



Land off Whitehill Road.

Preliminary Ecological Appraisal

A Report for Kent County Council

September 2020



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Land off Whitehill Road,
Gravesend, Kent.

Preliminary Ecological Appraisal

September 2020

Controlled Copy

01 of 02

01 Kent County Council

02 Greenspace Ecological Solutions Ltd

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*The content of this report is the responsibility of Greenspace Ecological Solutions Ltd.
It should be noted that whilst every effort has been made to meet the client's requirements, no site survey can ensure complete assessment or prediction of the changeable onsite environment. Furthermore, should more than 12 months elapse between the date of this survey and any subsequent development, it may be necessary to consider the need for an update survey to be undertaken.*

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1 PROJECT OVERVIEW

Client: Kent County Council

Site Address: Land off Whitehill Road Gravesend, Kent DA12 5PJ

Attending Ecologists: Martin Rann Qualifying CIEEM

Survey Date: 18th August 2020

Site Proposals: Development of up to 14 new dwellings.

Source of Relevant Documents:

Document:	Source:
Site Location Plan:	Google Earth Pro
Desk Study:	Kent & Medway Biological Records Centre (KMBRC) Multi-Agency Geographic Information for the Countryside (Magic.gov.uk)
Site Plans:	DHA Planning

2 NON-TECHNICAL SUMMARY

- 2.1 In response to the proposed development of land off Whitehill Road, Gravesend, Kent, the Site has been subject to a Preliminary Ecological Appraisal (PEA). The Site's potential to support protected species and habitats was assessed and where required recommendations for further surveys/mitigation have been provided
- 2.1.1 The Site lies within 5km of the Thames Estuary and Marshes Special Protection Area (SPA), Special Area of Conservation (SAC) and RAMSAR site. Further assessment to determine whether the proposed development will result in potential indirect impacts upon the Thames Estuary and Marshes SPA, SAC and RAMSAR may be required. If it is determined that the proposed development will result in impacts upon the SPA, SAC and RAMSAR then appropriate mitigation will be required, this may be in the form of the implementation of contribution to Bird Wise to pay for mitigation measures to be implemented.
- 2.2 The proposed development is not anticipated to have any effect upon areas of ancient woodland or habitats of principal importance (HPI) listed on Section 41 (s41) of the Natural Environment and Rural Communities (NERC) Act (2006).
- 2.3 Trees should be retained where possible. Retained trees should be protected in accordance with British Standards (BS) 5837:2012 and trees to be removed should be replaced with native species where practical.
- 2.4 Evidence of badgers *Meles meles* was recorded within the Site and as a result, sensitive working strategy will be required throughout development to maintain the protection of badgers.
- 2.5 Suitable nesting habitat for birds exists and should be retained where possible. Should suitable nesting habitat be affected, timings and best practice methods should be adhered to.
- 2.6 The habitats to be affected are optimal for reptiles and presence / likely absence surveys for reptiles are required.
- 2.7 Habitat suitable to support European hedgehog *Erinaceus europaeus* is present and recommendations for the species have been provided.
- 2.8 The likelihood of other protected and notable species to occur within the site is considered unlikely. However, should at any point during the development a protected or notable species be identified within the site, then all works should **stop** and the appointed ecologist consulted on the appropriate manner in which to proceed.

- 2.9 In accordance with the requirement of the National Planning Policy Framework (NPPF), 2019, recommendations to improve the site's suitability for wildlife have been provided.

3 INTRODUCTION

3.1 Context

- 3.1.1 In response to a proposed development at the Land off Whitehill Road, Gravesend, Kent a Preliminary Ecological Appraisal (PEA) has been undertaken of the land to be affected (henceforth referred to as 'the Site'), the Site's potential to support protected species and habitats has been assessed and appropriate recommendations have been provided.

3.2 Site Location

- 3.2.1 The Site is situated within the town of Gravesend, Kent at Ordnance Survey (OS) Grid Reference: TQ 65447 72583. The location of the site is depicted in Image 1.



Image 1. Geographical Location of the Land off Whitehill Road.

3.3 Site Description

- 3.3.1 The Site is approximately 0.49 hectares (ha) in area and comprises a large field with surrounding fences. Pockets of bare ground, scrub and tall ruderal are present along with scattered trees along the borders of the Site.
- 3.3.2 The surrounding landscape is predominantly the urban sprawl of Gravesend. The River Thames is located 1.7km to the north, while the A2 dual carriageway is located 2km to the south. Outside of the Gravesend urban area the wider landscape is predominantly arable land with scattered rural dwellings and woodland blocks which are interconnected with

hedgerows.

3.4 Policies and Legislation

Legislation

3.4.1 The main legislation that applies to ecological issues within England and Wales are:

- The Conservation of Habitat and Species Regulations 2019 (as amended) transposes European Union Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. These regulations provide for the designation and protection of 'European Sites', the protection of 'European Protected Species' and the adaptation of planning controls for the protection of such sites and species. Under the regulations, public bodies have a duty in exercising their functions to have regard to the EC Habitats Directive.
- The Wildlife and Countryside Act 1981 (as amended) provides detail on a range of protection and offences relating to wild birds, other animals, and plants. The level of protection depends on which Schedule of the Act the species is listed on. Licences are available for specific purposes to permit actions that would otherwise constitute an offence in relation to species.
- The Natural Environment and Rural Communities (NERC) Act 2006 imposes an obligation on all public bodies, including local authorities, to consider whether their activities can contribute to the protection of wildlife. The duty is created by section 40(1) of the Act, which states that: "Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."
- The Hedgerows Regulations Act 1997 serves to; enforce under the Environment Act 1995, restrict the removal of hedgerows, or parts of hedgerows which are over 20m in length. In this case, removal includes digging up and replanting elsewhere, as well as removing from the land completely or destroying in the course of other actions. This includes developments or activities which destroy the roots, causing the vegetation to die.
- The Protection of Badgers Act 1992 exists to protect badgers *Meles meles* from cruelty. Under the act it is a criminal offense to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so, or to intentionally or recklessly interfere with a sett.

3.4.2 The above summary serves as guidance only – the reader is referred to the original legislation for definitive interpretation.

UK Planning Policy

- 3.4.3 The recommendations of this report are in line with the key principles of the National Planning Policy Framework (NPPF), 2019 and Government Circular 06/05.
- 3.4.4 Local planning policies relating to ecology are invariably based on the conservation of species protected under the above legislation, including species and habitats of principal importance (HPI) listed under Section 41 (s41) of the NERC Act 2006; and the protection of designated sites. All these features are considered within the scope of this PEA and therefore any recommendations made herein are likely to be in line with this policy.

3.5 Objectives of the Survey

- 3.5.1 The objectives of the survey were to:
- Classify the main habitats present within the Site;
 - Evaluate the ecological importance of these habitats;
 - Assess buildings and trees for their potential to support roosting bats;
 - Evaluate the potential for other protected species to occur within the Site; and
 - Provide appropriate recommendations for further surveys and mitigation where required.

3.6 Survey Constraints

- 3.6.1 All measurements and indications of area given within this report are approximate.

4 SURVEY METHODOLOGY

4.1 Desk Study

4.1.1 A desk study was undertaken to determine the presence of sites and habitats of conservation importance together with historical records of protected and notable species within a 2km radius of the Site, extending up to 5km for bats.

4.1.2 The following bodies were consulted for the desk study:

- Magic.gov.org
- Kent & Medway Biological Records Centre (KMBRC)

4.2 Preliminary Ecological Appraisal

Habitats

4.2.1 The Site was surveyed using the methodology outlined in 'The Handbook for Phase I Habitat Survey: A Technique for Environmental Audit' (JNCC, 2010). This involves identifying the main plant communities present on the site and classifying the habitat types following the JNCC methodology. This technique provides an inventory of the basic habitat types present and enables areas of greater botanical interest which may require further, more detailed, surveys to be identified. Any occurrences of recognised invasive species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were also noted.

4.2.2 A map of the habitats and areas of interest (using a variation of the JNCC, 2010 protocol for Phase I Habitat plans) is provided in Figure 1. Photographs of features of interest are presented in Appendix A.

4.2.3 The survey identified the main plant communities present on the Site, with abundance of identified characterising species noted according to the DAFOR scale. Classification of the habitat types also follows the Phase I Habitat Survey methodology.

4.2.4 The DAFOR scale characterises species abundance as Dominant (D), Abundant (A), Frequent (F), Occasional (O) or Rare (R). These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Botanical species nomenclature follows Stace (2019).

4.2.5 Application of the above technique provides an inventory of the basic habitat types present and enables areas of greater botanical interest which may require further, more detailed, surveys to be identified.

Protected Species

- 4.2.6 The survey was extended to include an assessment of the Site's potential to support protected and notable species. This involved assessing the suitability of the habitats present within the site for these species as well as connectivity to the site from other areas of potentially suitable habitat nearby.

Badger

- 4.2.7 Evidence of badger activity within and adjacent to the Site was assessed by searching for:
- Presence of setts, indicated by suitably sized holes or burrows;
 - Evidence of badger hair and/or footprints;
 - Evidence of well-used runs supported by secondary evidence such as foraging signs or footprints; and
 - Presence of badger latrines.

Bats

- 4.2.8 Where buildings, trees or other structures are present, specific survey work was undertaken to assess their suitability to support roosting bats. In this instance, a variety of equipment was used to complete the bat scoping survey, including high powered torches, telephoto lens cameras and a ladder.
- 4.2.9 Any trees within the Site, which were deemed likely to be affected by the development, were surveyed in accordance with current best practice guidance (Collins, 2016). Trees were inspected for features such as splits, fissures, delaminated bark, heavy ivy *Hedera* sp. cover and woodpecker holes. Evidence such as droppings, staining and bats themselves were searched for below and within suitable features.
- 4.2.10 Where buildings were encountered, a full external and internal inspection was undertaken (access permitting). Any likely roosting or access points for bats such as raised fascia boards, missing/lifted tiles cracks or crevices in brick/blockwork and gaps in soffit boxes were recorded and searched for evidence of use by bats (staining, droppings, scratch marks, or the bats themselves).
- 4.2.11 The results of the scoping survey enable buildings and trees to be categorised as having 'Confirmed roosts'; or 'High', 'Moderate', 'Low' or 'Negligible' suitability to support roosting bats. An outline of categorisation procedure for classifying bat suitability is presented in Appendix B.
- 4.2.12 In accordance with current best practice guidance (Collins, 2016), the level of suitability

determines the need or not for further summer emergence surveys. Although left to the discretion of the appointed ecologist, in most instances Confirmed roosts and High suitability requires three surveys, Moderate suitability requires two surveys and Low suitability requires one evening emergence or pre-dawn re-entry survey(s) (although trees with Low suitability do not require further emergence or pre-dawn re-entry surveys). Greater detail on the minimum number of surveys recommended in most instances is presented in Appendix C.

Birds

- 4.2.13 The Site was assessed for its potential to support nesting bird species. Factors considered include suitable cover and feeding habitat, as well as any active or disused birds' nests.

Hazel Dormouse

- 4.2.14 The Site was surveyed for suitable hazel dormouse *Muscardinus avellanarius* habitat, such as the presence of a well-connected understorey broadleaf habitat, hedgerows, and suitable food sources such as oak *Quercus* sp., hazel *Corylus avellana* and other nut-bearing trees, fruiting trees and shrubs, flowers and invertebrates.

Great Crested Newt

- 4.2.15 The Site was assessed for its potential to support great crested newt (GCN) *Triturus cristatus* populations. Suitable terrestrial habitat for great crested newt includes long grass, tall ruderal, woodland and hedgerow borders, as well as wood and rubble piles that act as hibernacula.

Reptiles

- 4.2.16 The Site was assessed for its potential to support reptile populations. Suitable habitat for reptiles includes long grass, deciduous woodland, woodland and hedgerow borders, as well as wood and rubble piles that act as hibernacula.

Other Species

- 4.2.17 Consideration was given to the Site's suitability to support other protected and notable species.

5 SURVEY RESULTS

5.1 Desk Study

Statutory Designated Sites

5.1.1 Statutory designated sites present within 2km of the Site are presented in Table 1.

Table 1 – Statutory designated sites within 2km of the Site.

Site Name	Description	Distance from Site
Thames Estuary and Marshes RAMSAR	<i>“The site comprises a complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat along the River Thames between Gravesend and Sheerness in Essex and Kent. The habitats support internationally important numbers of wintering waterfowl, and the saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates. The site performs important hydrological functions, including shoreline stablization, sediment trapping, flood water storage and desynchronization of flood peaks, and maintenance of water quality by removal of nutrients..”</i>	1.8km NE
South Thames Estuary and Marshes SSSI	<i>“The site consists of an extensive mosaic of grazing marsh, saltmarsh, mudflats and shingle characteristic of the estuarine habitats of the north Kent marshes. Freshwater pools and some areas of woodland provide additional variety and complement the estuarine habitats. The site supports outstanding numbers of waterfowl with total counts regularly exceeding 20,000. Many species regularly occur in nationally important¹ numbers and some species regularly use the site in internationally important² numbers. The breeding bird community is also of particular interest. The diverse habitats within the site support a number of nationally rare³ and scarce⁴ invertebrate species and an assemblage of nationally scarce plants.”</i>	1.9Km NE

(RAMSAR - Wetlands of International Importance)

(SSSI – Site of Special Scientific Interest)

5.1.2 The development falls within the impact risk zone (IRZ) of the South Thames Estuary and Marshes SSSI which lies 1.9km to the north-east of the Site.

5.1.3 In addition, the site also lies 3.2km south-west of the Thames Estuary and Marshes Special Protection Area (SPA) and Special Area of Conservation (SAC).

Non-statutory Designated Sites

5.1.4 A single non-statutory designated site was identified within 2km of the Site, presented in Table 2.

Table 2 – Non-statutory designated sites within 2km of the Site.

Site Name	Designation	Approximate Distance and Direction
Canal and Grazing Marsh, Higham	LWS	1.7 km NE

(LWS – Local Wildlife Site)

Ancient Woodland

- 5.1.5 No areas of ancient woodland were identified within 2km of the Site.

NERC s41 Habitats of Principal Importance

- 5.1.6 Habitats listed under s41 of the NERC Act (2006) within 2km of the Site are presented in Table 3.

Table 3 – NERC s41 HPI within 2km of the Site.

Habitat Type	Distance and Direction from Site
Deciduous Woodland	1.1 km SW
Coastal and Floodplain Grazing Marsh	1.6km NE
Mudflats	1.7km N
Coastal Saltmarsh	1.8km NE

Protected or Notable Species

Bats

- 5.1.7 Bat species of conservation concern of potential relevance to the Site are provided in Table 4.

Table 4 – Bat species records within 5km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status
Serotine bat	<i>Eptesicus serotinus</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5; KRDB3
Daubenton's bat	<i>Myotis daubentonii</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5
Natterer's bat	<i>Myotis nattereri</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5; KRDB2
Whiskered Bat	<i>Myotis mystacinus</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5; KRDB1
Leisler's bat	<i>Nyctalus leisleri</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5; KRDB1
Noctule bat	<i>Nyctalus noctula</i>	HabDir:A4; Berne:A2; Bonn:A2; BAP; S41; WCA5; KRDB2
Nathusius' Pipistrelle	<i>Pipistrellus nathusii</i>	HabDir:A4; Berne:A2; Bonn:A2; WCA5
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	HabDir:A4; Berne:A3; Bonn:A2; WCA5
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	HabDir:A4; Berne:A2; Bonn:A2; BAP; S41; WCA5
Brown Long-eared bat	<i>Plecotus auritus</i>	HabDir:A4; Berne:A2; Bonn:A2; BAP; S41; WCA5; KRDB2

Other Mammals

- 5.1.8 Other mammals of conservation interest of potential relevance to the site are presented in Table 5.

Table 5 – Other mammal species records within 2km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status	Closest Record	Date
West European Hedgehog	<i>Erinaceus europaeus</i>	Bern_III, NERC S41	1.3 km W	2010
Eurasian Badger	<i>Meles meles</i>	Bern_III, Badger Act	2 km W	2008

Birds

- 5.1.9 Bird species of conservation interest of potential relevance to the site are presented in Table 6.

Table 6 – Relevant bird species records within 2km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status
Skylark	<i>Alauda arvensis</i>	BAP; Berne:A3; BoCC4:Red; BirdsDir:A2.2; KRDB2; S41
Meadow Pipit	<i>Anthus pratensis</i>	Berne:A2; BoCC4:Amber
Short eared Owl	<i>Asio flammeus</i>	Berne:A2; BoCC4:Amber; ECCITES:A; BirdsDir:A1
Turtle Dove	<i>Streptopelia turtur</i>	BAP; Berne:A3; BoCC4:Red; Bonn:A2; ECCITES:A; BirdsDir:A2.2; KRDB2; S41
Starling	<i>Sturnus vulgaris</i>	BAP; BoCC4:Red; BirdsDir:A2.2; S41; KRDB2
Cuckoo	<i>Cuculus canorus</i>	BAP; Berne:A3; BoCC4:Red; S41; KRDB2
House Sparrow	<i>Passer domesticus</i>	BAP; BoCC4:Red; KRDB2; S41
Linnet	<i>Carduelis cannabina</i>	BAP; Berne:A2; BoCC4:Red; KRDB2; S41
Kestrel	<i>Falco tinnunculus</i>	Berne:A2; BoCC4:Amber; Bonn:A2; ECCITES:A
Song Thrush	<i>Turdus philomelos</i>	BAP; Berne:A3; BoCC4:Red; BirdsDir:A2.2; KRDB2; S41
Yellow Wagtail	<i>Motacilla flava</i>	BAP; Berne:A2; BoCC4:Red; S41; KRDB2
Dunnock	<i>Prunella modularis</i>	BAP; Berne:A2; BoCC4:Amber; S41
Firecrest	<i>Regulus ignicapilla</i>	Berne:A2; BoCC4:Green; KRDB1; WCA1
Willow Warbler	<i>Phylloscopus trochilus</i>	Berne:A2; BoCC4:Amber
Grasshopper Warbler	<i>Locustella naevia</i>	BAP; Berne:A2; BoCC4:Red; KRDB1; S41

Herpetofauna

5.1.10 Herpetofauna species of conservation concern of potential relevance to the Site are presented in Table 7.

Table 7 – Herpetofauna species records within 2km of the Site.

Common Name	Scientific Name	Legal Protection / Conservation Priority Status	Closest Record	Date
Slow-worm	<i>Anguis fragilis</i>	Bern_III, WCA Sch5 s9.1/s9.1 kill/s9.5a, NERC S41	0.2km NE	2006
Common lizard	<i>Zootoca vivipara</i>	Bern_III, WCA Sch5 s9.1/s9.1 kill/s9.5a, NERC S41	1.8km NE	2009

5.2 Preliminary Ecological Appraisal

5.2.1 The following habitat types were recorded within the site:

- Semi-improved grassland
- Scrub
- Tall ruderal
- Scattered trees
- Bare ground
- Hardstanding

Semi-improved Grassland

5.2.2 Semi-improved grassland is the dominant habitat present within the Site. Grass species present consist of the following: dominant perennial rye-grass *Lolium perenne*; abundant cock's-foot grass *Dactylis glomerata* and false oat grass *Arrhenatherum elatius*; and frequent common bent *Agrostis capillaris*. Herbaceous species consist of the following: abundant common dandelion *Taraxacum officinale* L. and ribwort plantain *Plantago lanceolata*; frequent bramble *rubus fruticosus* agg., common nettle *Urtica dioica* and white clover *Trifolium repens*; occasional hawkbit *Leontodon* sp., common ragwort *Jacobaea vulgaris* and yarrow *Achillea millefolium*; rarely occurring dock *Rumex* sp.; and locally abundant goat's-beard *Aruncus dioicus* and spear thistle *Cirsium vulgare*.

5.2.3 Two brash/waste piles of material are present within the semi improved grassland denoted Target Notes 1 and 5 (TN1 & TN5) in Figure 1.

Scrub

5.2.4 Areas of scrub are present along the boundaries of the Site, encroaching into the grassland in places. Species present consist of: dominant bramble; abundant common bent, cock's-foot, field bindweed *Convolvulus arvensis*, common nettle, perennial rye-grass; frequent common ivy *Hedera helix*; with rarely occurring atlantic ivy *Hedera hibernica* and common mallow *Malva neglecta*. Locally abundant Portuguese laurel *Prunus lusitanica* and common snowberry *Symphoricarpos albus* are also present within the scrub.

5.2.5 Two piles of brash/garden waste are present within the scrub denoted TN4 and TN7 in Figure 1.

Tall Ruderal

5.2.6 Areas of tall ruderal are present along the boundaries of the Site, encroaching into the grassland in places. Species present consist of dominant common nettle; abundant common bent, cock's-foot, field bindweed, perennial rye-grass; frequent common ivy; occasional purple archangel *Angelonia angustifolia*; and rarely occurring dog rose *rosa canina* and silver lace vine *Fallopia baldschuanica*.

5.2.7 Multiple piles of brash/garden waste are present within the tall ruderal denoted TN2, TN3 and TN6 in Figure 1.

Scattered trees

5.2.8 Scattered trees exist along the boundaries of the Site, consisting of common beech *Fagus sylvatica*, bryony *Bryonia* sp., elder *Sambucus nigra*, field maple *Acer campestre*, hawthorn *Crataegus monogyna*, common holly *Ilex aquifolium*, lime *Tilia* sp., plum *Prunus* sp. and poplar *Populus* sp.

Bare ground

5.2.9 Bare ground is present within the Site in the form of a cleared patch of vegetation on the western boundary. No botanicals are present.

Hardstanding

5.2.10 An area of hardstanding is present at the entrance to the Site consisting of a concrete slab. Species present consist of dominant moss *Bryophyta* sp.; and occasional bramble, common bent, cock's-foot grass, geranium *Geranium* sp. and perennial rye-grass.

5.3 Protected Species*Badgers*

5.3.1 The habitats within the Site provide suitable foraging and commuting habitats for badger and

evidence of the Site's potential use by badgers was recorded during the survey in the form of multiple mammal paths and latrines throughout the grassland. No sett building opportunities were identified within the Site or immediately adjacent.

Bats Roosting Habitat - Buildings & Trees

5.3.2 No buildings are present within the Site.

5.3.3 None of the trees within the Site were identified as potentially suitable for roosting bats.

Bats - Foraging and Commuting Habitat

5.3.4 The scattered trees within and along the borders of the Site provide suitable commuting habitat, while the scrub, tall ruderal and semi improved grassland provide suitable foraging habitat for bats however, there is no connectivity to the wider landscape.

Birds

5.3.5 Suitable nesting habitat is present in the form of scrub, tall ruderal, semi-improved grassland, and scattered trees.

Hazel Dormouse

5.3.6 The scrub lacks connectivity to areas of suitable dormouse habitat within the wider landscape and no evidence of this species was recorded within the Site.

Great Crested Newts

5.3.7 Suitable terrestrial habitat for GCN exist in the form of semi-improved grassland, brash/garden waste piles, tall ruderal and scrub. In addition, no waterbodies were identified within 250m of the Site

Reptiles

5.3.8 Suitable terrestrial habitat for reptiles exists in the form of semi-improved grassland, brash/garden waste piles, tall ruderal and scrub.

Other Protected Species

5.3.9 The Site and surrounding habitats are considered suitable to support the priority species of European hedgehog *Erinaceus europaeus*.

5.3.10 Beyond those noted above, the survey identified no evidence of protected or notable species with the Site.

6 CONCLUSIONS AND RECOMMENDATIONS

6.1 Designated Areas

- 6.1.1 There are two designated area within 2km of the Site. The closest being Thames Estuary and Marshes RAMSAR located 1.8km north-east of the Site. Due to the localised nature of the proposed development, it is not considered likely to directly affect any statutory designated areas within 2km of the Site.
- 6.1.2 Although the development falls within the impact risk zone (IRZ) of the South Thames Estuary and Marshes SSSI which lies 1.9km to the north-east of the Site, the proposed development does not fit any of the criteria that would warrant further consultation with Natural England in this instance.
- 6.1.3 However, the Site lies within 5km of the Thames Estuary and Grazing Marshes SPA, SAC and RAMSAR. This designated site is primarily designated for its populations of avocet *Recurvirostra avosetta*, black- tailed godwit *Limosa limosa*, dunlin *Calidris alpina*, grey plover *Pluvialis squatarola*, hen harrier *Circus cyaneus*, knot *Calidris canutus*, redshank *Tringa totanus* and ringed plover *Charadrius hiaticula*. Avocet, black-tailed godwit and hen harrier are also listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Natural England advise that developments within 5km of the designated site that may result in harm to these species of bird must show that they will not result in any adverse impacts upon these species.
- 6.1.4 28 records of avocet, 67 records of black tailed godwit, 48 records of dunlin, 3 records of grey plover, 1 record of knot, 85 records of redshank and 25 records of ringed plover were returned as part of the desktop study within the last 10 years. However, the preferred habitat of all seven of these species of birds is wetland, and the Site does not provide suitable habitats for these species of bird. It is therefore considered that these birds are unlikely to be present on-Site and the proposed development will not result in the loss of suitable habitat or direct impacts upon these species of bird.
- 6.1.5 However, the proposed development will result in a net increase of approximately 14 new residencies which could potentially lead to indirect impacts upon the SPA, SAC and RAMSAR through increased visitor pressure and recreational use. Further assessment to determine whether the proposed development will result in impacts upon the Thames Estuary and Grazing Marshes SPA, SAC and RAMSAR may be required.
- 6.1.6 The [Thames, Medway and Swale Estuaries Strategic Access Management and Monitoring](#)

Strategy produced by Footprint Ecology for residential developments potentially affecting the SPA/SAC (Footprint Ecology, 2013) states that having considered the recreational pressures on the RAMSAR site and SPA/SAC in Gravesham, the Council has agreed to setting a tariff on new developments that add additional recreational pressures upon the RAMSAR site and SPA/SAC. As such, developers are requested to pay the full tariff of £250.39 for every new dwelling or non-C3 residential use provided within 6 km of the SPA, SAC and RAMSAR and for larger housing developments beyond 6 km from them. All monies raised are passed onto Bird Wise to pay for mitigation measures to be implemented.

- 6.1.7 One non-statutory designated sites exist within 2km of the site Canal and Grazing Marsh, Higham LWS located 1.7km north-east of the Site. Due to the localised nature of the proposed development, it is not considered likely to affect any non-statutory designated areas within 2km of the site.

6.2 Ancient Woodland

- 6.2.1 There are no areas of ancient semi-natural woodland within 2km of the Site. Therefore, the proposed development will result in no detrimental impacts to any areas of ancient woodland.

6.3 Habitats and Botanical Species of Interest

- 6.3.1 Habitats to be affected are common and widespread and the development will result in no detrimental impact to any Habitat of Principal Importance (HPI) listed under s41 of the NERC Act (2006). No further botanical surveys are required in this instance.
- 6.3.2 It is recommended that trees are retained where possible. To avoid impacts through factors such as roost compaction and/or collision, trees to be retained should be protected in accordance with BS 5837:2012, 'Trees in relation to design, demolition and construction.'
- 6.3.3 To compensate for their loss, any trees to be removed should be replaced with native species of biodiversity value. Such species include but are not restricted to; field maple *Acer campestre*, silver birch *Betulus pendula*, wild cherry *Prunus avium*, crab apple *Malus sylvestris* and rowan *Sorbus aucuparia*.

6.4 Protected Species

Badger

- 6.4.1 While the Site contains no opportunities for sett creation, the presence of mammal paths and latrines suggest the Site is used by foraging and commuting badgers. Therefore, although no further surveys for badgers are recommended, further mitigation to maintain the protection of badgers during development will be required.

Sensitive Working Strategy

- 6.4.2 To account for the potential for badgers to enter the Site for the purpose of foraging and commuting, prior to the start of work all contractors working on the development should be briefed regarding the presence of badgers and of the types of activities that would not be permissible on-Site. If applicable, any specific licensing requirements should be highlighted, and the details of the licence left on-Site at all times.
- 6.4.3 To prevent badgers becoming trapped in excavations, any trenches or deep pits should be covered or closed overnight, any excavations that are to be left open overnight should be provided with a means of escape should a badger enter. This could be achieved through the construction of a graded bank or the installation of a rough sawn timber board such as a scaffold board or similar, which will allow the badgers to exit of their own accord. Any trenches or pits should be inspected each morning to ensure no badgers have become trapped overnight. In the event that a trapped badger is encountered and the insertion of a means of escape prove futile, then the appointed ecologist should be contacted immediately to discuss an appropriate manner in which to proceed. Should the development require the installation of culverts and/or large diameter piping, measures to ensure the ends are closed to badgers will be implemented overnight.
- 6.4.4 The storage of topsoil or other soft building material will be given careful consideration as badgers will readily adopt such mounds for a sett and should this event occur, the mound will be afforded the same level of protection as an established sett. If mounds of topsoil or soft building materials are required within the Site, they should be subject to daily inspection for the presence of badgers or ring-fenced with a badger-proof fencing material.
- 6.4.5 To avoid any upset/spillage by badgers, the storage of any chemicals required during the development will be away from the woodland in the north and preferably within a steel container.
- 6.4.6 In addition, as badgers are a highly mobile species that readily occupy new territory and given the evidence of badger activity recorded within the Site, should for any reason works not

commence within 12 months of the initial survey date then an update survey of the Site to search for new evidence of badgers and badger setts should be carried out prior to works commencing.

Bats Roosting Habitat - Trees

- 6.4.7 No suitable trees for roosting bats are present within the Site and no buildings are present within the Site, therefore no further surveys for roosting bats in tree are required.

Bats - Foraging and Commuting Habitat

- 6.4.8 The proposed will not result in the loss of commuting features but will affect an area of foraging habitat namely the scrub, tall ruderal and grassland which will be lost to the development.
- 6.4.9 To mitigate this loss, additional foraging features in the form of species-rich native boundary hedgerow are recommended along the boundaries of the Site in the proposed planting plan. Additionally, the proposed planting plan should provide planting palettes considerate to the requirement of invertebrates and subsequently bats. Through application of mitigation, the impact of the proposed development upon foraging bats is anticipated to be negligible and no further bat activity surveys are required.
- 6.4.10 Since lighting can be detrimental to bats using vegetation for foraging and commuting, should any external lighting be proposed for the development should be sensitive to the boundaries and commuting features noted above, avoiding direct illumination of them through the use of directional and low-level bollard lighting. The Institution of Lighting Professionals (ILP), in partnership with the Bat Conservation Trust (BCT), has published guidance relating to bats and lighting – this is available at the following link: [Guidance Note 8 Bats and Artificial Lighting](#).

Birds

- 6.4.11 Suitable nesting habitat exists in the form of scattered trees, scrub, tall ruderal and semi-improved grassland. As all nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) it is recommended that works to these areas (where necessary) are conducted outside the core breeding period for birds of Late February – August inclusive.
- 6.4.12 Should this timeframe be unobtainable, a thorough search for the presence of nesting birds should be conducted by a suitably experienced ecologist prior to the start of works. Should evidence of nesting birds be recorded, works within 5m of the nest, or works that have potential to destroy the nest, should stop until the eggs have hatched and the chicks fledged, or the nest is deemed by a suitably experienced ecologist to have been abandoned.

Hazel Dormouse

- 6.4.13 Due to the isolated nature of suitable dormouse habitat within the Site, hazel dormice are considered to be likely absent from the Site and no further surveys for dormice are required.

Great Crested Newts (GCN)

- 6.4.14 Although suitable terrestrial habitat is present for GCN, the Site and surroundings lack the network of suitable waterbodies that the species requires to breed. Therefore, further consideration to the presence of GCN within the Site is not required.

Reptiles

- 6.4.15 The survey identified areas of suitable habitat for reptiles in the form of semi-improved grassland, tall ruderal and scrub as well as suitable hibernacula in the form of multiple brash and garden waste piles.
- 6.4.16 All UK native reptile species are protected under the Wildlife and Countryside Act 1981 (as amended) from killing and injury amongst other offences. As the proposed works will result in the loss of suitable habitat for reptiles, further surveys for reptiles will be required prior to the start of work, to provide an estimate of numbers of reptiles within the site and inform a suitable mitigation strategy.
- 6.4.17 Reptile surveys involve a minimum of seven visits undertaken by a suitably qualified ecologist, typically between late March and early October depending on the weather conditions. The surveys must be undertaken in suitable weather conditions and should avoid prolonged periods of particularly hot or cold weather.
- 6.4.18 To avoid harm or injury to reptiles, no works that are likely to impact on habitats suitable to support reptiles can take place until these surveys have been completed and any necessary mitigation implemented.

Other species

- 6.4.19 Although no evidence of the species was recorded, the Site contains habitat suitable to support the priority species of European hedgehog.
- 6.4.20 Beyond those noted above, there are no obvious and immediate issues regarding other protected species on the Site and no further surveys to determine the presence of other protected species is required in this instance. However, should at any point during the development a protected or notable species be identified within the Site, then all works should **stop**, and the appointed ecologist consulted on the appropriate manner in which to proceed.

7 ECOLOGICAL ENHANCEMENTS

7.1 Opportunities to include biodiversity enhancements within the proposed development and landscaping exist and in accordance with the requirements of the NPPF 2019, the following recommendations are considered appropriate for the Site:

- The installation of bat boxes on suitable trees would increase the Site's potential for roosting bats. These boxes should be installed at a height of 3m or more on sunny, sheltered aspects, away from direct illumination by artificial lighting and in a location, which ensures connectivity to foraging habitats within the wider landscape. In this instance, Boxes such as the [Kent Bat box](#) or [Schwegler 2FN](#) (or similar) are recommended for installation within trees.
- The installation of bird boxes in suitable locations within the Site on suitable trees would increase the Site's potential for nesting birds. Tree mounted boxes should be selected from a range of open fronted and closed (with a hole) fronted boxes such as those available from [The Nest Box Company](#).
- It is recommended that a single hedgehog box be installed within vegetated areas of the Site, to mitigate the loss of suitable habitat that supports this species.
- The incorporation of a wildlife-friendly planting scheme within the grounds post-development, using native fruiting and flowering plant species, would be of benefit to invertebrates, and subsequently birds and bats. It is recommended that any hedgerow / woodland edge mix enhancements utilise a mix of native species to maximise biodiversity.
- Any tree planting should also use native species, for field maple *Acer campestre*, silver birch *Betulus pendula*, wild cherry *Prunus avium*, crab apple *Malus sylvestris* and rowan *Sorbus aucuparia*.

8 REFERENCES

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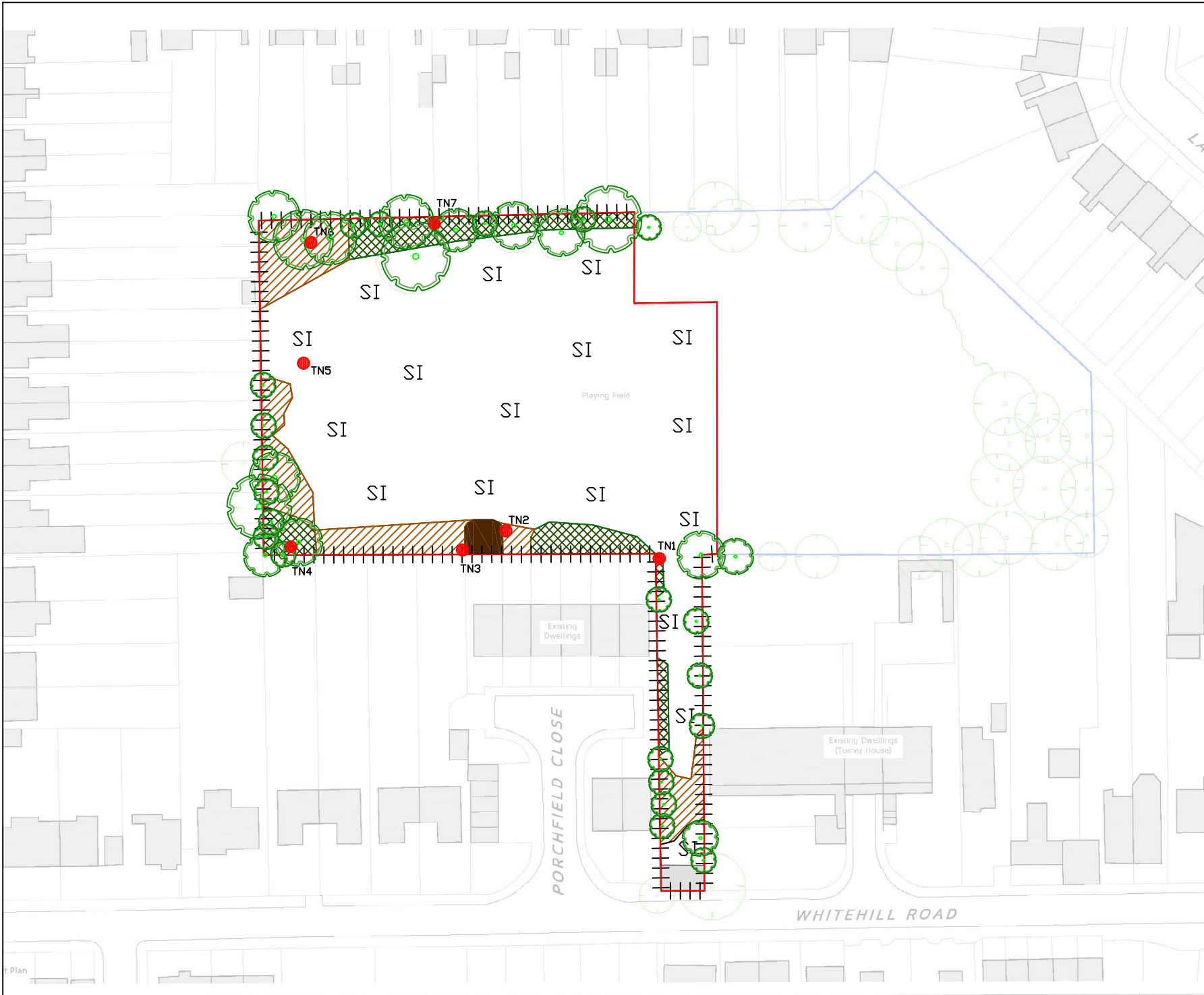
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Wildlife and Countryside Act (as amended) 1981. <http://jncc.defra.gov.uk/page-1377>

Figures



Legend

- Site Boundary
- Fence
- SI Semi-improved Grassland
- Scrub
- Tall Ruderal
- Scattered Trees
- Bare Ground
- Hardstanding
- TN Target Note

Job Reference : J20955

Project Title : Land off Whitehill Road

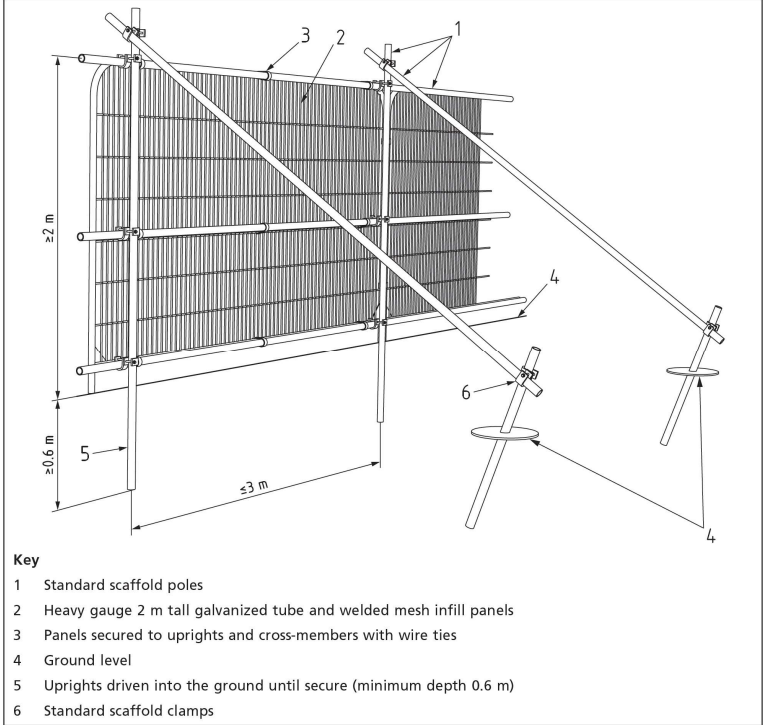
Figure 1: Phase 1 Habitat Map

Date : 10-09-20	Checked : JD
Drawn : MTR	Approved : N/A
Status : Final	Scale : NTS

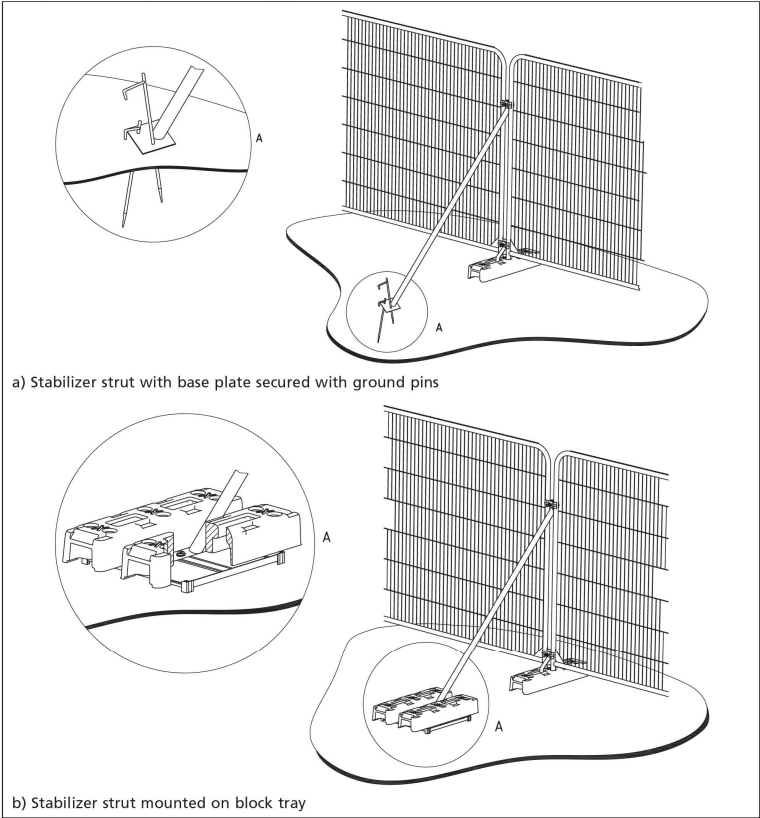
Greenspace Ecological Solutions

Copyright - Greenspace Ecological Solutions
No dimensions are to be scaled from this drawing.
All dimensions are to be checked on site. All measurements are for indicative purposes only.

Default specification for protective barrier



Examples of above-ground stabilizing systems



Job Reference : J20955
Project Title: Land off Whitehill Road

Figure 2: Tree Protection Measures

Date : 10-09-20 Checked : JD
Drawn : MTR Approved : N/A
Status : Final Scale : NTS

Appendices

APPENDIX A – PHOTOGRAPHS



Plate 1. Semi-improved grassland



Plate 2. Semi-improved grassland



Plate 3. Semi-improved grassland



Plate 5. Semi-improved grassland



Plate 6. Scrub



Plate 7. Scrub



Plate 8. Tall ruderal



Plate 9. Tall ruderal



Plate 10. Scattered trees



Plate 11. Bare ground



Plate 12. Hardstanding



Plate 13. TN1



Plate 14. TN4



Plate 15. TN3



Plate 16. TN4



Plate 17. TN5



Plate 18. TN7



Plate 19.



Plate 20. Mammal path



Plate 21. Badger latrine

APPENDIX B – CATEGORIES OF BAT ROOST SUITABILITY

Roost type Level of suitability	Summer Roost used by Non- Breeding Bats	Maternity Roost	Hibernation Roost
Confirmed roost	Presence of bats or evidence of bats identified. Confirmation of a roost will likely require further surveys.		
High	Building/Structure or tree with multiple opportunities for one or more species of roosting bat. Optimal orientation. Good connectivity to optimal foraging habitats.	Building/Structure or tree with multiple roosting opportunities for pregnant female bats and young pups. Optimal orientation. Good connectivity to optimal foraging habitats.	Building/Structure or tree that has suitable thermal stability and levels of humidity to support torpid bats throughout the winter months.
Moderate	Building/Structure for tree with some opportunities for roosting bats. Preferable orientation. Connectivity to moderate to high quality foraging habitat available.	Building/Structure or tree with some roosting opportunities for pregnant female bats and young pups. Good orientation. Good connectivity to moderate to high quality foraging habitats.	Building/Structure or tree that has suitable thermal stability and levels of humidity to support torpid bats for some of the winter months. Moderate connectivity to suitable foraging areas.
Low	Building/Structure or tree with limited opportunities for roosting bats. Poor connectivity to foraging habitat.	Building/Structure or tree with limited opportunities for breeding bats. Poor connectivity to foraging habitat.	Building/Structure or tree with limited potential to support hibernating bats due to instable environmental conditions.
Negligible	Building/Structure or tree with no or very limited opportunities for roosting bats. Little to no connectivity to foraging habitat	Building/Structure or tree with no or very limited opportunities for breeding bats. Little to no connectivity to foraging habitat.	No suitable roosting opportunities for hibernating bats.

APPENDIX C – MINIMUM NUMBER OF BAT SURVEYS REQUIRED IN MOST INSTANCES

Negligible	Low roost suitability	Moderate roost suitability	High roost suitability*
Dusk emergence and/or pre-dawn re-entry surveys unlikely to be required.	<p>Structures: 1 survey visit. 1 dusk emergence or pre-dawn re-entry survey.</p> <p>To be conducted during May – August.</p> <p>Trees: Dusk emergence and/or pre-dawn re-entry surveys unlikely to be required.</p>	<p>2 separate survey visits. 1 dusk emergence survey and 1 pre-dawn re-entry survey.</p> <p>To be conducted during May-September with at least one of the surveys May – August.</p>	<p>3 separate survey visits. At least 1 dusk emergence survey and a separate pre-dawn re-entry survey. The third visit could be either a dusk or dawn survey.</p> <p>To be undertaken during May-September with at least two of the surveys between May and August.</p>
<p>^a Structures that have been categorised as low suitability can be problematic, and the number of surveys required should be judged on a case by case basis. 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.</p> <p>^b Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; It is recommended that surveys are spaced out at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered one visit. If there is potential for a maternity colony, then consideration should be given to seasonal detectability and the ecologist should use their professional judgement to design the most appropriate survey regime.</p> <p>*For the purpose of this exercise a confirmed roost is considered under the criteria of 'High roost suitability'</p>			