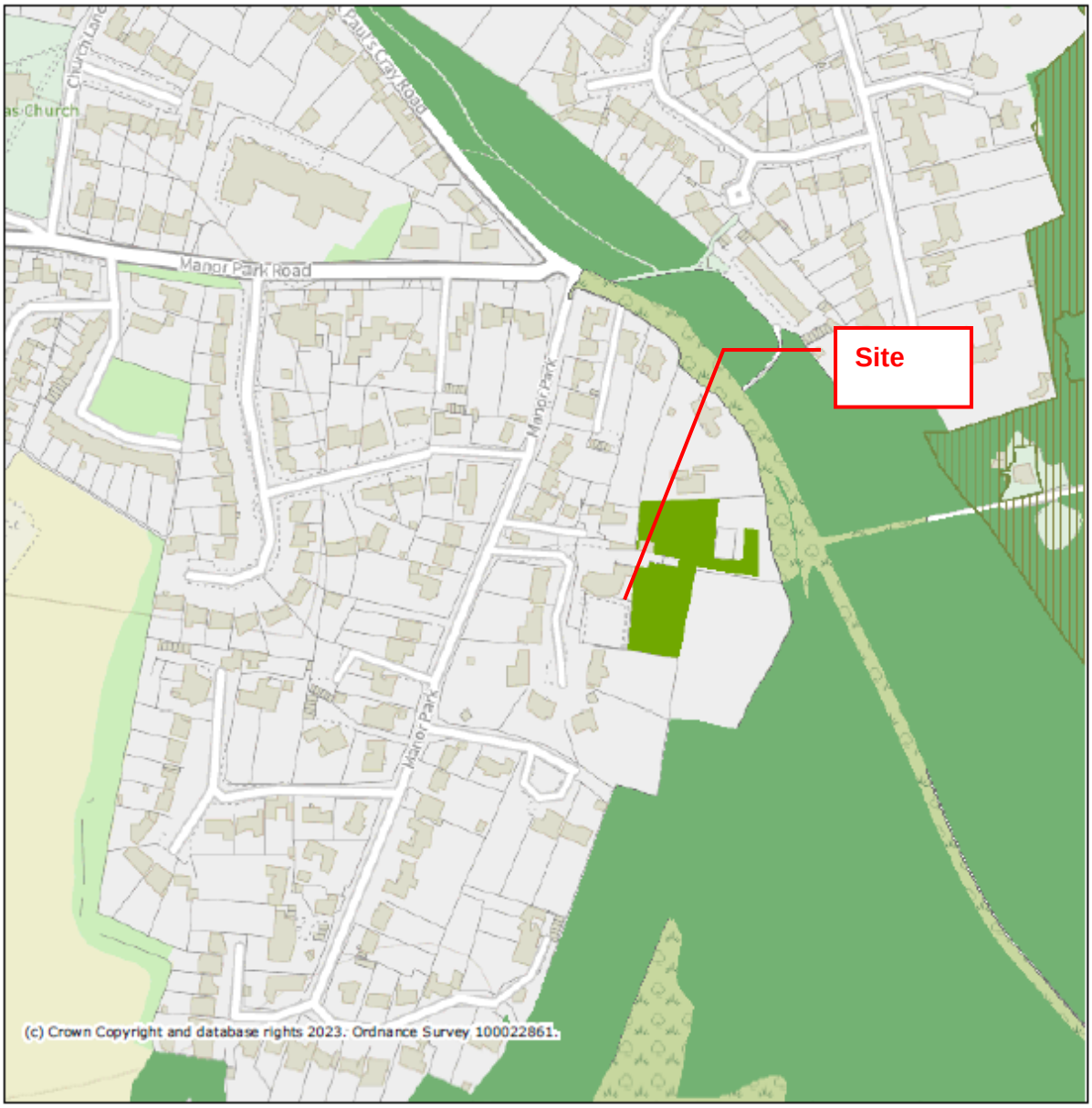
MAGIC

Figure 2- Habitats



Legend

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

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km

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Figure 3: indicates location of ponds and great crested newt records from KRAG data search

2 Methodology

2.1 Desk Study

Internet-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].

2.2 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 3rd January 2023 by Katia Bresso CEnv MCIEEM, a qualified professional consultant ecologist with over 20 years of experience[3], licensed bat surveyor (Class Licence CL19, Level 3, Registration Number: 2016-27133-CLS-CLS) and Registered Consultant of the Bat Mitigation Class Licence (BMCL) WML-CL21 with Natural England (Registered Consultant Reference Number RC056, since May 2015), licensed dormouse surveyor (Class Survey Licences Registration Number 2016-22060-CLS-CLS) and licensed great crested newt surveyor (Class Licence registration number 2020-50030-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)'.

Particular attention was given to signs of use by bats and barn owls. A visual survey was undertaken looking for evidence of roosting bats and roosting/nesting barn owls, including signs such as live or dead bats/owls, feathers, droppings, pellets, nest debris and eggs, using an endoscope[4], high powered torch (Cluson CB1 Clubman Standard High Power, 500,000 candle power), night vision scope and binoculars where needed.

All trees were also checked for suitability for roosting bats.

Bat roosting potential of all structures, buildings and trees was classified according to the following criteria set out in the Table below, taken from the Bat Conservation Trust Good

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

[2] Due to the scale of the project, it was judged disproportionate to undertake a costly data search with the local Biological Record Centre as the data would be unlikely to be relevant to this site.

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

[4] RIDGID CA-350x Inspection Camera System 63888

Practice Guidelines (2016).

Suitability	Criteria
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protections, conditions and surrounding habitats.

3 Baseline Ecological Conditions

3.1 Designated Nature Conservation Sites

The site is not part of, nor directly adjacent to, any statutory designated sites and none are located within 1km of the site.

3.2 Habitats

The site is surrounded by dwellings and woods. It consists of a gravel drive leading to a large three-storey house, with detached annex building (coach house) and garage, as well as a large garden, with formal short-mowed lawns, yew hedges and ornamental planting and a small orchard (with apple and plums) with vegetable beds to the north. A small wood is present to the south of a large expanse of short-mowed grass, which joins further adjacent wood to the east, with cherry laurel, Scott's pine, English elm, birch, hazel, oak, holly and blackthorn. *Leylandii* hedges line the north and south-west boundaries.

The site is listed under the Traditional Orchard Survey map[5] as 'LOND0480', with an area of 0.457ha (2020 Inventory). However, historical aerial photos from 1940 only show a small area of orchard to the very north of the site (in yellow below), where the trees are still present and over only 0.2ha (not 0.457ha). Only circa 13 trees were still present in 2003. By 2005, more trees have been planted to the south but these trees are still present and are not fruit trees. Thus the extent of traditional orchard is not correct in the Inventory but, as the minimum size of a Traditional Orchard is defined as five trees with crown edges less than 20m apart[6], the area to the north of the garages and east of the vegetable beds is still classified as traditional orchard, which is a 'Priority Habitat'.

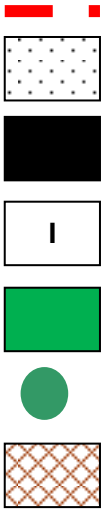
[5] see https://ptes.org/get-involved/surveys/countryside-2/traditional-orchard-survey/orchard-maps/ and https://naturalengland-defra.opendata.arcgis.com/datasets/traditional-orchards-hap-provisional-england/

[6] https://data.jncc.gov.uk/data/2829ce47-1ca5-41e7-bc1a-871c1cc0b3ae/UKBAP-BAPHabitats-56-TraditionalOrchards.pdf

A circa 30m long and 3m wide earth bund covered in tree and grass cuttings is present in the north-east corner of the site, near the adjacent woood. A sunken trampoline and children's play area are present near the formal garden, in the centre of the site.

Plates are present in Appendix B. Figure 4 below shows the location of the habitats.

Legend of Phase 1 habitat survey map hereafter:



Site boundary

Gravel access drive

Building

Improved grassland/ short-mowed lawn

Woodland

Individual tree (number and location approximate)

Ornamental planting

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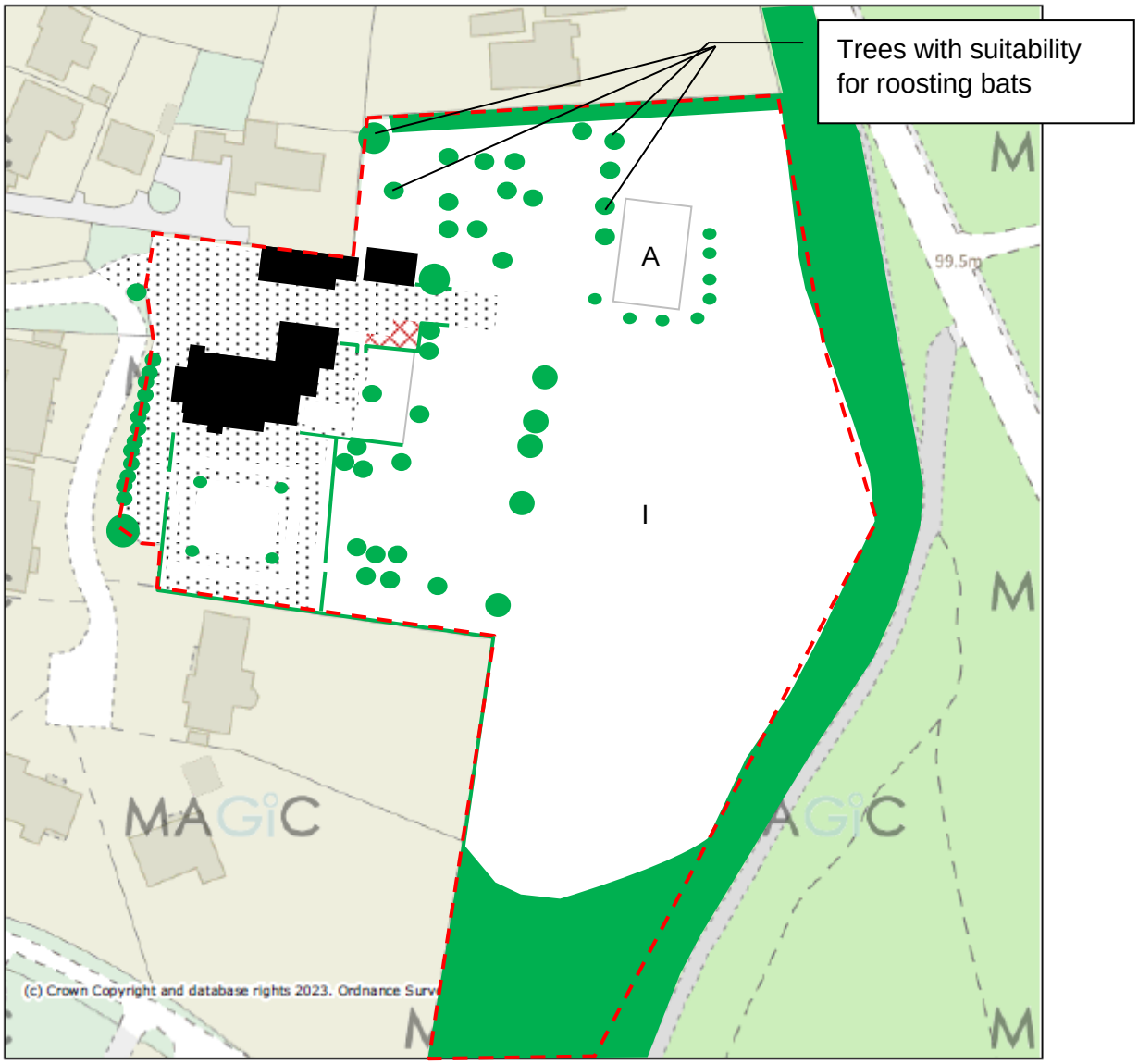
Figure 4



Legend

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3.3 Amphibians

The data search carried out with KRAG (Enquiry No: CES/22/277) revealed that the closest recorded Great Crested Newt *Triturus cristatus* site is located at Scadbury Country Park, 0.58 km to the NE (record id: 105102).

Great crested newts favour areas of high pond density and occupancy levels can exceed 40% of ponds when conditions are favourable. KRAG's database risk assessment indicates that the likelihood of presence of great crested newts *in the overall area* is *'Possible'*[7], with only twelve ponds present within 1km.

Like nearly all amphibians, the great crested newt is dependent on water-bodies for breeding but usually spends most of its life on land.

The 'Great Crested Newt Mitigation Guidelines' (English Nature 2001) state the following:
'Great crested newts have been found to move over considerable distances (up to 1.3km from breeding sites). However, the vast majority of newts will inhabit an area much closer to the pond, and the exact distribution and migration patterns of newts on land depends on a variety of factors. The quality of terrestrial habitat near to breeding ponds is important, as are the lack of barriers to dispersal (such as fast-flowing rivers, or very busy roads). The distribution of ponds and hibernation opportunities may also influence movements. […] Several studies have been conducted which reveal a great deal of variation, but great crested newts commonly move between ponds that are within around 250m of each other.'

In *Advice for land managers,* Natural England (2007) states:

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

'Great crested newt may disperse several hundred metres, sometimes over 1km, from the breeding pond, though at most sites the majority of the population is normally found within around 100m of it.'

No ponds are present on site or within 100m. Four ponds are present within 250m: a cluster of three ponds is present 200m to the south-east, on the other side of St Paul's Cray road and a fourth pond is present 230m to the south-west. All the ponds are present within woodland.

The Great Crested Newt Conservation Handbook, 2001 states that 'very short pasture is easily traversed by newts, and provides night-time foraging, but little in the way of shelter' (Great Crested Newt Conservation Handbook, 2001). More optimal habitats include woodland, scrub, ditches, hedgerows, taller/rougher grassland.

Thus, due to the distance to the nearest pond, it is judged unlikely that great crested newts would be present on site (as there is plenty of suitable terrestrial habitat nearer the ponds).

However toads may be present in the woodland on site during their terrestrial phase of life.

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 Schedule 2 of the Conservation of Habitats and Species Regulations 2017 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/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects

3.4 Reptiles

The KRAG datasearch revealed that the closest recorded reptile is slow-worm, located at St Paul's Cray Common, 0.1 km to the E (record id: 126912). 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:	HIGH	0.30
Slow-worm:	HIGH	0.10
Sand Lizard:	*unlikely*	*90.63*
Grass Snake:	Possible	2.22
Adder:	*unlikely*	*5.26*
Smooth Snake:	n/a	n/a

Reptile survey effort in local area is considered to be average.

The proposed development area consists of grassland, which is species poor, heavily managed and kept at a short sward, without a thatch layer. This habitat is considered unsuitable for common reptile species, due to a lack of cover from predators and foraging opportunities.

However a small number of reptiles could be present in and near the earth bund in the north-east corner of the site. Also, if present locally, some reptiles could be hibernating under tree and hedge roots.

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). The adder is also a Priority Species under the Kent Biodiversity Strategy[8].

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 and in gaps in soffit or under hanging tiles on the buildings.

No signs of barn owl *Tyto alba* were found during the survey.

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

It is considered that the boundary trees and small woodland to the south have potential to support the hazel dormouse *Muscardinus avellanarius* due to connection to suitable woodlands (some being ancient woodlands[9]) and known presence of the species near-by. However, due to the very small size of the suitable habitat, it would only be a small part of an individual dormouse's range (Natural England/DEFRA indicate that the range of one dormouse home is 1 to 1.5 hectares of woodland or 300 metres of hedge[10]).

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 2017 and are therefore a "European Protected Species" EPS) . The dormouse is also listed as species of principal conservation importance (See Appendix A).

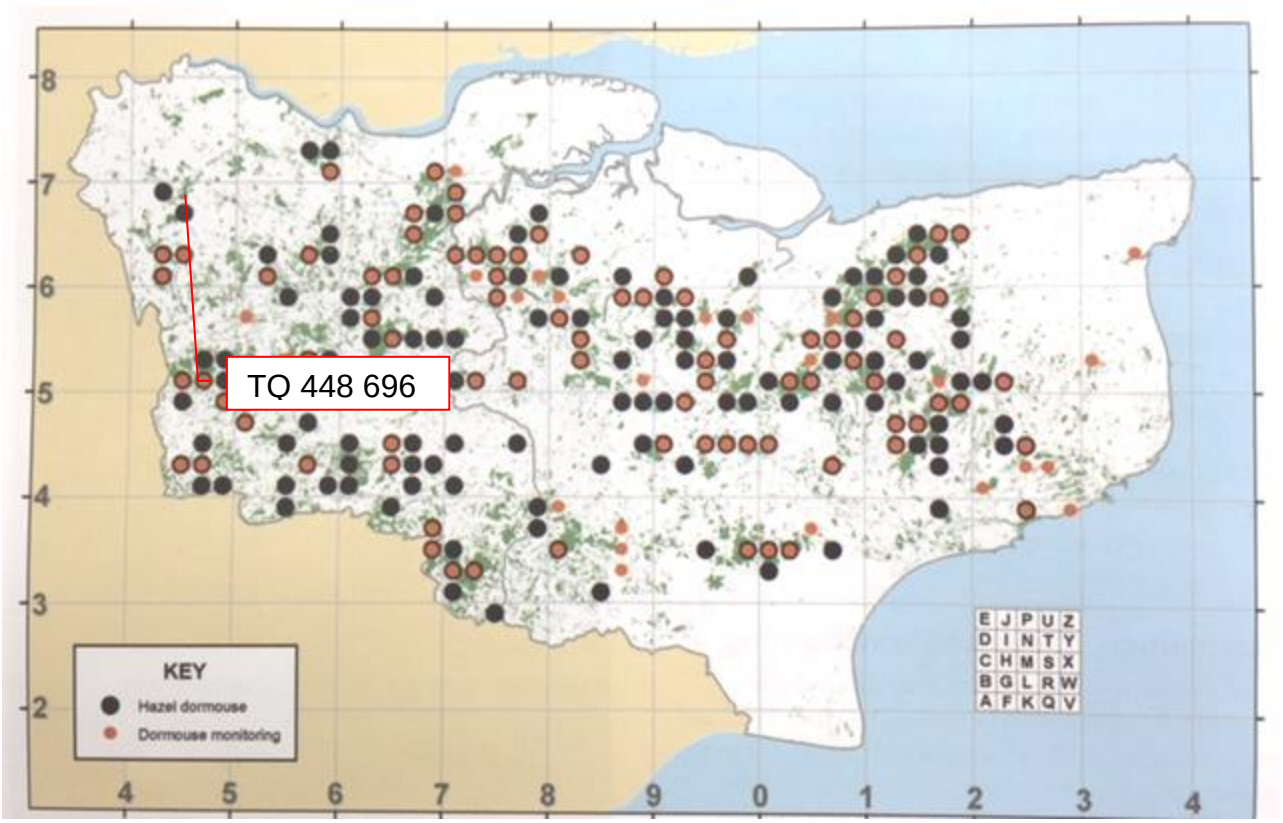
For more information, guidance from Natural England is available at https://www.gov.uk/hazel-dormice-protection-surveys-and-licences

Map showing known presence of dormice in Kent (from Mammals of Kent, 2015):

[8] http://kentnature.org.uk/uploads/files/Nat-Env/Kent%20Biodiversity%20Strategy%202020.pdf

[9] Land that has had continuous woodland cover since at least 1600 AD

[10] https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects)



3.7 Badger

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

3.8 Bats

No bats nor signs of bats were found during the internal/external inspection of the buildings.

The house only has a very restricted roof space as most roof spaces have been converted. But there are gaps into the soffit boxes, the roof is covered in clay tiles and the first floor walls are covered in clay hanging tiles, which provide high suitability for crevice-dwelling roosting bats.

The coach house/annex doesn't have any unconverted roof spaces but also has a clay tiled roof, also offering high suitability for roosting bats.

The garage has Redland concrete roof tiles which don't generally offer gaps to bats but some tiles are missing, providing low suitability for roosting bats.

A number of fruit trees offer medium to high suitability for roosting bats due to the presence of cavities in their trunk/branches. A thorough endoscope inspection was carried out and no signs of bats were found, only woodlice, snails and slugs.

The site is likely to be used by 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 2017 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 surroundings have potential to support hedgehogs (*Erinaceus europaeus*), which are a Species of Principal Importance under Section 41 of the NERC Act (2008 updated list) and an Indicator Species under the Kent Biodiversity Strategy[11].

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*[12], 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.

[11] http://kentnature.org.uk/uploads/files/Nat-Env/Kent%20Biodiversity%20Strategy%202020.pdf

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

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

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

The ecological mitigation hierarchy should be applied when considering development which may have a significant effect on biodiversity. Such hierarchy should follow these principles[13],:

1. Avoidance – development should be designed to avoid significant harm to valuable wildlife habitats and species[14].
2. Mitigation – where significant harm cannot be wholly or partially avoided, it should be minimised by design or through the use of effective mitigation measures.
3. Compensation – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, compensation should be used to provide an equivalent value of biodiversity.

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.

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13 https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications#agree-avoidance-mitigation-or-compensation-measures

14 Avoidance is always the preferred form of mitigation. It involves steps taken to avoid deliberate killing, injury or disturbance to bats and to existing roosts. The great majority of roosts are used only seasonally so there is usually some period when bats are not present and works can occur without impacting bats. By gathering ecological data about a bat roosting site at the start of development or maintenance works, it may be possible to 'design out' the impacts of a development by retaining the roosting site and building around it. Care should be given to ensure commuting routes to and from the roost are also retained and indirect impacts controlled for, such as the impact from the addition of artificial lighting.

4.1 Designated Nature Conservation Sites

A site check report was generated for the site using the Impact Risk Zones on the Magic website[15]:

Site Check Report Report generated on Fri Jan 13 2023
You selected the location: Centroid Grid Ref: TQ44836952
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)

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	
Minerals, Oil & Gas	Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.
Rural Non Residential	
Residential	
Rural Residential	
Air Pollution	Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.
Combustion	
Waste	
Composting	
Discharges	
Water Supply	
Notes 1	
Notes 2	
GUIDANCE - How to use the Impact Risk Zones	/Metadata_for_magic/SSSI IRZ User Guidance MAGIC.pdf

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 any protected sites.

4.2 Habitats

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.

The fruit trees are to remain untouched and thus the 'traditional orchard' use and management can carry on, unimpacted. It is recommended to follow the management guidelines from the 'People's Trust for Endangered Species':
https://ptes.org/campaigns/traditional-orchard-project/

4.3 Amphibians

Pond loss is often seen as the most damaging impact on great crested newt populations, but the loss of terrestrial habitat can also have serious consequences. Great crested newts live

[15] 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

on land for the majority of their lives, and so loss of terrestrial areas, particularly those close to the breeding pond, can be very damaging. The main effect of habitat loss is reduction in population size, reduced foraging opportunities, reduced refuge opportunities leading to exposure to predators or harsh conditions, and unsuccessful hibernation.

There are a number of development activities which can affect great crested newts, which should be fully considered at the application stage. Great crested newts can migrate more than 500 metres from their breeding ponds in areas of suitable terrestrial habitat. However, generally the scale of potential impacts will decrease as the distance from the breeding pond increases.

Natural England provides a rapid risk assessment tool to work out whether a licence will be needed.

Application tools: (1) "Do I need a licence?" - rapid risk assessment
Caveats and limitations
T**his risk assessment tool has been developed as a general guide only**, and it is inevitably rather simplistic. It has been generated by examining where impacts occurred in past mitigation projects, alongside recent research on newt ecology. It is not a substitute for a site-specific risk assessment informed by survey. In particular, the following factors are not included for sake of simplicity, though they will often have an important role in determining whether an offence would occur: population size, terrestrial habitat quality, presence of dispersal barriers, timing and duration of works, detailed layout of development in relation to newt resting and dispersal. The following factors could increase the risk of committing an offence: large population size, high pond density, good terrestrial habitat, low pre-existing habitat fragmentation, large development footprint, long construction period. The following factors could decrease the risk: small population size, low pond density, poor terrestrial habitat, substantial pre-existing dispersal barriers, small development footprint, short construction period. You should bear these mitigating and aggravating factors in mind when considering risk.
It is critical that, even if you decide not to apply for a licence, you ensure that any development takes account of potential newt dispersal. Where great crested newts are present, landuse in that area must ensure there is adequate connectivity. Retaining and improving connectivity will often involve no licensable activities.

Guidance on risk assessment result categories
"Green: offence highly unlikely" indicates that the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed. Therefore, no licence would be required. However, bearing in mind that this is a generic assessment, you should carefully examine your specific plans to ensure this is a sound conclusion, and take precautions (see **Non-licensed avoidance measures tool**) to avoid offences if appropriate. It is likely that any residual offences would have negligible impact on conservation status, and enforcement of such breaches is unlikely to be in the public interest.
"Amber: offence likely" indicates that the development activities are of such a type, scale and location that an offence is likely. In this case, the best option is to redesign the development (location, layout, methods, duration or timing; see **Non-licensed avoidance measures tool**) so that the effects are minimised. You can do this and then re-run the risk assessment to test whether the result changes, or preferably run your own detailed site-specific assessment. Bear in mind that this generic risk assessment will over- or under-estimate some risks because it cannot take into account site-specific details, as mentioned in caveats above. In particular, the exact location of the development in relation to resting places, dispersal areas and barriers should be critically examined. Once you have amended the scheme you will need to decide if a licence is required; this should be done if on balance you believe an offence is reasonably likely.
"Red: offence highly likely" indicates that the development activities are of such a type, scale and location that an offence is highly likely. In this case, you should attempt to re-design the development location, layout, timing, methods or duration in order to avoid impacts (see **Non-licensed avoidance measures tool**), and re-run the risk assessment. You may also wish to run a site-specific risk assessment to check that this is a valid conclusion. If you cannot avoid the offences, then a licence should be applied for.

Below is the risk assessment, should GCNs breed in a pond within 250m:

Component	**Likely effect** (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	**Notional offence probability**
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.01
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.01
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

As the proposed agricultural hangar is less than 0.1ha, no impact is expected onto great crested newts and no further work is recommended for this species.

4.4 Reptiles

As the earth bund it to remain unimpacted, no impact is expected onto reptiles.

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 the clearance works, if any is to take place.

The effect on birds can be avoided by undertaking any vegetation clearance and by starting the building works outside of the nesting season (which extends from March – August

inclusive[16]) or only after a survey has confirmed the absence of nesting birds[17]. New hedgerow/trees/scrub planted and bird nesting boxes erected as part of the proposed development can replace the habitat lost.

4.6 Hazel Dormouse

A small number of birch trees will be lost to the proposed agricultural hangar (18mx 17m). Such trees do not offer best quality habitat for dormice and, if used by dormice, their loss would be unsignificant compared to the range of one dormouse home (which is 1 to 1.5 hectares of woodland or 300 metres of hedge[18]).

Therefore the following precautionary felling strategy is judged adequate to ensure no impact onto dormice:

- The trees should be cut back to stump level during hibernation (taken to be November to March included), when dormice are hibernating at ground level;
- Then the stump would be removed during the active season (May to October), once dormice would have moved away from the area.

4.7 Badger

No impact is expected onto badgers and thus no further work is recommended for this species. However, as sett use can fluctuate (with setts becoming active when were not previously and new setts appearing over time), a pre-commencement of works badger survey is recommended if they works take place less more than one year after the date of the site visit of this report.

4.8 Bats

Should bats be roosting on site, the proposed development would lead to a loss of habitat and animals could be killed or injured during the works.

The Bat Conservation Trust's guidelines provide a table stating the 'minimum number of presence/absence survey visits required to provide confidence in negative preliminary roost assessment from buildings, built structures and trees in summer.

[16] It should be noted however that certain species are known to breed throughout the year (e.g. collard dove) and remain protected.

[17] Inspection by a qualified ecologist must first be completed a maximum of 48hrs before clearance works commence. If during the inspection a nest considered to be in use is discovered, works must be delayed until the young have fledged.

[18] https://www.gov.uk/guidance/hazel-or-common-dormice-surveys-and-mitigation-for-development-projects)

Garage

House and Coach House

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey[a] (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey.[b]	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn.[b]

[a] Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see Section 5.2.9). If there is a possibility that quiet calling, late-emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

[b] Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.

Table 7.1 Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability	Moderate roost suitability	High roost suitability
May to August (structures) No further surveys required (trees)	May to September[a] with at least one of surveys between May and August[b]	May to September[a] with at least two of surveys between May and August[b]

4.8.1 House and Coach House

Should roof and/or hanging tiles of the House and/or Coach House be impacted, it is recommended that three night-time surveys are undertaken between May and August. The surveys should be carried out at 3 weeks interval as a minimum in order to sample a long enough period of bats' active season[19].

4.8.2 Garage

Should the roof tiles of the garage be impacted, one survey is needed between May and August to check for presence of roosting bats.

4.8.3 General considerations

None of the trees with suitability for roosting bats are to be impacted.

Besides, as lighting can be detrimental to roosting, foraging and commuting bats[20], the recommendations from the Bat Conservation Trust and the Institution of Lighting Professionals, titled 'Guidance Note 8 Bats and Artificial Lighting'[21], should be considered, when designing any lighting scheme for the proposed development.

[19] General guidance for carrying out bat surveys suggests that they only take place in optimum weather conditions in order to maximise the likelihood of recording bats if they use the site being surveyed. It is usually advised to avoid very heavy rain, strong winds, mists and dusk temperatures below 7oC.

[20] https://www.bats.org.uk/about-bats/threats-to-bats/lighting

[21] https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

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 be backfilled, covered overnight, or ramps placed in to allow any animals to escape.

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

Should any areas of wood be impacted by the proposed works, it would therefore be 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[22]).

4.10 Additional Recommendations: Enhancements

Ecological enhancements should where possible be incorporated into the proposed development to contribute towards the objectives of planning legislation.

The Government announced it would mandate net gains for biodiversity in the Environment Bill in the 2019 Spring Statement. The Environment Bill received Royal Assent on 9 November 2021, meaning it is now an Act of Parliament. Mandatory biodiversity net gain as set out in the Environment Act applies in England only by amending the Town & Country Planning Act (TCPA) and is likely to become law in 2023. Biodiversity net gain requires developers to ensure habitats for wildlife are enhanced and left in a measurably better state than they were pre-development. They must assess the type of habitat and its condition before submitting plans, and then demonstrate how they are improving biodiversity – such as through the creation of green corridors, planting more trees, or forming local nature spaces. Green improvements on site would be encouraged, but in the rare circumstances where they are not possible, developers will need to pay a levy for habitat creation or improvement elsewhere[23].

Under section 40 of the NERC Act (2006), paragraph 174 of the NPPF (2021) and the Environment Act (2021), biodiversity must be maintained and enhanced through the planning system. Additionally, in alignment with paragraph 180 of the NPPF 2021, the implementation of enhancements for biodiversity should be encouraged.

Suggested biodiversity enhancements are listed below, as a palette for the developer to choose from:

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

[23] https://deframedia.blog.gov.uk/2019/03/13/government-to-mandate-biodiversity-net-gain/

- Provision of ready-made bird boxes[24] on retained trees;
- Provision of integrated 'swift bricks' in new buildings (as these are often occupied by other small cavity-nesting birds[25],[26])[27]. A ratio of at least two per residential dwelling, or one per 50sqm of commercial floor space is generally accepted now as good practice (see BS 42021:2022). It is suggested better to install them in small groups of 2/6 approx. one metre+ apart in suitable locations at a minimum height of 4 metres (5 metres is better).[28]
- Provision of bat boxes on retained mature trees[29].
- Provision of owl boxes in trees[30]
- Provision of beetle banks[31].
- Planting of hedges with dormouse friendly species (using native species)[32].
- Establish climbing plants on walls and other vertical structures[33].
- Establish wildflower plug/bulb planting[34].
- Restore a meadow[35]

[24] Integrated nest boxes in new buildings are preferred as they provide longer term nesting opportunities.

[25] https://drive.google.com/file/d/1ljcJ7rIkNMrr4lxd41XcBU3YC6IFKM6z/view

[26] https://actionforswifts.blogspot.com/p/swift-bricks.html

[27] Boxes integrated into buildings offer much greater longevity but need to be considered in the design process. One study found that incorporating bird/bat boxes into walls could cause cold spots on the interior, leading to condensation and possibly mould. They recommend additional insulation to prevent this; advice from an architect is advisable.

[28] Please note that there may be a need to provide insulation around the integrated box (thickness of 5 cm of insulation) in order to increase the thermal resistance of this wall and thus avoid the risk of condensation. The project architect should be consulted about such matters.

[29] https://www.bats.org.uk/our-work/buildings-planning-and-development/bat-boxes

[30] More information can be found here http://www.barnowltrust.org.uk/infopage.html?Id=56

[31] A tussocky grass strip through the middle of a field, which provides essential over-wintering habitat for many insects and spiders. http://www.rspb.org.uk/Images/Beetle%20banks_tcm9-133200.pdf for more information

[32] Possible species, which also provide food for dormice and grow relatively quickly, include bramble *Rubus fruticosus* agg., hawthorn *Crataegus monogyna*, honeysuckle *Lonicera* species, and hornbeam *Carpinus betulus*. Other species include include hazel *Corylus avellana*, oak *Quercus* species, blackthorn *Prunus spinosa* and ivy *Hedera helix* (English Nature, 2006).

[33] 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

[34] 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*

[35]http://www.magnificentmeadows.org.uk/advice-guidance?fbclid=IwAR31OSJFE9gEiFafYU4SX18DNXfokW15XJ4ccrb47CgvIQmR3OIA03Npges&fs=e&s=cl

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- Joint Nature Conservation Committee (2003). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. JNCC, Peterborough. [36]
- Bat Conservation Trust (2012). *Bat Surveys - Good Practice Guidelines – 2nd Edition.* Bat Conservation Trust, London.
- English Nature (2004). *Research Reports Number 576: An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature, Peterborough

Websites Visited:

- http://webapps.kent.gov.uk/KCC.KLIS.Web.Sites.Public/ViewMap.aspx
- http://www.magic.gov.uk/magicmap.aspx
- http://www.kentbap.org.uk/species/

With kind permission from Google Earth Brand

[36] 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

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	Legal Protection
Great crested newts and other amphibians	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 Schedule 2 of the Conservation of Habitats and Species Regulations 2019 (as amended) and is therefore a European Protected Species (EPS); further protection is afforded by the Countryside and Rights of Way Act 2000. Taken together, the legislation makes it a criminal offence to: • Deliberately capture (or take), injure or kill GCN • Deliberately or recklessly disturb GCN, in particular (i) any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species. • Damage or destroy a breeding site or resting place - even if GCN are not occupying the place at the time; • Intentionally or recklessly obstruct access to a sheltering or resting place. An EPS licence is required from Natural England before works can be undertaken which will impact on GCN and/or their habitat (such as any damage to or removal of ponds, grassland, hedgerow bases or dense scrub in which they are likely to occur). Great crested newts and common toads are also listed as Species of Principal Importance under Section 41 of the NERC Act 2006.
Hazel dormice	The hazel 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 2019 (as amended) and is therefore a European Protected Species (EPS); further protection is afforded by the Countryside and Rights of Way Act 2000. Taken together, the legislation makes it a criminal offence to: • Deliberately capture (or take), injure or kill hazel dormouse • Deliberately or recklessly disturb hazel dormouse, in particular (i) any

	disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species. • Damage or destroy a breeding site or resting place - even if dormice are not occupying the place at the time; • Intentionally or recklessly obstruct access to a sheltering or resting place. An EPS licence is required from Natural England before works can be undertaken which will impact on dormouse and/or their habitat (such as any damage or removal of hedgerows, woodland or dense scrub in which they are likely to occur). Hazel dormouse is also listed as a Species of Principal Importance under Section 41 of the NERC Act 2006.
Bats	All British bat species receive full legal protection in the United Kingdom. The Conservation of Habitats and Species Regulations 2019 (as amended) legally protects all bat species in the UK and further protection is afforded by the Wildlife and Countryside Act 1981 (Schedule 5) and the Countryside and Rights of Way Act 2000. Taken together, the legislation makes it a criminal offence to: • Deliberately capture (or take), injure or kill a bat. • Deliberately or recklessly disturb a bat, in particular (i) any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species concerned. • Damage or destroy a breeding site or resting place (roost) of a bat- even if bats are not occupying the roost at the time; • Intentionally or recklessly obstruct access to a roost; • Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat. An EPS Licence for bats is required where works are expected to contravene the above legal protection. Under the law, a roost is 'any structure or place used for shelter or protection'. For example any building or suitable tree. Bats use many roost sites and feeding areas throughout the year. Since bats tend to re-use the same roosts for generations, the roost is protected whether the bats are present or not.
Reptiles	The more widespread species of reptile – slow-worm, viviparous lizard, grass snake and adder - are afforded legal protection against killing and injury under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). All six UK reptile species are listed as Species of Principal Importance under Section 41 of the NERC Act 2006.
Badgers	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 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.
Breeding birds	The Wildlife & Countryside Act 1981 (as amended) protects all birds, their nests and eggs – it is an offence to intentionally kill, injure or take any wild bird or its eggs, and/or to take, damage or destroy the nest (whilst being built or in use). There is additional protection for rarer species – making it an offence to disturb any wild bird listed on Schedule 1 (such as hobby) while it is nest building, or at a nest containing eggs or young, or to disturb the dependent young of such a bird. Some species are also listed as species of a Species of Principal Importance under Section 41 of the NERC Act 2006, including skylark, common cuckoo, house sparrow, tree sparrow and song thrush.
Hedgehogs	Hedgehogs are listed on schedule 6 of the Wildlife and Countryside Act (1981) which makes it illegal to kill or capture wild hedgehogs. They are also listed under the Wild Mammals Protection Act (1996), which prohibits cruel treatment of hedgehogs Hedgehogs are a species of 'principal importance' under the NERC Act, the act confers 'a duty of responsibility' on local authorities with regard to the species.
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.

Kent Biodiversity Strategy

The Kent Biodiversity Strategy was approved by the Kent Nature Partnership in February 2020. It aims to deliver, over a 25 year period, the maintenance, restoration and creation of habitats that are thriving with wildlife and plants and ensure that the county's terrestrial, freshwater, intertidal and marine environments regain and retain good health.

The Strategy looks to protect and recover threatened species and enhance the wildlife habitats that Kent is particularly important for. It also aims to provide a natural environment that inspires citizen engagement and is well used and appreciated, so that the mental and physical health benefits of such a connection can be realised by the people of Kent.

The Strategy has identified 17 priority habitats and 13 priority species that Kent can play a significant part in the restoration of. It has also identified a handful of species that can act as indicators of the health of our ecosystems. In addition, the Strategy looks to further work addressing overarching considerations affecting biodiversity recovery, including wilding, climate change, natural solutions, soil health and invasive species.

Further information can be found here:
http://kentnature.org.uk/uploads/files/Nat-Env/Kent%20Biodiversity%20Strategy%202020.pdf

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

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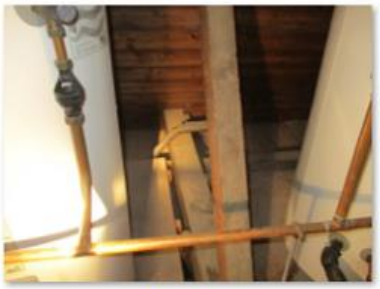

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