

Ham Road, Faversham, Kent

Preliminary Ecological Appraisal

13th February 2015 / Ref No 2014/11/04

Client: GBH Wheler Will Trust 1960



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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 Ham Road, Faversham, Kent, in support of a planning application for the erection of a number of new dwelling houses.

1.2 Survey Location/Area

The site is located at approximately TR 013 622. 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 records the potential for flora and fauna evident on the day of the site visit. 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 and Medway Biological Record Centre KMBRC¹.

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 February 2015 by Katia Bresso CEnv MCIEEM, a qualified professional consultant ecologist with over 10 years of experience², licensed bat surveyor (Class Survey Licence Registration Number CLS01228, level 2), licensed dormouse surveyor and licensed great crested newt surveyor (Class Survey Licences Registration Number 2014-6520-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.

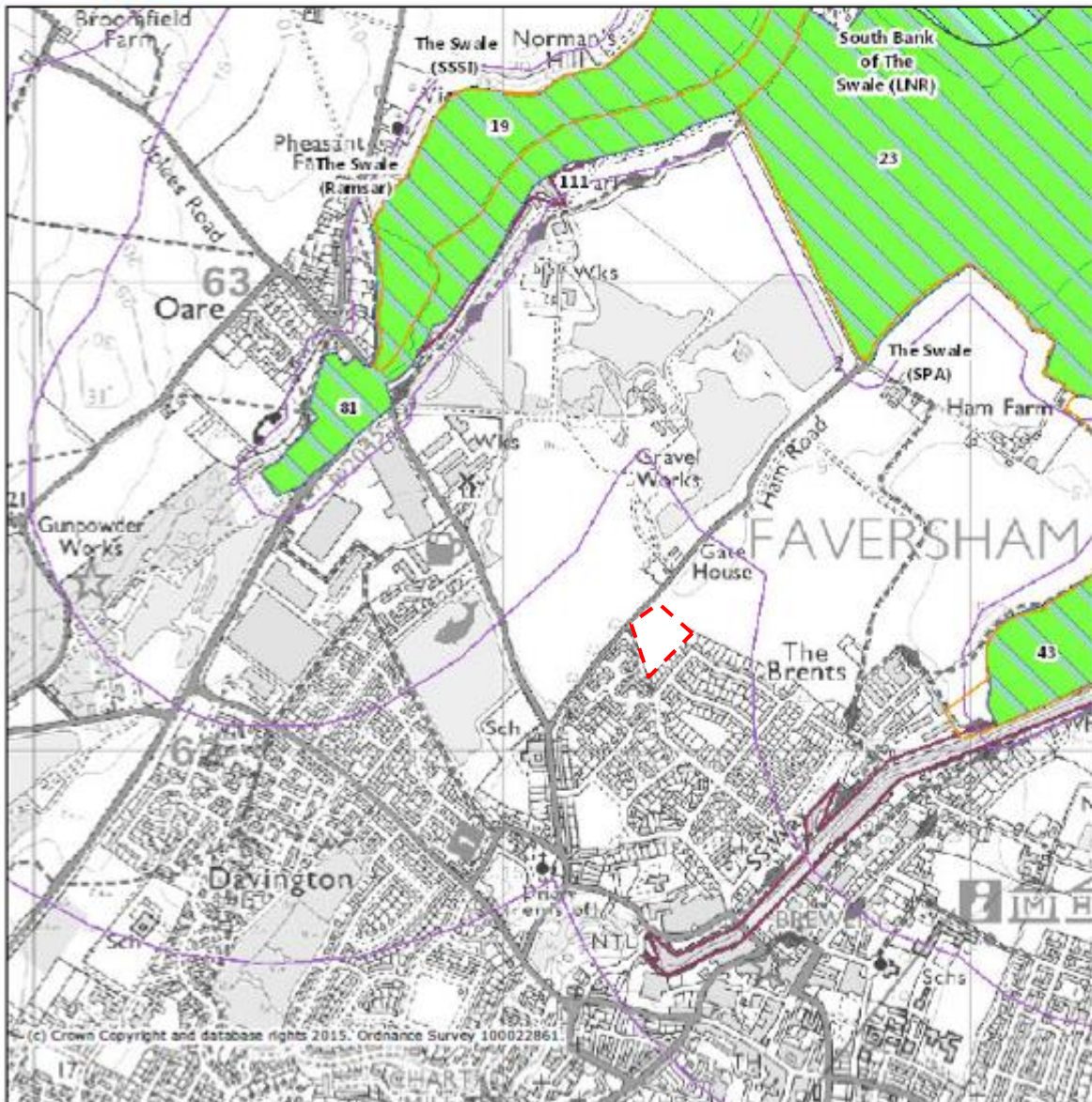
The survey and report aim at following the guidance and recommendations in the 'British Standard Biodiversity Code of Practice for Planning and Development (BS 42020: 2013)'.


All trees were also checked for potential for roosting bats (from the ground only, using binoculars).

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

Figure 1

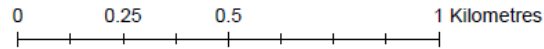


Legend	
	Environmentally Sensitive Areas (England)
	Limestone Pavement Orders (England)
	Local Nature Reserves (England)
	Moorland Line (England)
	National Nature Reserves (England)
	National Nature Reserves (Scotland)
	National Nature Reserves (Wales)
	National Parks (England)

Projection = OSGB36
 xmin = 599000
 ymin = 161000
 xmax = 603200
 ymax = 163800

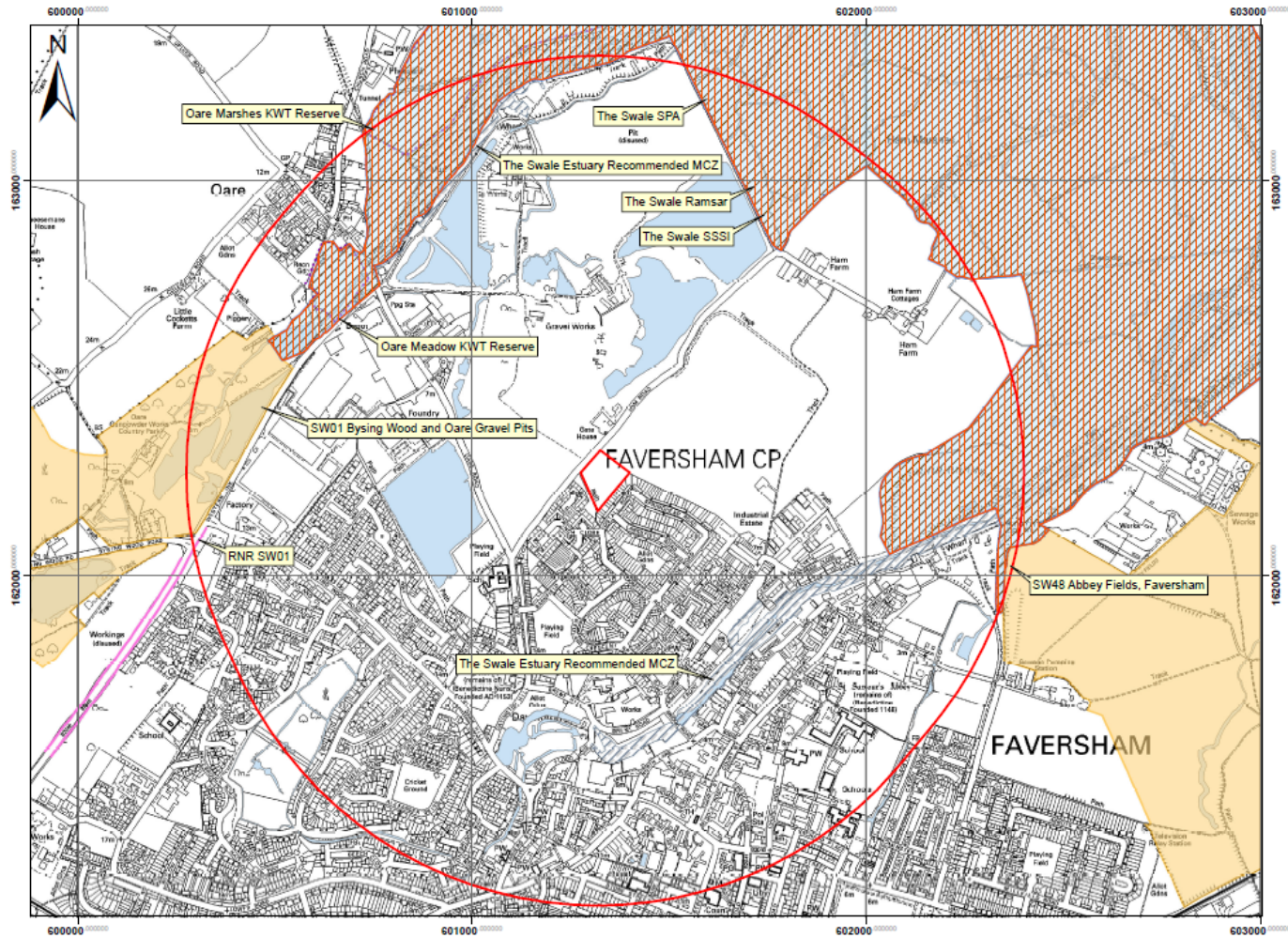
Map produced by MAGiC on 2 February, 2015.
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Kent & Medway Biological Records Centre
 Map showing the statutory and non-statutory designated sites,
 ancient woodland, higher level stewardship and water features at
 Ham Road, Faversham
 Katia Bresso, KB Ecology
 ENQ/15/058 11/02/2015



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Kent & Medway Biological Records Centre would like to acknowledge, where appropriate: Natural England for Ramsar, SAC, SPA, LNR, SSSI; Higher Level Stewardship and Ancient Woodland data; Kent County Council for AONB, Heritage Coast, LNR, Country Park and County Boundary data; Kent Wildlife Trust for LWS, RNR and Reserve data; Kent RIGS group for RIGS data; and the National Trust, the RSPB and the Woodland Trust for Reserve data used in this map.



KEY

- Study Area
- Ramsar Site
- Special Protection Area
- Sites of Special Scientific Interest
- Candidate MCZ
- Local Wildlife Site
- Kent Wildlife Trust Reserve
- Roadside Nature Reserve
- Water Feature



FIGURE 2



Scale 1:5,000

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Map Dated: 02 Feb 2015

3 Results

3.1 Designated Nature Conservation Sites

The Swale, which is present within 700m of the site, is a Ramsar site³, a Special Protection Area⁴ and a 6,568.45 ha Site of Special Scientific Interest (SSSI), including the largest remaining areas of freshwater grazing marsh in Kent and being representative of the estuarine habitats found on the north Kent coast. The habitats comprise chiefly mudflats, saltmarsh, and freshwater grazing marsh, the latter being intersected by extensive dykes and fleets. The area is particularly notable for the internationally important numbers of wintering and passage wildfowl and waders, and there are also important breeding populations of a number of bird species. Associated with the various constituent habitats of the site are outstanding assemblages of plants and invertebrates.

'Byssing Wood and Oare Gravel Pits' local wildlife site SW01 is present 800m to the west of the site and 'Abbey Fields, Faversham' local wildlife site SW48 is present 980m to the east.

3.2 Habitats

The KMBRC data search did not reveal any records of plants from within the site.

The site is located on the outskirts of Faversham, with residential houses to the south, east and west and arable and quarries to the north.

The site is just under 1 Ha, and consists of a tussocky improved rough grassland with common plant species and many ruderals. Ivy clad trees bound the site to the west along Ham road, these include hawthorn *Crataegus monogyna*, English elm *Ulmus minor*, dogwood *Cornus sanguinea*, elder *Sambucus nigra*, along with bramble *Rubus fruticosus* agg,

Sapplings of ash *Fraxinus excelsior* are present along the south east boundary. *Rosa* sp and butterfly *Buddleja davidii* bushes are encroaching the middle of the site, showing a lack of management in recent years.

Species present included cocks foot *Dactylis glomerata*, common couch *Elymus repens*, bristly oxtongue *Picris echioides*, cleavers *Galium aparine*, herb-Robert *Geranium robertianum*, common ragwort *Senecio jacobaea*, creeping buttercup *Ranunculus repens*,

³ Ramsar sites are designated under the Convention on Wetlands of International Importance especially as Waterfowl Habitat. Wetlands are designated, protected and promoted in order to stem the progressive encroachment on and loss of wetlands, which are broadly defined to include marsh, fen, peatland and water. There are 5 Ramsar sites in Kent, and as with all Ramsar sites, they are also designated as SSSIs.

⁴ Special Protection Areas (SPA) are designated under the EC Birds Directive, to conserve the habitat of certain rare or vulnerable birds and regularly occurring migratory birds. Any significant pollution or disturbance to or deterioration of these sites has to be avoided. There are 6 SPA sites in Kent, and as with all SPA sites, they are also designated as SSSIs.

red dead-nettle *Lamium purpureum*, vetch *Vicia sp*, ribwort plantain *Plantago lanceolata*, yarrow *Achillea millefolium*.

A stand of common nettles *Urtica dioica* was present in one corner.

Local residents seem to use the site for dog walking to some extent.

The area directly to the North is showed as quarry in the KHS Habitat Data 2012 map but seems to have been recently seeded, with the pond showed on the map now lost.

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

Legend of Phase 1 habitat survey map hereafter:




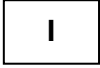

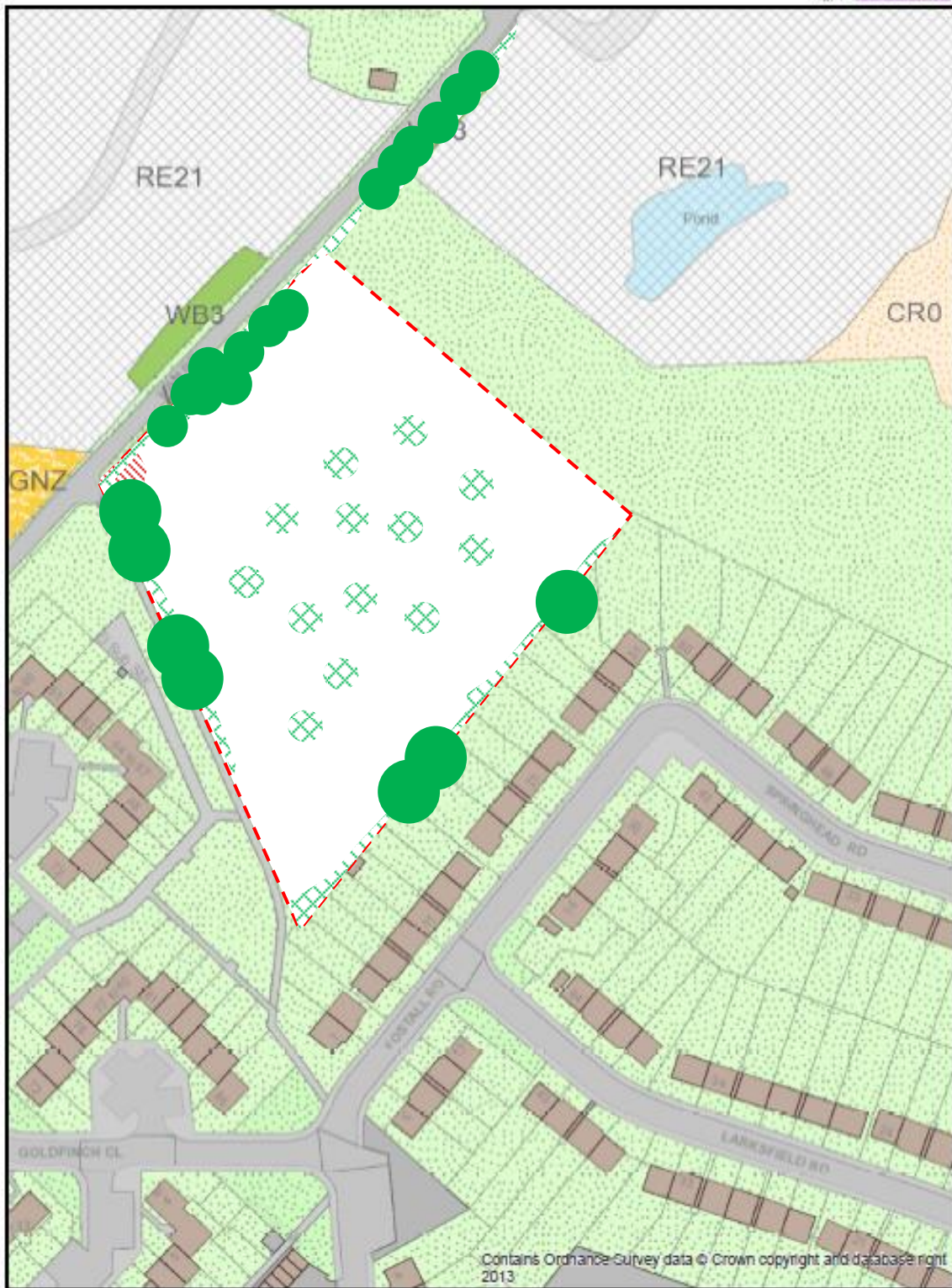
	Site boundary
	Scattered scrub
	Individual tree
	Improved grassland
	Tall ruderal

FIGURE 3



Scale 1:1,250

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Map Dated: 02 Feb 2015



3.3 Amphibians

The data search carried out with Krag (Enquiry No: ENQ/15/058) revealed that the closest recorded Great Crested Newt *Triturus cristatus* site is located at Judd's Hill, 2.27 km to the SW (record id: 2057).

Krag advised that their database risk assessment indicates that the likelihood of presence of great crested newts *in the overall area* is *Possible*⁵.

No ponds were present on site or within 100m. A number of large quarry lakes (of 4 or 5ha formed following the removal of sand and gravel and subsequent flooding) are present between 150m and 500m from the site. These lakes form part of a site for which planning permission is being currently sought, at the time of writing this report, as residential development for 375 dwellings (SW/14/0257). The 'Access & Habitat Management Plan' for the site states that 'No surveys have been carried out specifically for Great Crested Newts

⁵ Likelihood of Presence Scores are described using the following categories: Unlikely<Possible<Likely<High

since it was determined that the site was unlikely to support this species due to the nature of the site and the known lack of GCN records locally.'

No water bodies are present on site or within 100m. The only water bodies present within 500m are vast flooded quarries which are not deemed suitable for great crested newts. Therefore, it is judged highly unlikely that great crested newts be present on the proposed development site itself.

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 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 data search carried out with KRAG revealed that the closest recorded reptile is slow worm, located at a private residence, 0.54 km to the S (record id: 29945). Their database risk assessment indicates:

	Likelihood of Presence	
	Score	Dist (km)
Viviparous Lizard:	Likely	0.82
Slow-worm:	Likely	0.54
Sand Lizard:	<i>unlikely</i>	33.80
Grass Snake:	HIGH	0.85
Adder:	<i>unlikely</i>	6.00
Smooth Snake:	n/a	n/a

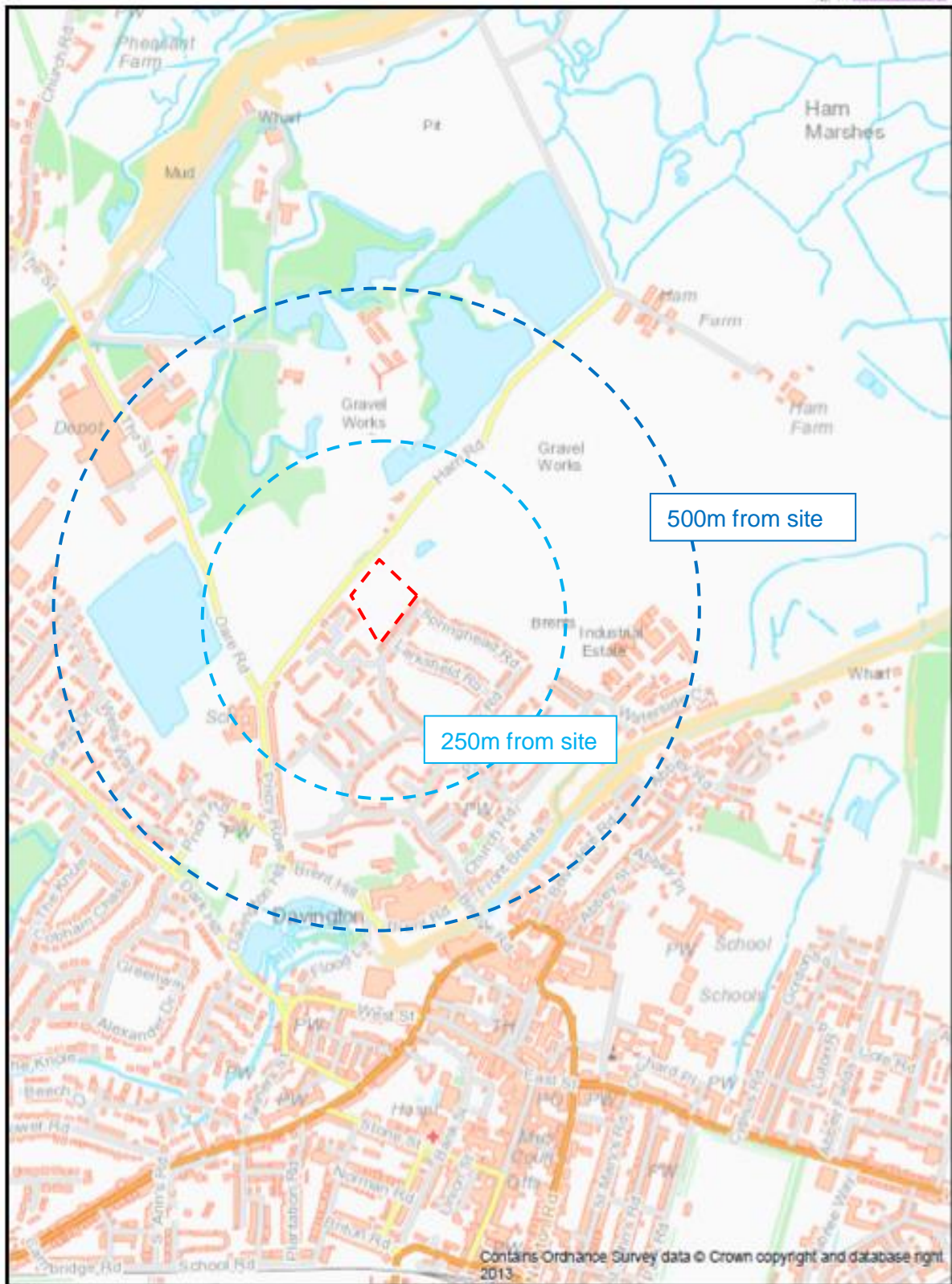
Reptile survey effort in local area is considered to be relatively high.

The tussocky and scrubby nature of the grassland habitat on site offered good potential for reptiles.

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>

FIGURE 4



3.5 Birds

It is considered that the site has high potential to support breeding birds within the trees and scrub. It is judged unlikely that ground nesting birds be present due to the sporadic presence of dog walkers on site.

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 site has no potential to support the hazel dormouse *Muscardinus avellanarius* due to lack of connection to suitable woodlands.

3.7 Badger

The grassland habitat on site provides foraging opportunities for badgers *Meles meles* and the boundary vegetation provides a small amount of refuge and sett digging opportunities for badgers. However, no setts or signs of badgers 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>

3.8 Bats

The KMBRC data search did not reveal any bat roosts on site but a number within 1km. Nine species of bat, of the 15 species recorded in Kent, have been recorded in this area, including serotine bat, Daubenton's bat, whiskered bat, Natterer's bat, noctule bat, Nathusius' pipistrelle bat, pipistrelle bat (45kHz), pipistrelle bat (55kHz) and brown long-eared bat.

None of the trees present on site offered potential for roosting bats. However, the site is expected 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 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). Several records were present in the KMBRC data search within 1km of the site.

It is considered that the site has potential to support brown hares *Lepus europaeus* (some records were present in the KMBRC data search within 1km of the site). Brown hare are a UK BAP Priority Species and a Species of Principal Importance under Section 41 of the NERC Act (2008 updated list).

It is considered that the site has potential to support common mammal species such as rabbit (*Oryctolagus cuniculus*), mole (*Talpa europea*) and fox (*Vulpes vulpes*). A burrow thought to be a fox den was present at the bottom of the bank along Ham road.

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

Records of stag beetles *Lucanus cervus* were also reported in the KMBRC search but the site lacks the habitat they favour (woodland edges, hedgerows, traditional orchards, parks and gardens).

4 Conclusions and Recommendations

The details of the proposed development were not known 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 website⁶:

Site Check Report Report generated on Fri Feb 13 2015
You selected the location: Centroid Grid Ref: TR013622
The following features have been found in your search area:

SSSI Impact Risk Zones (England) - For use by Local Planning Authorities to assess planning applications for likely impacts on SSSIs

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	All planning applications with a new/additional footprint outside or extending outside existing settlements/urban areas (Excluding Householder Applications).
Infrastructure	Pipelines, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance).
Wind & Solar Energy	Solar schemes with footprint > 0.5ha. All wind turbines.
Quarry	Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc.
Non Residential	Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development ⁷ is 1000m ² or more.
Residential	Any residential developments with a total net gain in residential units.
Rural Residential	Any residential developments outside of existing settlements/urban areas with a total net gain in residential units.
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 works, other incineration/ combustion.
Waste	Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill.
Composting	Any discharge of water or liquid waste that is more than 2m ³ /day. The water needs to either be discharged to ground (ie to seep away) or to surface water, such as a beck or stream. Discharges to mains sewer are excluded.
Discharges	Developments needing their own water supply (eg remote rural housing)
Water Supply	/Metadata_for_magic/SSSI IRZ User Guidance v1.9 MAGIC 03November2014.pdf
Guidance	

Residential housing is listed as being a category for which the LPA should consult Natural England.

The North Kent Environmental Planning Group (NKEPG) have produced the North Kent Bird Disturbance Report⁷ which focuses on the impacts of recreational activities the SPA and

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>

Ramsar sites within North Kent. The studies indicate that recreational disturbance is a potential cause of the decline in bird numbers in the designated sites.

The proposed development site is within 1km of the Swale SPA and Ramsar Sites.

The North Kent Bird Disturbance Report summarises the results of the studies to date and has led the NKEPG to commission the development of a coordinated access management strategy. This aims to ensure that development across the North Kent area takes a strategic approach to managing the risk of and potential impacts of recreational disturbance on the SPAs.

It is therefore recommended that any recommendations are in line with the access management strategy to ensure that measures to avoid likely significant effects as a result of recreational disturbance are consistent with the strategic approach across North Kent.

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.

4.3 Amphibians

A number of water bodies are present within 500m of the proposed development site. Although no surveys have been undertaken of these ponds, it is judged highly unlikely that any great crested newts be present on site and therefore no further survey work or mitigation works are proposed with regards to this species.

4.4 Reptiles

Reptiles may be present on site. It is therefore recommended to carry out a reptile survey looking at presence/absence and, if present, population size.

The survey would consist of placing artificial refuges (i.e. 0.5 m² tins or roofing felt) at a minimum density of 100 per hectare in areas of suitable reptile habitat and leaving them in place for at least 2 weeks prior to the survey commencing. The refuges would be checked on a number of separate occasions 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°C). Should reptiles be recorded during the presence / absence survey further visits may be recommended to establish relative population size. In addition, log piles, rock piles and building debris can also be searched under for the presence of reptiles.

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).

7

<http://www.swale.gov.uk/assets/Planning-General/Planning-Policy/Local-Plan-2013/Footprint-Ecology-2012-Phase-I-Bird-Disturbance-Report-optimised.pdf>

Should the presence of reptiles be confirmed through further surveys, mitigation may involve the installation of reptile exclusion fencing, and the trapping and translocation of reptiles during suitable weather conditions for a total of 60, 70 or 90 visits depending on population size and scope of works. Captured animals should be released into a receptor habitat made suitable beforehand. Such animal translocation exercises should only take place once planning permission has been granted.

Mitigation may also require the enhancement, replacement or creation of additional reptile habitats. These works may be necessary in advance and/or after the construction works.

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/shrubs 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/shrubs 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

No further work is recommended with regards to dormice.

4.7 Badger

No further work is recommended with regards to badgers.

4.8 Bats

The site offers potential as foraging habitat. As such, further surveys are recommended to allow a full understanding of the use of the site by the local bat population and therefore be able to assess the impact of the proposal.

The Bat Conservation Trust Good Practice Guidelines recommend the following:

Table 7.2 Minimum recommended visit frequency and timing for activity surveys

	Bat habitat quality		
	Low habitat quality	Medium habitat quality	High habitat quality
Small sites • Site area < 1 ha (where deemed necessary)	Transect surveys		
	One transect on 2 visits ¹ Mar ² – Sept ³ Optimum period Jun - Aug	One transect on 3 visits ¹ Mar ² – Sept ³ Optimum period Jun - Aug At least one of the three surveys should comprise dusk and pre-dawn surveys (or a dusk-to-dawn survey) within one 24-hour period.	One transect on 4 visits ¹ Mar ² – Sept ³ Optimum period Jun - Aug At least one of the four surveys should comprise dusk and pre-dawn surveys (or a dusk-to-dawn survey) within one 24-hour period.
	Automated surveys		
1 location for 3 consecutive nights on 2 occasions Mar ² – Sept ³	1 location for 3 consecutive nights on 3 occasions Mar ² – Sept ³	1 location for 3 consecutive nights on 4 occasions Mar ² – Sept ³	

Besides, as lighting can be detrimental to roosting, foraging and commuting bats⁸, 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.

The site clearance should be carried out in such a way to avoid conflict with regards to foxes and The Wild Mammals (Protection) Act 1996. It is suggested that site clearance should be carried out outside the breeding season (January to June), when fox cubs could be present in a breeding den.

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 BREEAM/Code for Sustainable Homes accreditation, should this be a consideration for this site.

Biodiversity enhancements for the site could include the following:

⁸ http://www.bats.org.uk/pages/bats_and_lighting.html and <http://www.batsandlighting.co.uk/index.html> for more information

- Provision of hedgehog nesting boxes⁹.
- 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 instance¹⁰ 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 Habibat¹², EcoSurv Bat Box or Schwegler Bat tube¹³)¹⁴.
- Provision of barn owl boxes¹⁵ as the surrounding landscape is judged suitable¹⁶
- Provision of owl boxes in trees¹⁷
- Tree / shrub/ hedgerow planting (native species to be used only).
- Establish climbing plants on walls and other vertical structures¹⁸.
- Establish wildflower plug/bulb planting in amenity grassland¹⁹.
- Creation of drought-resistant wildflower garden to attract invertebrates and reduce need for water²⁰.
- Integration of Sustainable Urban Drainage Systems (SUDS)²¹.
- Integration of green or grey roofs^{22, 23, 24}.

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 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/>

¹³ http://www.bats.org.uk/publications_download.php/1109/BCT_BatBoxProductList_v4a.pdf

¹⁴ It is highly recommended to install bird boxes near bat boxes to avoid birds from using the bat boxes to the detriment to bats.

¹⁵ More information can be found here: <http://www.barnowltrust.org.uk/infopage.html?Id=42>

¹⁶ http://www.barnowltrust.org.uk/content_images/gallery/ENGLAND_Southern1159973743.jpg

¹⁷ More information can be found here <http://www.barnowltrust.org.uk/infopage.html?Id=56>

¹⁸ 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>

¹⁹ 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*

²⁰ list of suitable species can be found in Natural England Guidance document (2007): 'NE29 - Plants for wildlife friendly gardens'. <http://publications.naturalengland.org.uk/publication/52004>

Further information can be obtained from a web-based database managed on behalf of Natural England by The Plant Press <http://www.plantpress.com/wildlife/home.php> or from RHS at <http://apps.rhs.org.uk/advice/search/Search.aspx#Practical>

²¹ <http://www.ciria.org.uk/suds/index.html> for more information

²² <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

- Integration of a rain garden²⁵.
- Planting of community orchards²⁶.
- Establish Fruit Espaliers²⁷.

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/>).

The landscape architect in charge of the project should be able to advise whether/how to incorporate such enhancements. To select the appropriate planting schedule, the landscape architect should consult the Natural History Museum's postcode plants database²⁸.

²³ An example of a company with extensive experience in designing biodiverse roofs in Central London: the Green Roof Consultancy <http://www.greenroofconsultancy.com>

²⁴ '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

²⁵ <http://www.wwt.org.uk/visit-us/festival-of-gardening/rain-gardening-how-and-why> for more information

²⁶ <http://www.orchardnetwork.org.uk/content/case-study-planting-orchard> for more information

²⁷ <http://apps.rhs.org.uk/advice/profile.aspx?PID=319> for more information

²⁸ <http://www.nhm.ac.uk/nature-online/life/plants-fungi/postcode-plants/>

5 References and Bibliography

- Communities and Local Government (2009). Code for Sustainable Homes, Technical Guide.
- Joint Nature Conservation Committee (2003). *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*. JNCC, Peterborough.²⁹

Websites Visited:

- http://maps.tunbridgewells.gov.uk/LocalViewPublic/Sites/khs2012_navigator/#
- <http://magic.defra.gov.uk/MagicMap.aspx>

With kind permission from Google Earth Brand

²⁹ 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:

<http://www.naturalengland.org.uk/ourwork/planningtransportlocalgov/spatialplanning/standingadvice/legislation.aspx>

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
<p>Bats (all species) Dormice Great crested newts Otters Sand lizards and smooth snakes</p>	<p>The Wildlife and Countryside Act 1981 (as amended) & The Conservation of Habitats and Species Regulations 2010. These make it an offence to:</p> <ul style="list-style-type: none"> • 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. <p>Disturbance of animals includes in particular any disturbance which is likely</p> <ul style="list-style-type: none"> • to impair their ability: <ul style="list-style-type: none"> -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.
<p>Breeding birds (in particular</p>	<p>The Wildlife and Countryside Act 1981 (as amended). This makes it illegal to intentionally kill, injure or take any wild bird and to take,</p>

Species	Legislation
barn owls)	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	<p>The Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:</p> <ul style="list-style-type: none"> • 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	<p>The Protection of Badgers Act 1992. This makes it an offence to:</p> <ul style="list-style-type: none"> • 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 be 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 these 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_9703



IMG_9704



IMG_9706



IMG_9710



IMG_9711



IMG_9712



IMG_9713



IMG_9714



IMG_9715



IMG_9716



IMG_9717



IMG_9718



IMG_9719



IMG_9720



IMG_9721



IMG_9722



IMG_9725



IMG_9726



IMG_9727



IMG_9728



IMG_9729



IMG_9730

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.