



Leicester Road, Earl Shilton

## Ecological Impact Assessment

Prepared by  
CSA Environmental

on behalf of  
Gladman Developments Ltd

Report No: CSA/4519/09

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This report may contain sensitive ecological information. It is the responsibility of the Local Authority to determine if this should be made publicly available.

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## **EXECUTIVE SUMMARY**

Residential development is proposed at Leicester Road, Earl Shilton, for which outline planning permission will be sought.

CSA Environmental was instructed by Gladman Developments to undertake an Ecological Impact Assessment (EclA) of the proposed development. To inform this assessment, a desktop study followed by a suite of targeted species and habitat surveys were undertaken.

The Site presently comprises four grassland fields bounded by hedgerows. Important habitat features on-site include hedgerows and trees, bats, breeding birds, other notable mammals and reptiles. The scheme seeks to retain and enhance these features wherever practicable.

A suite of survey work found the on-site habitats to be used by common and widespread bat species, as well as a small population of grass snake and brown hare. Habitats used by these species are to be retained and protected where possible, with new habitat opportunities created as part of proposals.

Opportunities for ecological enhancement have been adopted within the scheme. Due to the nature of the development, it has not been possible to maintain all green infrastructure within the Site, however efforts have been made to retain and promote wildlife corridors around the development, which will help to maintain dispersal opportunities for wildlife.

Based on successful implementation of the proposed avoidance, mitigation and enhancement, the development is not anticipated to result in any significant residual negative effects on important ecological features. The scheme is considered to accord with all relevant nature conservation legislation, as well as with the provisions of the Hinckley and Bosworth Core Strategy and Site Allocations and Development Management Policies.

## 1.0 INTRODUCTION

- 1.1 This report has been prepared by CSA Environmental on behalf of Gladman Developments. It sets out the findings of an Ecological Impact Assessment (EclA) of proposed development at Leicester Road, Earl Shilton (hereafter 'the Site'). Residential development is proposed at the Site, for which outline planning permission is sought.
- 1.2 The scope of this assessment has been determined with consideration of best-practice guidance provided by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) and the Biodiversity: Code of practice for planning and development published by the British Standards Institute (BS 42020:2013).
- 1.3 The Site occupies an area of c. 9.5ha and consists of four semi-improved grassland fields with some areas of horse grazed pasture, bounded by hedgerows. (see Habitats Plan in Appendix A). The Site is located around central grid reference SP 465 984, to the north of Earl Shilton. The landscape context of the Site is dominated by arable fields to the north, east and west with scattered parcels of semi-natural woodland connected by a network of field boundary hedgerows. Urban development dominates the landscape immediately south.
- 1.4 An initial desk study and extended Phase 1 Habitat survey were undertaken for the Site in September 2019 as part of a Preliminary Ecological Appraisal, the findings of which are presented herein. In addition, the following further survey work was undertaken between September 2019 and August 2020:
  - Bat surveys (September 2019 to July 2020)
  - Badger survey (January 2020)
  - Breeding bird survey (April to June 2020)
  - Reptile presence/absence survey (April 2020 to August 2020)
  - Great crested newt survey (January to April 2020)
  - Hedgerow assessments (June 2020)
- 1.5 This EclA aims to:
  - Establish baseline ecological conditions at the Site.
  - Determine the importance of ecological features which could be affected by the proposed scheme.
  - Identify any likely significant impacts or effects of the proposed development on important ecological features, in the absence of mitigation, including cumulative impacts.
  - Set out any measures necessary to effectively avoid or mitigate likely significant effects, and identify residual impacts.
  - Identify any compensation measures required to offset residual impacts.

- Set out potential ecological enhancement measures that may be secured by the proposed scheme.
  - Confirm how proposed mitigation, compensation and enhancement measures could be secured.
  - Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation, and where appropriate, to allow conditions or obligations to be proposed by the relevant authority.
- 1.6 An EclA can be used for the appraisal of projects of any scale. This is a best practice evaluation process, recommended by CIEEM (2018). It is intended that the evaluation of findings presented here-in will aid the Hinckley and Bosworth District Council in their review of the planning application.

## **2.0 LEGISLATION, PLANNING POLICY & STANDING ADVICE**

### **Legislation**

- 2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:
- The Conservation of Habitats and Species Regulations 2017 (as amended)
  - The Wildlife and Countryside Act 1981 (as amended)
  - The Natural Environment and Rural Communities (NERC) Act 2006
  - The Protection of Badgers Act 1992
- 2.2 This above legislation has been addressed, as appropriate, in the production of this report. Further information on the above legislation is provided in Appendix B.

### **National Planning Policy**

- 2.3 The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) sets out the government planning policies for England and how they should be applied. Chapter 15: Conserving and Enhancing the Natural Environment, is of particular relevance to this report as it relates to ecology and biodiversity. Further details are provided in Appendix B.
- 2.4 Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). The Natural Environment PPG addresses biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services. Further guidance in respect of statutory obligations for biodiversity conservation within the planning system is provided by Government Circular 06/2005.

### **Local Planning Policy**

- 2.5 A number of local planning policies relate to ecology, biodiversity and/or nature conservation. These are summarised in Table B.1 of Appendix B. These policies have been addressed, as appropriate, in the production of this report.

### **Standing Advice**

- 2.6 Natural England Standing Advice regarding protected species aims to support local authorities and forms a material consideration in determining applications in the same way as any individual response received from Natural England following consultation. Standing advice has therefore been given due consideration, alongside other detailed

guidance documents, in the scoping of ecological surveys and production of this report.

## 3.0 METHODS

### Desk Study

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) online database was reviewed in September 2019 to identify the following ecological features (based on the Site's likely 'zone of influence' in respect of such features):
- Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites within 10km of the Site (including possible/proposed sites)
  - Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Local Nature Reserves (LNR) within 3km of the Site
  - Other relevant data e.g. Ancient Woodland Inventory within 1km of the Site
- 3.2 Leicestershire and Rutland Environmental Records Centre (LRERC) was contacted for details of any non-statutory nature conservation designations and records of protected/notable habitats and species. This information was requested for an area encompassing the Site and adjacent land within c. 2km of its central grid reference. This search area was selected to include the likely zone of influence of effects upon non-statutory designations and protected or notable habitats and species. Other online sources were reviewed for relevant biological records, reports and background information.
- 3.3 Further online resources were reviewed for information which may aid the identification of important ecological features. The Woodland Trust's online Ancient Tree Inventory was reviewed for known ancient or veteran trees within the Site and adjacent land. Interactive online mapping provided by the charity 'Buglife' was used to determine whether the Site falls within an Important Invertebrate Area.
- 3.4 In accordance with Natural England's Great Crested Newt Mitigation Guidelines (2001), a desktop search was undertaken to identify ponds within 500m of the Site which may have potential to support breeding great crested newts *Triturus cristatus*, using Ordnance Survey (OS) mapping, the MAGIC database and aerial photography.
- 3.5 Relevant desk study data are presented in Appendix C.

### Field Surveys

#### Extended Phase 1 Habitat Survey

- 3.6 An extended Phase 1 habitat survey was carried out in fine and dry weather conditions on 22 August 2019 by Becca Grainger-Wood ACIEEM, encompassing the Site and immediately adjacent habitats that could be viewed.

3.7 Phase 1 Habitat survey is a method of classification and mapping wildlife habitats in Great Britain. It was originally intended to provide “...*relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside.*” The Phase 1 Habitat Survey method has been widely ‘extended’ beyond its original purpose to allow the capture of information at an intermediate level between Phase 1 and Phase 2 Habitat surveys. Here, the standard survey method has been ‘extended’ in this report to include the following:

- More detailed floral species lists for each identified habitat
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition
- Mapping of additional habitat types (e.g. hardstanding)
- Identification of Habitats of Principal Importance in respect of Section 41 (S41) of the NERC Act 2006
- Identification of Habitats Directive Annex I habitat types
- Evidence of, or potential for, European Protected Species (EPS) (including bats, great crested newt, dormouse and otter)
- Evidence of, or potential for, other protected species (including birds, reptiles, water vole, badger and certain invertebrates)
- Evidence of, or potential for, other notable species (including S41 Species of Principal Importance as well as notable, rare, protected or controlled plants and invertebrates)

3.8 Results of the extended Phase 1 Habitat survey are presented on the Habitats Plan in Appendix A. Appendix D provides a list of floral species recorded in each habitat.

#### Further Survey Work

3.9 The following detailed field survey work was carried out September 2019 and August 2020, with full methods and results provided in the relevant Appendices:

- Bat Survey (Appendix F)
- Badger Survey (Appendix G)
- Breeding Bird Survey (Appendix H)
- Reptile Survey (Appendix I)
- Great Crested Newt Survey (Appendix J)
- Hedgerow Assessments (Appendix K)

#### **Limitations**

3.10 There were no specific limitations to the desktop study or extended Phase 1 habitat survey, which was conducted at an optimum time of year and in good conditions. Limitations to the protected species surveys are discussed in the relevant appendix.

## **Evaluation and Assessment**

- 3.11 Ecological features are identified, evaluated and assessed in accordance with the CIEEM Guidelines for Ecological Impact Assessment (2018), with detailed methods provided in Appendix E.
- 3.12 It is an established principle (CIEEM, 2018) that EclA is an iterative process. Specialist advice on the avoidance and mitigation of the potential negative effects of the proposed development has been input from an early design stage.

## 4.0 BASELINE ECOLOGICAL CONDITIONS

### Nature Conservation Designations

#### Statutory

- 4.1 There are no statutory designations covering any part of the Site. In addition, no international statutory designations were identified within 10km of the Site, or national or local statutory designations within 3km of the Site. Statutory designations are scoped out of further assessment.

**Table 1.** Statutory and non-statutory designations within search radii

| Site Name & Designation                                   | Distance & Direction from Survey Area | Special Interests or Qualifying Features   |
|-----------------------------------------------------------|---------------------------------------|--------------------------------------------|
| International Designations within 10km                    |                                       |                                            |
| -                                                         | -                                     | -                                          |
| National Designations within 3km                          |                                       |                                            |
| -                                                         | -                                     | -                                          |
| Local Designations within 3km                             |                                       |                                            |
| -                                                         | -                                     | -                                          |
| Non-statutory Designations within 2km                     |                                       |                                            |
| Thurlaston Brook Hedgerow                                 | c. 0.7km south-west                   | Hedgerow.                                  |
| Peckleton, Hedgerows                                      | c. 0.8km north-east                   | Species-rich hedgerows.                    |
| Kirkby Road Hedgerows                                     | c. 1.3km north-west                   | Species-rich hedgerows.                    |
| Normanton Wood Hedgerow                                   | c. 1.3km east                         | Species-rich hedgerow.                     |
| Mallory Park Grassland & Churchyard Trees, Kirkby Mallory | c. 1.9km north-west                   | Mesotrophic grassland with standard trees. |
| Shilton Road Hedgerow, Kirkby Mallory                     | c. 1.9km north-west                   | Species-rich hedgerow.                     |
| Ashby Rd/Kirkby Rd Track Hedgerows & Trees                | c. 2.2km west                         | Species-rich hedgerow with ash standards.  |
| Peckleton, Grassland and Tree                             | c. 2.3km north                        | Mesotrophic grassland with oak standard.   |

#### Non-Statutory

- 4.2 Eight non-statutory designations were identified within 2km of the Site, these comprise potential Local Wildlife Sites (pLWS), details of these and location in relation to the proposed site are listed in Table 1 below.
- 4.3 All of the potential LWS's are located over 800m from the proposed development Site. Six of the pLWS's comprise habitat features such as

single hedgerows or trees, rather than open areas of accessible habitat and are therefore not likely to be affected by an increase in recreational pressure. These features are also not connected hydrologically to the Site and as such are not anticipated to be impacted by any pollutants or run-offs as a result of the proposed development.

- 4.4 The two remaining pLWS's comprise areas of grassland; Mallory Park Grassland & Churchyard Trees, Kirkby Mallory (located c. 1.9km north-west) and Peckleton, Grassland and Tree (located c. 2.3km north). Given the distance of these designations from the Site, the availability of nearer areas of recreational space, and lack of hydrological connectivity, development at the Site is not anticipated to result in a negative effect on these protected sites.
- 4.5 Non-statutory designations are scoped out of further assessment.
- 4.6 As LWS's are designated according to criteria applied in a county context, these sites are considered to be ecologically important at the County level.

## **Habitats and Flora**

### Ancient Woodland

- 4.7 There is no designated Ancient Woodland covering any part of the Site or immediately adjacent land. No trees on or adjacent to Site are listed on the Ancient Tree Inventory.

### Notable Flora Records

- 4.8 The LRERC provided 45 records of 21 notable plant species from within the search area. Those of potential relevance to the Site include knot grass *Acronicta rumicis*, common mouse-ear *Cerastium fontanum*, greater celandine *Chelidonium majus*, bluebell *Hyacinthoides non-scripta* and spearmint *Mentha spicata*.
- 4.9 Several invasive plants were recorded within the data search, including variegated yellow archangel *Lamium galeobdolon subsp. argentatum*, Himalayan balsam *Impatiens glandulifera* and Japanese knotweed *Fallopia japonica*. None of these were recorded during the Site visits.
- 4.10 None of the species above were recorded on-site, and no other protected or notable species were identified during the field survey. The flora on-site is anticipated to be important at the less than Local level.

### Habitats

- 4.11 The following habitats were recorded on-site and classified in line with current Phase 1 Habitat species guidance (JNCC, 1990), as illustrated in Appendix A. Detailed species lists for each habitat are provided in Appendix D.

#### *Semi-improved grassland*

- 4.12 The Site comprises four semi-improved grassland fields, two of which are subject to livestock grazing (horses in Field F1 and sheep in Field F4). Field F2 comprises unmanaged semi-improved grassland with a tall sward whereas Field F3, located to the south of the Site and adjacent to the residential area of Earl Shilton is managed as short sward semi-improved grassland. Species recorded included cock's-foot *Dactylis glomerata*, Yorkshire fog *Holcus lanatus*, perennial rye-grass *Lolium perenne*, annual meadow grass *Poa annua*, false oat-grass *Arrhenatherum elatius*, rough chervil *Chaerophyllum temulum*, common couch *Elymus repens*, goat's beard *Aruncus dioicus*, red campion *Silene dioica*, sweet vernal grass *Anthoxanthum odoratum*, foxtail sp. *Alopecurus* spp., yarrow *Achillea millefolium*, common sorrel *Rumex acetosa*, meadow buttercup *Ranunculus acris*, rough meadow grass *Poa trivialis*, common hogweed *Heracleum sphondylium*, smooth meadow grass *Poa pratensis*, soft brome *Bromus hordeaceus*, red fescue *Festuca rubra*, common chickweed *Stellaria media*, petty spurge *Euphorbia peplus*, common-field speedwell *Veronica persica* and white dead-nettle *Lamium album*. A full species list is provided in Appendix D. A small area to the west of F4 was wetter in nature and hosts some species with an affinity to wetter habitats such as great willowherb *Epilobium hirsutum* and brooklime *Veronica beccabunga*.
- 4.13 Field F1 to the west of the Site comprises grassland with a tall sward and areas of dense nettle growth. Vegetation was dense, including areas of tussocky grasses such as *Deschampsia* sp., and areas of dense bramble *Rubus fruticosus* agg. scrub.
- 4.14 Grassland on-site is dominated by common species typical of this habitat. Semi-improved grassland is common both on-site and within the wider area. This habitat is considered to be important at the less than Local level and is scoped out of further assessment.

#### Hedgerows and Trees

- 4.15 All fields were bounded by tall, dense hedgerows. Species recorded include field maple *Acer campestre*, common alder *Alnus glutinosa*, dogwood *Cornus* sp., hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, ash *Fraxinus excelsior*, willow *Salix* sp., elder *Sambucus nigra*, rowan *Sorbus aucuparia* and elm *Ulmus* sp.
- 4.16 Hedgerow assessments have been undertaken to determine whether features on-site are 'Important' under the Hedgerow Regulations (1997). Full results can be seen in Appendix K.
- 4.17 Of the hedgerows present on-site, one hedgerow was valued as 'Important'; Hedgerow H15, located along the southern boundary of Field F1 as this feature supports seven woody species and contains few gaps along its length. On-site hedgerows, and this feature in particular,

should be retained and protected alongside proposals wherever possible.

- 4.18 Mature trees can be found across the Site, predominantly associated with the hedgerows. Species of mature tree include ash, hawthorn and hazel.
- 4.19 Hedgerows are adopted as a Section 41 Habitat of Principal Importance under the NERC Act 2006. The individual hedgerows on-site vary in their management, structural integrity and composition but excluding Hedgerow H15, features are generally considered to exhibit low species diversity. Hedgerows and mature trees on-site hold intrinsic ecological value as well as providing foraging and dispersal opportunities for a range of fauna. Hedgerows and mature trees are considered to be important at the Local level.

#### Plantation Woodland

- 4.20 A small area of young broadleaved plantation woodland is present in the north of Field F3; which aerial mapping shows to be c. 10 years old. The species recorded here include ash, rowan, dogwood, field maple, cherry *Prunus* sp., alder and blackthorn.
- 4.21 There is a smaller area of plantation woodland to the south of the on-site pond, with species including ash, *Prunus* sp., alder, field maple and rowan.
- 4.22 Woodland on-site comprises a small areas of semi-mature plantation woodland. The woodland contains a mix of species but historic aerial photography shows that it has been recently planted and does not comprise semi-natural habitat. This woodland is considered to be important at the less than Local level in its current condition and is scoped out of further assessment.

#### Scrub and Tall Ruderal Vegetation

- 4.23 Areas of both scattered and dense bramble scrub are prevalent throughout the Site. The dense bramble scrub is located adjacent to hedgerows in parts of the Site, whereas it is scattered throughout within other areas, such as Field F1. A dense patch of bramble scrub and small sapling trees such as hawthorn, blackthorn and elder are located off-site to the south of Field F4 on a raised bank, with stands of dense ruderal vegetation.
- 4.24 Scattered ruderals comprising nettle *Urtica dioica*, creeping thistle *Cirsium vulgare*, hogweed and uncut grasses are frequent throughout the Site. Field margins support stands of tall ruderal vegetation with some more dense areas present within Fields F2 and F4.
- 4.25 Scrub and tall ruderal vegetation on-site are dominated by species typical of these habitats. This habitat is common and widespread on-site

and in the wider area. Areas of tall ruderal vegetation and scrub are isolated and provide limited connectivity to the wider area. As such, this habitat is considered to be important at the less than Local level and is scoped out of further assessment.

#### Aquatic Features

- 4.26 A pond is present in the south of Field F3, which appears to be permanently wet, hosting species such as bulrush *Typha* sp., great willowherb, pendulous sedge *Carex pendula*, soft rush *Juncus effusus* and fool's-watercress *Apium nodiflorum*. Ponds are an important ecological feature and can support a range of native species.
- 4.27 A dry ditch runs from the plantation woodland adjacent to Hedgerow H10 southwards along Hedgerow H7. At the time of survey, the ditch was damp but not seen to be holding water. It measures c. 1m wide and is banked on either side. Duckweed *Lemnoideae* sp. was recorded in the ditch, suggesting it occasionally holds water.
- 4.28 Where ditches are present associated with hedgerows, such as the feature described above, they are taken to be a component part of the S41 hedgerow habitat. The importance of hedgerows is considered above.
- 4.29 Further survey work found the on-site pond to contain a high density of fish and as such it does not comprise a wildlife pond. The pond on-site does not meet 'Priority Habitat' criteria. Although ponds provide good aquatic habitat, the on-site pond supports little wildlife and as such is considered important at the less than Local level and is scoped out of further assessment.

#### Structures

- 4.30 One small structure comprising a small animal shelter is located on-site within Field F4. The structure comprises a horse shelter and is open-fronted, constructed from wooden panels and has a corrugated metal roof. A large outbuilding is located just off-site, along the southern boundary of Field F3.
- 4.31 Buildings are a man-made habitat and possess negligible ecological value as a habitat and as such are scoped out of further assessment. Their importance in respect of protected species is discussed in the following sections.

### **Fauna**

#### Bats

- 4.32 A total of 44 bat records were identified within the search area, dating from 1994 to 2016. These include the following species: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, *Pipistrellus* sp., noctule *Nyctalus noctula*, brown long-eared *Plecotus*

*auritus*, serotine *Eptesicus serotinus* and whiskered/Brandt's bat *Myotis mystacinus/brandtii*.

- 4.33 The closest records are for passes of unidentified bat c. 0.3km south and whiskered/Brandt's bat c. 0.5km south. A number of roost records were returned in the search, including a roost of two common pipistrelle bats (c. 0.8km south), dating from 2015 and 30-40 pipistrelle bats, c. 1.4km south-west, dating from 2004. Further roost records were recorded of common pipistrelle, brown long-eared and unidentified bat species.
- 4.34 Habitats at the Site are likely to provide dark corridors for dispersing bats whilst the wet habitats and grassland habitats are likely to provide higher prey availability for foraging bats.
- 4.35 A suite of bat survey work has been undertaken at the Site to inform proposals. Full methodology and results of these surveys are provided in Appendix F.

#### *Ground-based tree assessment*

- 4.36 All trees at the Site were subject to ground-based tree assessments to determine their suitability to support roosting bats. The assessment was undertaken on 23 January 2020 by Alex Perry ACIEEM (Class Survey Licence CL18 2017-32919-CLS-CLS) and Tom Preece ACIEEM. In summary, one tree, Tree T4, was assessed as having 'Moderate' potential, three trees were found to have 'Low' potential (Trees T5, T6 and T7), and the remaining trees or groups of trees were found to have negligible potential.

#### *Preliminary Roost Assessment*

- 4.37 One structure was found to be present on-site and was surveyed for bat roosting potential. At the time of the survey, a second structure comprising an outbuilding to the south of Field F7 was located within the Site but due to boundary changes has since been removed. The assessment was carried out on 23 January 2020 by Alex Perry and Tom Preece. The open-sided horse shelter located on-site was found to offer 'Negligible' potential. The off-site outbuilding to the south of Field F3 was found to offer 'low' potential for roosting bats.

#### *Bat Activity Surveys*

- 4.38 Three seasonal dusk walked transect surveys and periods of automated static monitoring have been undertaken at the Site in September 2019, May and July 2020.
- 4.39 During the transect surveys, almost all records comprised common pipistrelle contacts, with one noctule recorded along the western boundary during the July transect survey. Bat activity was mostly restricted to two areas, the internal boundary spanning north to south,

and land within the westernmost field. Only general foraging activity was noted for these species, with no distinct dispersal flight lines observed.

4.40 Automatic static monitoring was also conducted in September 2019, May and July 2020 using three static detectors on each occasion. At least six species were recorded over the three monitoring periods, including common pipistrelle, soprano pipistrelle, noctule, *Myotis* sp., brown long-eared and serotine. In line with the transect survey results, bat activity was again dominated by common pipistrelle (c. 93% of total contacts) with lower numbers of soprano pipistrelle (c. 2% of total contacts), and remaining species recording 14 contacts or less at each monitoring point.

4.41 Determination of importance of bat species recorded within the Site and wider survey area is based upon the survey work undertaken as detailed above, with regard to guidance from Wray *et al.* (2010). Bats from the *Myotis* genus cannot be readily identified to species level from recordings alone so have been grouped together for the sake of importance. It is possible that brown long-eared bats may have been under recorded during surveys due to their 'quiet' echolocation not being detected by recording equipment. Table 2 below summarises the species recorded during the survey work and their levels of use alongside any behavioural patterns noted. The geographical valuation of species is also given.

**Table 2.** Importance of bat species using the Site, adapted from Wray *et al* (2010)

| Common Name         | Use of Site         | Comment                                                                                      | Importance in Geographical Context |
|---------------------|---------------------|----------------------------------------------------------------------------------------------|------------------------------------|
| Common pipistrelle  | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Most frequently recorded bat during transect surveys and static monitoring                   | Local                              |
| Soprano pipistrelle | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Second most frequently recorded bat during static monitoring surveys                         | Local                              |
| Brown long-eared    | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Low numbers recorded static monitoring surveys                                               | Local                              |
| Noctule             | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Once contact recorded during transect surveys, low numbers recorded during static monitoring | Local                              |
| <i>Myotis</i> sp.   | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Low numbers recorded during static monitoring                                                | Local                              |
| Serotine            | Roosting            | None identified                                                                              | Not applicable                     |
|                     | Commuting/ foraging | Low numbers recorded during static monitoring surveys                                        | Local                              |

- 4.42 The bat activity recorded is dominated by common and widespread bat species (common pipistrelle, soprano pipistrelle, brown long-eared, with low activity from rarer species (*Myotis* sp., noctule and serotine). No roosts were identified on-site. The presence of bat species at the Site are collectively considered to be important at the Local level.

#### Badger

- 4.43 The LRERC have provided 18 records of badger *Meles meles* from within the search area, dating from 2004 to 2017. The closest record is c. 0.2km north of a road casualty, most likely along Shilton Road. Records were also returned of setts and latrines within the search area, one sett record is of a main sett with 30+ entrances holes from 2014, c. 0.6km to the south-west of the Site.
- 4.44 Hedgerows and areas of plantation woodland at Site provide suitable habitat for sett building for badger, with other habitats and fruit bearing vegetation providing foraging opportunities. The area to the south of F4 comprises a densely vegetated bank of scrub and dense ruderals, which also offers opportunities for badger.
- 4.45 A detailed badger survey was undertaken on 23 January 2020 by Alex Perry ACIEEM and Tom Preece ACIEEM. No setts or holes were recorded during the survey but clear mammal paths along the southern boundary were visible, and suspected badger prints were recorded to the south of Field F2. A badger latrine was recorded along the southern boundary of Field F1, indicating that badgers are using this area for foraging and dispersal. Full methods and results are shown in Appendix G.
- 4.46 Whilst undertaken a great crested newt survey at ponds c. 480m south-west, an active badger sett comprised of at least five entrances was recorded within a patch of woodland. It is possible that badgers utilising the Site for foraging and dispersal are travelling from this sett.
- 4.47 Although evidence of badger was recorded on-site, this was limited to prints and latrines and this species is likely utilising the Site for foraging and dispersal. Badger are a common and widespread species, with their legal protection intended to prevent cruelty rather than as a reflection of any conservation concern. As no setts were recorded on-site, and there is an abundance of foraging habitat within the wider area, the badger population utilising on-site habitats are considered to be important at the less than Local level. Badger are scoped out of further assessment.

#### Dormouse

- 4.48 There were no records of dormouse *Muscardinus avellanarius* identified within the search area.
- 4.49 No records of dormouse *Muscardinus avellanarius* were identified within the search area. The distribution of dormice within Leicestershire is sparse

and scattered and habitats on-site are sub-optimal for this species. This species is considered to be likely absent and are scoped out of further assessment.

#### Riparian Mammals

- 4.50 There were no records of water vole *Arvicola amphibius* or otter *Lutra lutra* identified within the search area.
- 4.51 There is no suitable habitat on-site to support either otter or water vole. The ditch on-site is seasonally wet and is not substantial enough in terms of its profile or vegetation to host a population of either of these species. Aquatic habitats on-site are isolated and do not provide connectivity to off-site watercourses, limiting the likelihood of these species being recorded on-site. Riparian mammals are considered to be likely absent and are scoped out of further assessment.

#### Other Mammals

##### *Brown Hare*

- 4.52 Three records of brown hare *Lepus europaeus* were identified within the search area, dating from 2010 to 2015. The closest record is c. 970m north of the Site.
- 4.53 The Site is dominated by short sward grassland which comprises sub-optimal habitat for this species. The surrounding open arable landscape provides good opportunities for this species. A single hare was seen along the western boundary of Field F1 during the badger survey on 23 January 2020 and another within the off-site field north of Field F4 on 27 May 2020.

##### *Hedgehog*

- 4.54 Five records of hedgehog *Erinaceus europaeus* were identified within the search area, dating from 2013 to 2019. The closest record is c. 380m south of the Site.
- 4.55 Habitats at the Site are suitable to support hedgehog in the provision of foraging, sheltering and dispersal opportunities, although it is unlikely to support a notable population of this species.

##### *Harvest Mouse*

- 4.56 One record of harvest mouse *Micromys minutus* was identified within the search area, dating from 2010. The closest record is of a nest c. 1.2km north-west of the Site.
- 4.57 Selected habitats at the Site may be suitable to support this species, however, only isolated pockets are suitable and therefore they are considered unlikely to be present at the Site. Harvest mouse is scoped out of further assessment.

- 4.58 Brown hare are known to utilise habitats on-site and grassland for foraging and dispersal. It is anticipated that any populations of notable mammals present will be small and as such are considered to be important at the Local level.

#### Birds

- 4.59 A total of 215 records of 34 bird species were identified within the search area, dating from 2000 to 2016. Those of potential relevance to the Site include yellowhammer *Emberiza citrinella*, reed bunting *E. schoeniclus*, linnet *Linaria cannabina*, yellow wagtail *Motacilla flava*, house sparrow *Passer domesticus*, tree sparrow *P. montanus*, dunnock *Prunella modularis*, bullfinch *Pyrrhula pyrrhula*, starling *Sturnus vulgaris* and song thrush *Turdus philomelos*.
- 4.60 Breeding bird surveys were undertaken during spring/summer 2020. A total of 34 species were recorded during the survey, with snipe *Gallinago gallinago* included as an additional species recorded during an incidental visit to the Site. Of these, 12 species of conservation significance were recorded, namely house sparrow, starling, song thrush and linnet *Linaria cannabina*. Further details are given in Appendix H.
- 4.61 Bird activity was predominantly associated with the boundary hedgerows and scrub although the grassland was used for foraging by a small number of species. The pond supported two wetland species, snipe and moorhen *Gallinula chloropus*. Scrub habitats in the south of F1 and F4 were seen to exhibit greatest bird abundance and diversity.
- 4.62 The breeding bird assemblage of 25 species (confirmed, probably and possible on-site breeders) is considered to be of ecological importance at the Local level.

#### Reptiles

- 4.63 No reptile records were returned within the data search.
- 4.64 Unmanaged grassland areas, tall ruderal vegetation along field margins and pockets of scrub are likely to provide opportunities to support reptile species if they are present within the local area.
- 4.65 A reptile presence/absence survey was undertaken between April and August 2020. Full survey methodology and results are provided in Appendix I. Grass snake *Natrix natrix* (syn. *N. helvetica*) was recorded on-site with a peak count of one individual, constituting a small population size-class for this species (in line with HGBI guidance). A single grass snake was incidentally sighted on one occasion along the western boundary of Field F2 whilst walking the Site on 20 July 2020.
- 4.66 Grass snake is a common and widespread reptile species in Britain, afforded legal protection under the Wildlife and Countryside Act 1981.

The small population of grass snake found within the Site is considered to be important at the Local level.

#### Amphibians

- 4.67 A total of 83 records of three amphibian species were identified within the search area, including common frog *Rana temporaria*, smooth newt *Lissotriton vulgaris* and great crested newt *Triturus cristatus*.

#### *Great Crested Newt*

- 4.68 The data search returned 43 records of great crested newts from within the search area, with a large number of these in relation to surveys undertaken in 2018 conducted on the nearby consented development to the south 18/00225/REM. The peak count of great crested newts was 39 individuals, comprising a medium population. On-site habitats are suitable to support this species in their terrestrial phase, with hedgerow bases, unmanaged grassland and dense ruderals providing opportunities for this species.
- 4.69 Despite spending much of their annual lifecycle within the terrestrial environment, great crested newts are dependent upon the presence of suitable aquatic breeding habitat in order for a population to persist. One potential breeding pond was identified on-site during the site survey, while a further three appear to be present within 500m of the Site, based on OS mapping (see pond plan in Appendix J). A cluster of ponds are present within a woodland parcel c. 480m south-west of the Site. Access could not be obtained to visually inspect these ponds on the day of the HSI assessment, but was granted on 17 March 2020. Two of the ponds within this cluster, Ponds P4 and P5, are located adjacent to an area of woodland supporting a cluster of two additional ponds (Ponds P6 and P7). As such, all ponds within this cluster were included within the assessment as it is likely that any great crested newts within this area comprise a single meta-population. Full survey methodology and results are included in Appendix J.
- 4.70 A pond scoping and Habitat Suitability Index (HSI) assessment of the on-site pond and ponds within a dispersible distance was undertaken on 23 January 2020. Access was denied for Pond P3, c 370m east and Pond P2 was found to be not present. A HSI assessment of the on-site pond (Pond P1) scored 'Good' suitability for great crested newts, which was later degraded to 'Below Average' when a major fish presence was identified. Ponds P4 (c. 480m south-west) scored 'Below Average', whilst Ponds P5, P6 and P7 (c. 500m, 525m and 585m south-west respectively) scored 'Average' suitability. As such, further presence/absence survey work was undertaken in the suitable season at Ponds P1 and P4-P7.
- 4.71 A single traditional great crested newt presence/absence survey was undertaken at Pond P1 and Ponds P4-P7 on 17 March 2020. No great crested newts were recorded within Pond P1, and torchlight revealed

the pond to be well stocked with fish, including tench *Tinca tinca*, and rudd *Scardinius erythrophthalmus*, resulting in the reduction of HSI Suitability from 'Good' to 'Below Average'.

- 4.72 No great crested newts were recorded within Pond P4 and Pond P6. As Pond P5 comprises an ornamental garden/wildlife pond, no bottle trapping was undertaken to avoid damage to this pond. Torchlight surveying recorded 57 great crested newts within Pond P5 (39 males and 18 females). One male great crested newt was recorded within Pond P7 during the torchlight surveys.
- 4.73 Smooth newts were recorded in Pond P1, P4-P6 (peak count of 1, 45, 2, and 1 respectively).
- 4.74 Due to the impacts of the COVID-19 pandemic, only one traditional bottle trapping/torchlight survey could be undertaken. As such, results of the first survey were supplemented with presence/absence surveys in the form of eDNA sampling undertaken on 16 April 2020. The sampling identified no great crested newt DNA within Pond P1.
- 4.75 Based on the results of the traditional survey and eDNA sampling, great crested newts are anticipated to likely absent from Pond P1. Great crested newt presence has been confirmed within Ponds P5 and Pond P7. As eDNA sampling was not undertaken at Ponds P4 and P6, it is not possible to conclude likely absence on the basis of results from one traditional survey.
- 4.76 Given the cluster of Ponds P4 to P7 are located over c. 480m from the Site boundary and separated from the Site by the residential area of Earl Shilton, the great crested population within these ponds is considered to form a separate isolated meta-population. The low suitability of the on-site pond for this species due to the major fish stocks reduces the likelihood of this species to be present on-site, with further survey results indicating likely absence. Great crested newts are anticipated to be likely absent from the Site and are scoped out of further assessment.

#### Invertebrates

- 4.77 A total of 26 records of 17 invertebrate species were identified within the search area. Of the records returned 15 of these are Lepidoptera, all of which are common species.
- 4.78 Habitats at Site are common and widespread and are unlikely to host a notable assemblage of invertebrates. Invertebrates present are considered to be important at the less than Local level and are scoped out of further assessment.

## Future Baseline

- 4.79 The Site is presently under active management, including grazing and the periodic cutting of grassland and hedgerows. Notwithstanding the potential rotation of grazing type, these management interventions maintain the on-site conditions in a relatively stable state. There is no known intention to cease this management, other than to accommodate the proposed development should planning permission be granted. As such, the future baseline status of important ecological features is not anticipated to vary significantly from that at present."

## Summary of Ecological Features

- 4.80 Table 3 below summarises all important ecological features identified within the respective zones of influence, together with the geographic context of their importance:

**Table 3.** Summary of important ecological features and their geographic context

| Ecological Feature         | Geographic Context of Importance and/or Protection Status |
|----------------------------|-----------------------------------------------------------|
| Hedgerows and Mature Trees | Local                                                     |
| Bats                       | Local                                                     |
| Brown hare                 | Local                                                     |
| Birds                      | Local                                                     |
| Reptiles                   | Local                                                     |

## 5.0 ASSESSMENT OF EFFECTS

### The Proposed Development

- 5.1 Outline planning permission is sought for residential development at the Site. The following impact assessment is based on the Development Framework Plan prepared by CSA Environmental (CSA/4519/108) on behalf of Gladman Developments.
- 5.2 The construction phase of the proposed development will comprise the following:
- Cessation of rotational grassland cutting in Fields F2 and F3
  - Cessation of grazing within Fields F4
  - Removal of sections of hedgerow from H2, H7 and H8 for vehicular and pedestrian accesses (total c. 113m)
  - Construction of c. 140 residential dwellings
  - Construction of associated gardens, parking, access infrastructure, a play area and pump station
  - The establishment of Public Open Space (POS), including open parkland and a new trim trail, as well as recreational routes around the periphery of residential areas
  - Establishment of Sustainable Urban Drainage Systems (SUDS) including two new large attenuation basins and a swale set within new parkland to the north of the developed area
- 5.3 The operational phase of the proposed development will comprise the following:
- Occupation of new residential dwellings
  - Increase in human activity, including use of vehicles and presence of domestic pets
  - Increased artificial lighting and anthropogenic noise
  - Management of habitats within open space areas
  - Retention of agricultural management in Field F1

### Assumptions

- 5.4 The following assumptions have been made during the assessment of potential effects of the proposed development on important ecological features. Although 'assumed' and therefore taken as part of the pre-mitigation scenario, these measures are referenced in the proceeding sections where integral to the mitigation strategy.
- 5.5 In accordance with BS42020:2013, it is assumed that a Construction Environmental Management Plan (CEMP) will be secured by planning condition and prepared at the detailed design stage. In addition to the construction phase impact avoidance and mitigation measures identified in the following sections, the CEMP will detail standard

environmental control measures, including though not limited to the following:

- Implementation of strict protection measures for the root protection areas of retained trees and hedgerows, in accordance with BS5837:2012
- Standard best practice construction phase pollution prevention and control measures
- Sensitive working methods and timing to avoid direct impacts to nesting birds (generally vegetation removal outside nesting season of March through August)
- Updated ecological surveys, where necessary, to identify shifts in the baseline ecological condition in order that revised impact avoidance and mitigation measures can be adopted as required

- 5.6 In accordance with BS42020:2013, it is assumed that a Landscape and Ecology Management Plan (LEMP) will be secured by planning condition and prepared at the detailed design stage. The LEMP will set out measures for the establishment and long-term management of newly created and retained habitats to maximise benefits for biodiversity.

## **Potential Impacts and Ecological Effects**

### Hedgerows and Trees

- 5.7 The development will result in the permanent removal of internal sections of Hedgerows H2 (c. 20m) and H7 (c. 37m), in addition to trees along these sections. Breaks in boundary vegetation (c. 56m) will also be required at the main access point off Leicester Road, to the east. In the absence of mitigation, the loss of these habitats, of value at the Local level, will result in a reduction in habitat connectivity, inhibiting the dispersal of associated fauna across the Site. Dispersal opportunities around the periphery of the Site will largely be retained.
- 5.8 Additional impacts to retained hedgerows and trees may occur during the construction phase of development, through soil compaction and accidental damage. Taken together, these potential impacts are determined to result in a negative effect significant at the Local level.

### Bats

- 5.9 Development at the Site will result in the existing land use changing from pastoral and managed grassland to residential development. While these habitats are considered sub-optimal for bats in terms of a foraging resource, this land use change will affect the prey composition and availability of food resources for bats on-site. In addition, the presence of the pond and on-site ditch further increase the diversity of prey composition on-site for bats.

- 5.10 The Development Framework Plan illustrates impacts to existing hedgerows on-site, where sections are to be removed. The loss of these hedgerows will facilitate access into and around the development. Bat activity surveys found highest levels of bat activity along Hedgerow H7 and the north-eastern corner of Field F1 during transect surveys, with static monitoring recording a highest activity at the north of Field F1. Bat activity was recorded at a much lesser extent, along H8 and to the north of Hedgerow H7 along the edge of the plantation woodland. In the absence of mitigation, the change in land use and proposed hedgerow removal works will result in a reduction in habitat available for foraging and dispersing bats on-site and breaks in potential dispersal corridors.
- 5.11 Bat activity on-site was dominated by common pipistrelle bats, a common and widespread species. Very minimal activity of other common species (soprano pipistrelle, brown long-eared) and rarer species (noctule, serotine, *Myotis* sp.) was recorded. No bats categorised as the 'Rarest' species (Wray *et al*, 2010) were identified. Impacts to the habitats anticipated from the proposed development are therefore likely to affect only common and widespread bat species.
- 5.12 Trees to be removed to accommodate development proposals are limited to those determined to be of negligible bat roost potential. As such, in the absence of mitigation, no impacts to bat roosts are anticipated.
- 5.13 The ability of bats to utilise retained habitat features on-site may also be affected by increased in artificial lighting. Where light spill occurs on linear habitat features, such as hedgerows, this may deter more light-averse bat species from using these features.
- 5.14 Given the low diversity of bats found to use the Site and prevalence of common species, the significance attributed to these predicted effects is proportionate to the species known to use on-site habitats. As a result, in the absence of mitigation the proposed development is anticipated to result in a negative effect on bats, significant at the Local level.

#### Brown Hare

- 5.15 Brown hare is known to utilise on-site and adjacent habitats. Development at the Site may result in the loss of foraging and resting habitat for this species. The Site is situated on the northern edge of Earl Shilton, with open arable landscape present to the north, providing nearby alternative habitat for this species for individual hare to disperse into. In the absence of mitigation, the loss of habitat on-site for brown hare is anticipated to have an impact at the less than Local level.

#### Breeding and Nesting Birds

- 5.16 Development of the Site will result in breaches to internal and boundary hedgerows and vegetation, which are likely to support nesting birds.

Vegetation clearance may therefore result in an offence under the Wildlife and Countryside Act 1981 (as amended), if undertaken whilst birds are nesting.

- 5.17 The proposed development will result in the loss of open grassland habitat on-site. This will result in the loss of foraging habitat for birds such as starling and swift who have been recorded utilising the on-site habitats.
- 5.18 Breaches in hedgerow habitat are required along the eastern boundary to create an access point into the development. As well as the access point, two further breaches are to be made in order to facilitate development. A total reduction of c. 113m hedgerow is due to be removed, as well as scattered scrub used by a variety of birds, including species of conservation significance.
- 5.19 Other anthropogenic impacts such as increased noise, lighting, pet ownership and littering/vandalism could also adversely impact breeding bird populations at the Site through habitat degradation or direct disturbance.
- 5.20 It is likely that species such as house sparrow, starling and goldfinch *Carduelis carduelis* may not be negatively affected as a result of the proposed development, whilst others will be lost from the Site or displaced to boundary habitats e.g. linnet/greenfinch. Overall, in the absence of mitigation these effects are considered likely to have a less than Local impact on the breeding bird assemblage.

#### Reptiles

- 5.21 Reptile presence/absence surveys identified a small population of grass snake utilising on-site habitats. In the absence of mitigation, the proposed development is likely to result in the loss of modest areas of reptile habitat used by this species. Construction activities such as vegetation clearance and groundworks could kill and injure reptiles, which would constitute an offence under the Wildlife and Countryside Act 1981 (as amended). In the absence of mitigation, the proposals are therefore predicted to have a negative effect, significant at the Local level.

#### **Mitigation by Design**

- 5.22 It is an established principle (CIEEM, 2018) that, wherever possible, potential negative effects should be avoided through 'Mitigation by Design', as this gives greater certainty over deliverability, demonstrates a well-designed scheme and ensures the correct application of the 'Mitigation Hierarchy' (as advocated by BS42020:2013, Defra 2019 and CIEEM, CIRIA & IEMA 2016).

- 5.23 The Development Framework Plan allows for a retention of a swathe of grassland to the north of the developable area to provide recreational open space. The open space will include new vegetation planting to create visually appealing walking routes, delivery of two new SUDS basins and a swale as part of drainage design. The proposals also seek to retain key habitats on-site, including retention of Field F1 as agricultural land, hedgerows wherever possible and the on-site pond.

#### Hedgerows and Trees

- 5.24 Given the nature of the development, is necessary for minor breaches within the internal hedgerow network to facilitate access. The development proposals have been designed to retain and protect hedgerows and trees both at the periphery and internal boundaries, with additional planting proposed at boundaries where vegetation is currently absent, such as long the northern boundary adjacent to the Public Right of Way. Scattered tree planting is proposed across the development and public open space, which will act to partly mitigate for the proposed hedgerow losses.
- 5.25 In addition, Field F1 to the west of the Site and its external boundaries is to be retained as agricultural land. As such, Hedgerow H15 which was found to be 'Important' under the Hedgerow Regulations will be retained and unaffected as part of proposals.

#### Bats

- 5.26 The development proposals will result in the loss of semi-improved grassland habitats and short sections of hedgerows at the Site. The development proposals have been designed to retain and protect hedgerows and trees at the periphery of the Site, as well as internal boundaries where possible to ensure opportunities remain for foraging and dispersing bats. However, to compensate for the reduction in available habitat, new landscape planting is proposed across the development, particularly within the new area of open space. Treelines will also be established across the development to ensure green infrastructure corridors are present across the Site, in line with Spatial Objective Policy 10.
- 5.27 The on-site pond will be retained as part of proposals, and buffered with new open greenspace. A further two attenuation basins and a new swale will be created and in turn will promote habitat diversity and invertebrate prey availability.
- 5.28 The north of the Site will comprise a swathe of newly created open space, which will contribute to well-connected habitat corridors between the Site and natural habitat to the north and east. In addition, Field F1 and its boundary hedgerows will be retained for agricultural use and in turn will continue to provide foraging and dispersing opportunities for bats. The planting schedule for the Site will include native varieties of

known wildlife value, including night-scented varieties of benefit to night-flying invertebrates

#### Other Mammals

- 5.29 Development proposals will result in a loss of open grassland within Fields F2 to Field F4. The Site is situated adjacent to open farmland to the north and it is anticipated that any brown hare utilising these fields can easily dispersed into the adjacent habitat. Furthermore, proposals retain a swathe of greenspace along the north of the Site, buffering impacts of the development from open farmland habitat.
- 5.30 As part of proposals, Field F1, in which a brown hare was seen on-site, will be retained as agricultural land. In doing so, the proposals will continue to offer foraging and resting habitat for this species.

#### Breeding birds

- 5.31 Where possible, the development has retained boundary and internal field hedgerows, as well as the parcel of plantation woodland. To facilitate access into and around the Site, small breaches in hedgerow are required. The development proposals include a large swath of open greenspace to the north of the Site which will include provision of new hedgerow, tree and thicket vegetation which partly mitigate for the minor loss in nesting habitat.
- 5.32 The development will result in the loss of semi-improved grassland which provides foraging habitat for a range of bird species. As part of proposals, new grassland will be delivered as part of the open space provision and within amenity areas around the development, providing future foraging opportunities for bird species which may be using the Site. In addition, Field F1 to the west of the Site is to be retained as agricultural land as part of proposals and this grassland habitat and its boundary hedgerows will continue to provide foraging and nesting opportunities for birds. The detailed planting scheme will be designed to incorporate predominantly native species, and those of wildlife value e.g. seed/fruit-bearing to provide a foraging resource.

#### Reptiles

- 5.33 To make way for development proposals, grassland in parts of the Site will need to be removed. In doing so, areas of suitable grass snake habitat will be destroyed. Grass snake is a highly mobile and wide-ranging species. As such, it is assumed that this species is utilising all other on-site fields as well as Field F2 where it was recorded during the surveys. Proposals at the Site will retain a portion of existing grassland to the north of the Site to create the swathe of open space, including a portion of wildflower meadow. Grass snake rely on a habitat mosaic comprising of rough grassland and scrub habitat for survival. The on-site woodland and pond will be retained with a suitable green buffer, and the inclusion of

new vegetation planning within the open space will contribute towards creating a habitat mosaic suitable for this species.

### **Additional Mitigation**

#### Hedgerows and Trees

- 5.34 The avoid construction-phase impacts to hedgerows and trees construction will be undertaken in line with BS 5837:2012 "Trees in relation to design, demolition and construction – recommendations" to avoid damage to Root Protection Areas (RPA) of retained trees and hedgerows.
- 5.35 Management and maintenance of new and existing planting at the Site will be detailed within a LEMP at the detailed design stage. This will ensure ecologically sensitive practices are used and that the long-term ecological value of hedgerow and trees is a key objective.

#### Bats

- 5.36 The Development Framework Plan demonstrated that development is largely set back from retained site boundary vegetation with suitability to support dispersing bats. In order to further minimise the development edge effect of artificial lighting on foraging and dispersing bats, a sensitive lighting strategy will be developed at the detailed design stage. This strategy will ensure that dark corridors are maintained, especially adjacent to habitats within the open space, minimising light spill onto retained and newly created semi-natural habitats.

#### Brown Hare

- 5.37 Management and maintenance of the retained agricultural land at the Site will be detailed within a LEMP at the detailed design stage. This will ensure ecologically sensitive practices are used and that the long-term ecological value of the retained agricultural land for brown hare is a key objective.

#### Breeding Birds

- 5.38 To avoid the damage or destruction of nests and/or eggs of wild birds, any clearance of trees, scrub and other debris or rough vegetation e.g. dense nettles or pond vegetation will be undertaken outside of the bird nesting season (March to August inclusive) or following confirmation of the absence of nesting birds by a suitably qualified ecologist. These impact avoidance measures will be detailed within the CEMP to accompany construction-phase activities.
- 5.39 As part of proposals, new bird boxes will be delivered on retained trees or within the fabric of new buildings to replace lost nesting opportunities through the removal of hedgerow stretches and other suitable vegetation. New boxes should include sparrow terraces as well as a mix

of cavity and open fronted varieties to mitigate for confirmed on-site breeders.

### Reptiles

- 5.40 Construction works at the Site have the potential to kill or injure reptiles which may be using habitats on-site for foraging, sheltering or dispersal. A Reptile Mitigation Strategy should be prepared at the detailed design stage to outline the approach to vegetation removal on-site. Such measures will include sensitive, staged vegetation clearance outside of the hibernation period for reptiles.
- 5.41 To mitigate for the loss in grassland and scrub habitat, log piles should be created within the open space and around the on-site pond to provide new sheltering opportunities for reptiles.

### **Residual Effects**

- 5.42 Table 4 below summarises the assessment of potential impacts on each important ecological feature, proposed mitigation and the assessed residual effects.

**Table 4.** Summary of effects

| <b>Important Ecological Feature</b> | <b>Potential Impacts and Effects</b>                                                                                                                    | <b>Avoidance &amp; Mitigation Measures</b>                                                                             | <b>Mechanism by which Measures are Secured</b>                | <b>Residual Effects</b> |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-------------------------|
| Hedgerows and Trees                 | Removal of hedgerow stretches for site access and potential for accidental damage of retained vegetation during construction                            | Strengthening of boundary vegetation through infill planting. Adherence to BS5837:2012                                 | LEMP secured through Planning Condition                       | No significant effect   |
| Bats                                | Reduction in habitat availability and prey abundance. Potential development edge effects from artificial lighting causing disturbance to foraging bats. | New diverse habitat creation and management of POS for biodiversity gain. Production of a sensitive lighting strategy. | LEMP and Lighting Strategy secured through Planning Condition | No significant effect   |
| Brown Hare                          | Permanent loss of foraging and dispersal habitat                                                                                                        | Retention of suitable habitat                                                                                          | LEMP secured through Planning Condition                       | No significant effect   |
| Birds                               | Potential damage or destruction of nests and eggs<br>Loss of foraging habitat for a range of species                                                    | Sensitive timing of works / nest checks by ecologist, New habitat creation                                             | CEMP and LEMP secured through Planning Condition              | No significant effect   |

| Important Ecological Feature | Potential Impacts and Effects                                                                             | Avoidance & Mitigation Measures                                   | Mechanism by which Measures are Secured          | Residual Effects      |
|------------------------------|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|--------------------------------------------------|-----------------------|
| Reptiles                     | Potential to kill and injure reptiles during construction.<br>Loss of habitat for common reptile species. | Graded habitat management and enhancement<br>New habitat creation | LEMP and CEMP secured through Planning Condition | No significant effect |

- 5.43 Subject to the implementation of the above mitigation, no significant residual effects on any important ecological features are anticipated to result from the construction or operation of the proposed development.

### **Cumulative Effects**

- 5.44 Two nearby development sites have been identified for assessment with regard to cumulative effects; Earl Shilton Urban Extension and Hilltop Farm, Earl Shilton.

#### Earl Shilton Urban Extension

- 5.45 The Earl Shilton Urban Extension has been allocated under Policy 2 within the Hinkley and Bosworth Core Strategy and Policy 6 within the Earl Shilton and Barwell Area Action Plan. Policy states that the allocation can support a minimum of 1,600 homes. At the time of writing no planning application has been submitted for the Urban Extension however a scoping opinion (scoping opinion planning application reference 20/01056/SCOPE) for delivery of 1,500 homes and 5.3ha of employment land was submitted to the Council on 09 October 2020.
- 5.46 The proposed Urban Extension looks to be comprised of predominantly arable land to the south and grassland to the north.

#### Hilltop Farm

- 5.47 A planning application for Hilltop Farm, adjacent south of the Site (planning application 20/00916/FUL) was submitted to the Council on September 2020 and proposes demolition of existing farm buildings to make way construction of 49 new affordable homes and one bungalow. A Preliminary Ecological Appraisal has been submitted with the application and identified potential reptile, badger and bat roosting habitat on-site. No further ecological information has been submitted with the application. The site looks to support a number of buildings as well as scrub and semi-improved grassland.
- 5.48 From the ecological information available it appears that development will primarily result in the loss of arable land and to a lesser extent, grassland habitats. Assessment of the proposed development at the application side, when considered in isolation, has identified negative

effects on several ecological features, which subject to adoption of proposed mitigation, results in no residual effects. The schemes described above share a similar baseline habitat composition of grassland. When looked at together the likely cumulative changes are considered to result in a negative effect of no greater than local level importance. In other words, the local ecological resource are unlikely to be subject to an impact of any greater geographical significance than already assessed in terms of the Site coming forward in isolation.

### **Compensation**

- 5.49 No significant residual negative effects on important ecological features are anticipated to result from the proposed development, following the inclusion of impact avoidance and mitigation measures described above. As such, no compensatory measures are proposed.

### **Enhancement**

- 5.50 The Development Framework Plan includes landscape planting enhancements which will make positive contributions to on-site biodiversity.
- 5.51 New habitat creation will provide opportunities for species confirmed to be present on-site at baseline, such as nesting birds. In addition to these enhancements which are embedded into development proposals, a range of additional ecological enhancement measures will be delivered as part of the proposed development, as identified below. Further details will be set out in a LEMP at the detailed design stage, however as an indicative guide:
- Inclusion of plant species of known wildlife value within the landscaping scheme, including night-scented varieties to benefit bats.
  - Provision of new bat roosting opportunities: At least 14 no. bat boxes will be erected on mature trees or new builds. These will be a purpose-built, durable and long-lasting variety such as available from Schwegler or Habibat (or a similar design with equivalent functionality). Where possible, these will be incorporated into the fabric of new builds.
  - Provision of new bird nesting opportunities: At least 14 no. bird nesting boxes will be provided in new/retained planting to benefit generalist bird species. Swift and starling nest boxes also should also be installed at the Site to provide new habitat provisions for these species.
  - Creation of log piles: Timber generated from tree clearance works at the Site will be used to make at least 5 log piles for wildlife benefit. These will be sited within boundary vegetation where they will be least disturbed. New material can be added as required following any future management works.

- Enhancement of on-site pond: The on-site is current heavily stocked with a number of fish species. The fish should be removed from the pond, and new emergent and submerged aquatic planted provided within the waterbody. Where possible new SUDS features should also be managed for ecological benefit, such as by supporting a wet core.
- Provision of hedgehog gaps: Hedgehogs have been scoped out of detailed assessment and no specific mitigation is proposed, however it is important that opportunities for hedgehogs to move through the landscape are preserved. Although not strictly an 'enhancement' measure, provision of hedgehog-friendly gravel boards or equivalent, providing a minimum 5 x 5 inch gap, will be used to maintain permeability for hedgehogs across the development and associated gardens. The number and location of hedgehog gaps will be determined at the detailed design stage and set out within the LEMP.

## **Monitoring**

- 5.52 No post-development monitoring of important ecological features is proposed. However, there will be ongoing monitoring of newly established and enhanced habitats as part of POS. This commitment will be made, and further detail provided, within the LEMP to be prepared at the detailed design stage.

## 6.0 CONCLUSIONS

- 6.1 In the absence of any mitigation measures, the proposed development would have the potential to result in negative effects significant at up to the Local level. However, with the implementation of some straightforward mitigation and precautionary measures as proposed here, the development is not anticipated to result in any significant residual negative effects on important ecological features.
- 6.2 The Development Framework demonstrates the potential to deliver net benefits for wildlife in the form of additional habitats, with the opportunity to provide additional biodiversity enhancement measures alongside the new housing.
- 6.3 The measures set out herein can be secured through appropriate conditions attached to any planning consent, and the development may therefore be delivered without harm to nature conservation interests. Specifically, it is anticipated that planning conditions would be used to secure:
- Construction Environmental Management Plan (CEMP): In addition to wider environmental controls and best practice construction management, the CEMP will set out construction-phase impact avoidance measures with respect to nesting birds, hedgehogs, and reptiles.
  - Landscape and Ecology Management Plan (LEMP): The LEMP will detail the establishment and long-term management of retained and newly created habitats to maximise benefits for wildlife. It will include a graphical Ecological Enhancement Plan, setting out the number, type and position of enhancement features.
  - Lighting Strategy: A sensitive lighting strategy will accompany the detailed layout, ensuring that dark corridors are maintained, and minimising light spill onto retained and newly created habitats.
- 6.4 Based on the successful implementation of avoidance, mitigation and enhancement measures set out herein, the scheme is considered to accord with all relevant nature conservation legislation, as well as with the provisions of the Hinckley and Bosworth Core Strategy and Site Allocations and Development Management Policies

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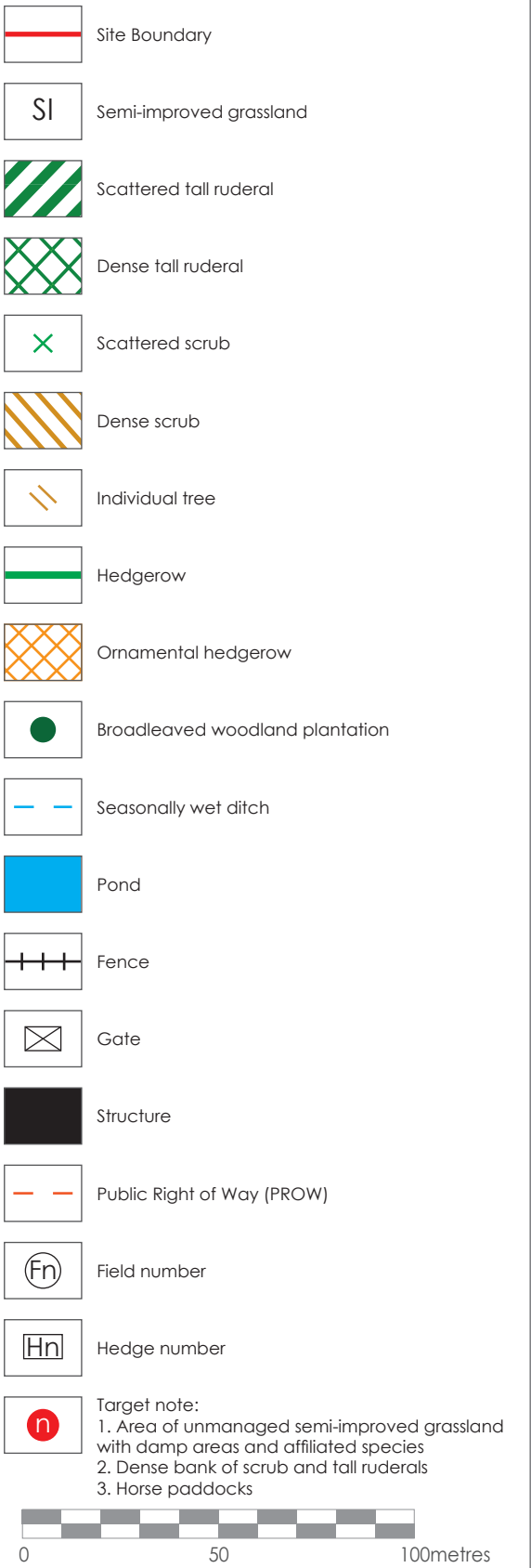
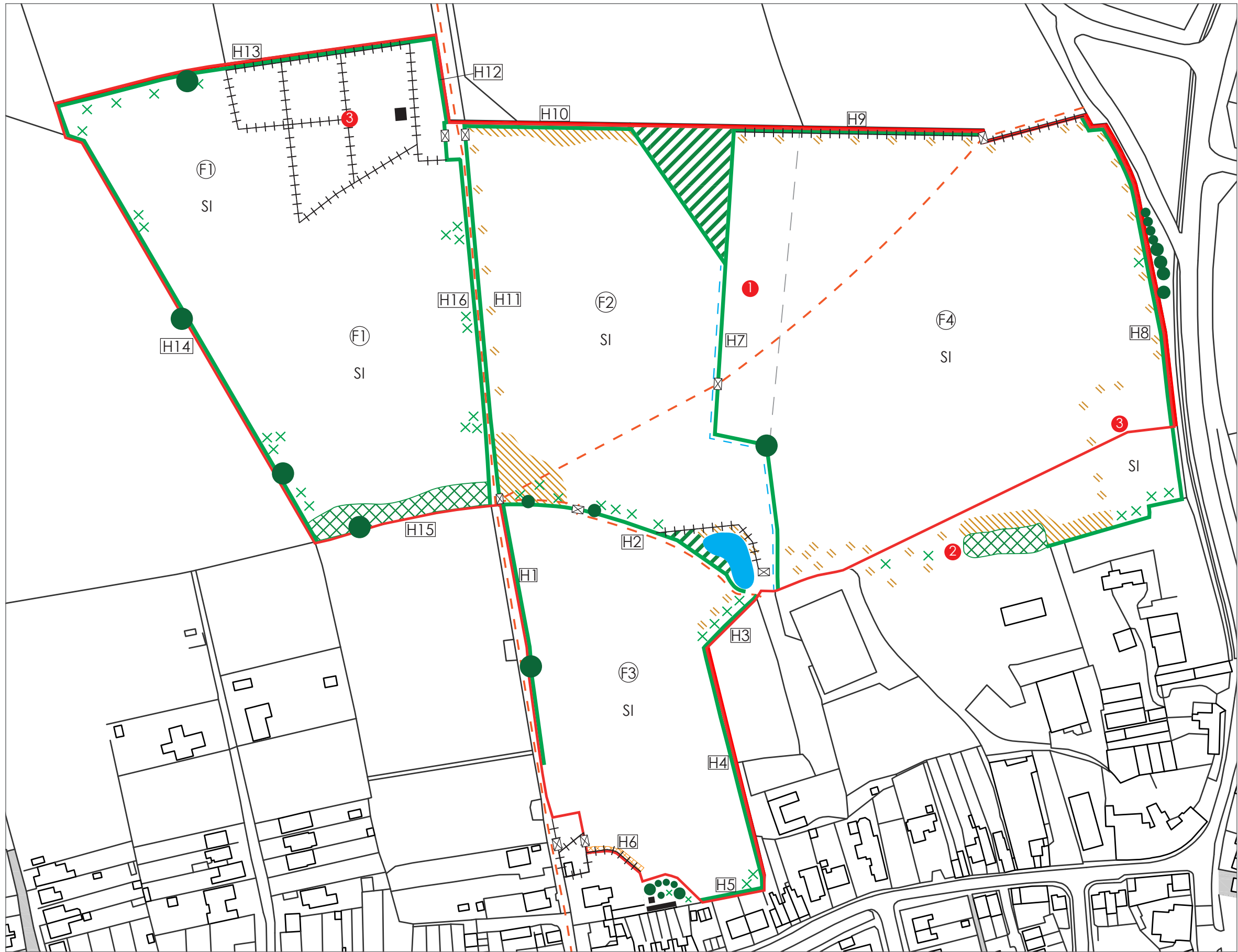
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## **Appendix A**

Habitats Plan & Photosheet



Suite 1, Deer Park Business Centre,  
Eckington, Pershore WR10 3DN

01386 751100  
pershore@csaenvironmental.co.uk  
csaenvironmental.co.uk

|               |                              |       |                |             |              |
|---------------|------------------------------|-------|----------------|-------------|--------------|
| Project       | Leicester Road, Earl Shilton | Date  | October 2019   | Drawing No. | CSA/4519/105 |
| Drawing Title | Habitats Plan                | Scale | Refer to scale | Rev         | B            |
| Client        | Gladman Developments Ltd     | Drawn | MS             | Checked     | AP           |



Photo 1. Grassland of Field F3 and Hedgerow H4.



Photo 2. Tall ruderal grassland margins.



Photo 3. On-site pond.

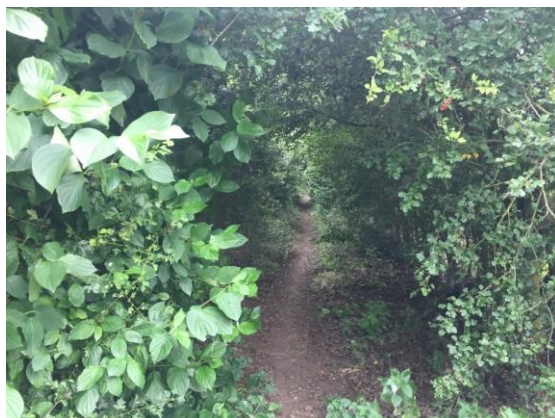


Photo 4. Hedgerows either side of Public Right of Way (PROW).



Photo 5. Field F1; unmanaged grassland.



Photo 6. Wetter grassland area of Field F4.



Photo 7. View of open sided horse shelter, looking north-west.



Photo 8. Large off-site outbuilding.



Photo 9. Interior of off-site large outbuilding.



Photo 10. Field F1, looking south



Photo 11. On-site pond, looking south-west.



Photo 12. Mature trees set within boundaries.

## **Appendix B**

### Legislation and Planning Policy

The Conservation of Habitats and Species Regulations 2017 (as amended) transposes Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora, and aspects of Council Directive 79/409/EEC on the Conservation of Wild Birds, into UK domestic law. The Regulations make prescriptions for the designation and protection of Sites of Community Importance ('European sites', e.g. Special Areas of Conservation and Special Protection Areas) and European Protected Species (EPS). Through the provisions of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, the Regulations retain all protections afforded to sites, habitats and species following the UK's departure from the European Union on 31st January 2020.

The **Wildlife and Countryside Act 1981** (as amended, principally by the Countryside and Rights of Way Act 2000) forms the basis for protection of statutory designated sites of national importance (e.g. Sites of Special Scientific Interest; SSSIs) and native species that are rare and vulnerable in a national context. Additionally, badgers are protected under the **Protection of Badgers Act 1992**.

Section 40(1) of the **Natural Environment and Rural Communities (NERC) Act 2006** states that each 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." This legislation makes it clear that planning authorities should consider impacts to biodiversity when determining planning applications, with particular regard to the Section 41 (S41) lists of 56 habitats and 943 species of principal importance. The UK Biodiversity Action Plan (BAP) has been superseded by the Biodiversity 2020 Strategy, which continues to prioritise the S41 lists, however Local BAPs continue to influence biodiversity management and conservation effort, including through the spatial planning system, at the local scale.

The **National Planning Policy Framework (2019)** (NPPF) sets out the government planning policies for England and how they should be applied. With regards to ecology and biodiversity, Chapter 15: Conserving and Enhancing the Natural Environment, paragraph 170, states that the planning system and planning policies should minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Paragraph 175 sets out the principles that local planning authorities should apply when determining planning applications:

- If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts).

- Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest.
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists.
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Accompanying the NPPF, central government guidance on the implementation of planning policies is set out within online Planning Policy Guidance (PPG). That relating to the protection and enhancement of the Natural Environment was most recently updated in July 2019. The Natural Environment PPG addresses principles across a broad spectrum of topics targeting biodiversity conservation, from individual site and species protection through to the supporting of ecosystem services, and the use of local ecological networks to support the national Nature Recovery Network. In particular the PPG promotes the delivery of measurable Biodiversity Net Gain through the creation and enhancement of habitats alongside development.

The Government Circular 06/2005, which is referred to within the NPPF, defines statutory nature conservation sites and protected species as a material consideration in the planning process.

Local planning policies of relevance to ecology, biodiversity and/or nature conservation have been set out in Table B.1 below.

**Table B.1.** Summary of regional and local planning policy relating to ecology

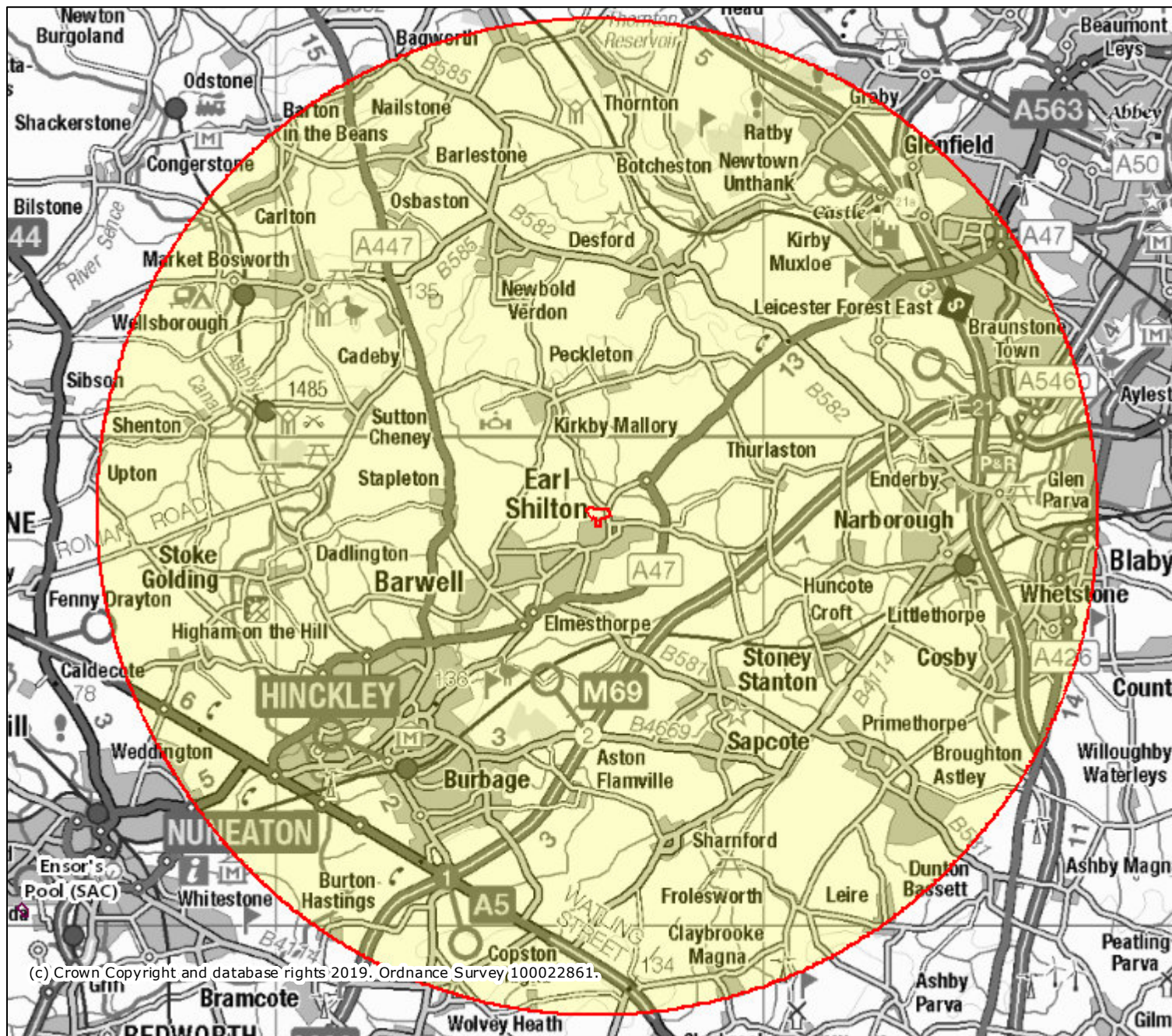
| Policy                                                                                              | Summary                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hinckley &amp; Bosworth Site Allocations and Development Management Policies DPD (July 2016)</b> |                                                                                                                                                                                                                                                                                                                                                                                                             |
| Policy DM6:<br>Enhancement of Biodiversity and Geological Interest                                  | <p>Development proposals must demonstrate how they conserve and enhance features of nature conservation and geological value including proposals for their long term future management.</p> <p>Major developments in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services.</p> |

| Policy | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | <p>Proposals where the primary objective is to conserve or enhance biodiversity or geological interest will be permitted where they comply with other relevant policies in the plan.</p> <p>On site features should be retained, buffered and managed favourably to maintain their ecological value, connectivity and functionality in the long-term. The removal or damage of such features shall only be acceptable where it can be demonstrated the proposal will result in no net loss of biodiversity and where the integrity of local ecological networks can be secured.</p> <p>If the harm cannot be prevented, adequately mitigated against or appropriate compensation measures provided, planning permission will be refused.</p> <p>In addition to the above, where specific identified sites are to be affected the following will be taken into account:</p> <p><b>Internationally and Nationally Designated Sites:</b></p> <p>International and Nationally Designated Sites will be safeguarded. Development which is likely to have any adverse impact on the notified features of a nationally designated site will not normally be permitted.</p> <p>In exceptional circumstances, a proposal may be found acceptable where it can be demonstrated that:</p> <ul style="list-style-type: none"> <li>a) A suitable alternative site with a lesser impact than that proposed is not available; and</li> <li>b) The on-site benefits of the proposal clearly outweigh the impacts on the notified features of the site and where applicable, the overall SSSI or habitat network; and</li> <li>c) All appropriate mitigation measures have been addressed through the development management process; and</li> <li>d) Development likely to result in a significant effect on internationally designated sites will be subject to assessment under the Habitats Regulations and will not be permitted unless adverse effects can be fully avoided, mitigated and/or compensated.</li> </ul> <p><b>Irreplaceable Habitats:</b></p> <p>Proposals which are likely to result in the loss or deterioration of an irreplaceable habitat would only be acceptable where:</p> <ul style="list-style-type: none"> <li>e) The need and benefits of the development in that location clearly outweigh the loss; and,</li> <li>f) It has been adequately demonstrated that the irreplaceable habitat cannot be retained with the proposed scheme; and</li> <li>g) Appropriate compensation measures are provided on site wherever possible and off site where this not is feasible.</li> </ul> <p><b>Locally Important Sites:</b></p> |

| Policy                                                               | Summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      | <p>Development proposals affecting locally important sites should always seek to contribute to their favourable management in the long term.</p> <p>Where a proposal is likely to result in harm to locally important sites (including habitats or species of principal importance for biodiversity), developers will be required to accord with the following sequential approach:</p> <p>h) Firstly, seek an alternative site with a lesser impact than that proposed;</p> <p>i) Secondly, and if the first is not possible, demonstrate mitigation measures can be taken on site;</p> <p>j) Thirdly, and as a last resort, seek appropriate compensation measures, on site wherever possible and off site where this is not feasible.</p> |
| <b>Hinckley &amp; Bosworth Core Strategy – Adopted December 2009</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Spatial Objective 10                                                 | Natural Environment and Cultural Assets To deliver a linked network of green infrastructure, enhancing and protecting the borough's distinctive landscapes, woodlands, geology, archaeological heritage and biodiversity and encourage its understanding, appreciation, maintenance and development.                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## **Appendix C**

### Desk Study Information



### Legend

-  Ramsar Sites (England)
-  Proposed Ramsar Sites (England)
-  Special Areas of Conservation (England)
-  Possible Special Areas of Conservation (England)
-  Special Protection Areas (England)
-  Potential Special Protection Areas (England)

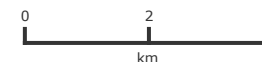
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ymin = 285900

xmax = 466500

ymax = 310600



Map produced by MAGIC on 10 September, 2019.  
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10/09/2019  
Site Check Report Report generated on Tue Sep 10 2019  
**You selected the location:** Centroid Grid Ref: SP46589836  
The following features have been found in your search area:

**Ramsar Sites (England)**  
No Features found

**Proposed Ramsar Sites (England)**  
No Features found

**Special Areas of Conservation (England)**  
No Features found

**Possible Special Areas of Conservation (England)**  
No Features found

**Special Protection Areas (England)**  
No Features found

**Potential Special Protection Areas (England)**  
No Features found



### Legend

-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  Sites of Special Scientific Interest (England)

Projection = OSGB36

xmin = 440400

ymin = 294300

xmax = 453400

ymax = 302400



Map produced by MAGIC on 10 September, 2019.  
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10/09/2019  
Site Check Report Report generated on Tue Sep 10 2019  
**You selected the location:** Centroid Grid Ref: SP46589836  
The following features have been found in your search area:

**Local Nature Reserves (England)**  
No Features found

**National Nature Reserves (England)**  
No Features found

**Sites of Special Scientific Interest (England)**  
No Features found

## **Appendix D**

### Habitats and Flora Species List

| Site name                        |                            | Earl Shilton, Leicester Road |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
|----------------------------------|----------------------------|------------------------------|-------|-------|-----------------|-------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|--|
| Survey date and surveyor         |                            | 22/08/2019 BGW               |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| Scientific name                  | Common name                | Habitat Type                 |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
|                                  |                            | F1                           | F2 SI | F3 SI | F3 - Unmanage d | F4 SI | F4 - Unmanage d | F5 | F6 | F7 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 | H9 | H10 | H11 | H12 | H13 | H14 | H15 | H16 |  |
| Herb species                     |                            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Achillea millefolium</i>      | Yarrow                     |                              |       |       |                 | X     |                 | X  | X  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Apium nodiflorum</i>          | Fooi's-water-cress         |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Chenopodium</i> sp.           | Goosefoot                  |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Cirsium arvense</i>           | Creeping thistle           | X                            | X     |       |                 |       | X               |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Convolvulus</i> sp.           | Bindweed                   |                              |       |       |                 |       |                 |    |    |    | X  |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Epilobium hirsutum</i>        | Great willowherb           |                              |       |       |                 |       | X               |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Euphorbia peplus</i>          | Petty spurge               |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Geranium pratense</i>         | Meadow crane's-bill        |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Jacobaea vulgaris</i>         | Common ragwort             | X                            |       |       |                 | X     |                 | X  | X  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Lactuca seriola</i>           | Prickly lettuce            |                              |       | X     |                 | X     |                 | X  | X  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Lamium album</i>              | White dead-nettle          |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Lemnaceae</i> sp.             | Duckweed                   |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Lotus corniculatus</i>        | Common bird's-foot-trefoil |                              | X     |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Malva</i> sp.                 | Malow                      |                              |       | X     |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Plantago lanceolata</i>       | Ribwort plantain           | X                            |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Plantago major</i>            | Greater plantain           | X                            |       |       |                 | X     |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Ranunculus repens</i>         | Creeping buttercup         | X                            |       | X     |                 |       | X               |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Rumex obtusifolius</i>        | Broad-leaved dock          | X                            | X     |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Senecio vulgaris</i>          | Groundsel                  |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Silene dioica</i>             | Red campion                |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Sonchus arvensis</i>          | Perennial sow-thistle      |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Stachys sylvatica</i>         | Hedge woundwort            |                              |       | X     |                 | X     |                 | X  | X  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Stellaria media</i>           | Common chickweed           |                              |       |       |                 | X     |                 | X  | X  | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Taraxacum officinale</i> agg. | Dandelion                  |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Tragopogon pratensis</i> agg. | Goat's-beard               |                              |       | X     |                 | X     |                 | X  | X  |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Trifolium dubium</i>          | Lesser trefoil             |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Trifolium pratense</i>        | Red clover                 | X                            |       | X     |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Trifolium repens</i>          | White clover               |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Tripleurospermum inodorum</i> | Scentless mayweed          |                              |       | X     |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Urtica dioica</i>             | Common nettle              |                              |       |       |                 |       |                 | X  |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Veronica beccabunga</i>       | Brooklime                  |                              |       |       |                 |       |                 | X  |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Veronica persica</i>          | Common field-speedwell     |                              |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Veronica serpyllifolia</i>    | Thyme-leaved Speedwell     | X                            |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| Sedges and rushes                |                            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Carex pendula</i>             | Pendulous sedge            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Juncus effusus</i>            | Soft rush                  |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Typha latifolia</i>           | Common reedmace            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| Grasses                          |                            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Agrostis</i> spp.             | Bent grass                 |                              | X     | X     |                 | X     |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Arrhenatherum elatius</i>     | False oat-grass            |                              |       |       |                 |       | X               |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Dactylis glomerata</i>        | Cock's-foot                |                              | X     |       |                 |       | X               |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Elymus caninus</i>            | Bearded Couch              |                              |       |       |                 |       | X               |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Festuca</i> sp.               | Fescue                     |                              |       | X     |                 | X     |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Holcus lanatus</i>            | Yorkshire fog              | X                            | X     |       | X               |       | X               |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Lolium perenne</i>            | Perennial rye grass        | X                            |       |       | X               |       | X               |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Phleum pratense</i>           | Timothy                    |                              |       | X     |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Poa annua</i>                 | Annual meadow-grass        | X                            |       |       |                 |       |                 |    |    | X  |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| Woody species                    |                            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| Broadleaved                      |                            |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Acer campestre</i>            | Field maple                |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    | X  | X  |     |     |     |     |     |     | X   |  |
| <i>Alnus glutinosa</i>           | Common alder               |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     | X   |     |     |     |     | X   |  |
| <i>Cornus</i> sp.                | Dogwood                    |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     | X   |  |
| <i>Corylus avellana</i>          | Hazel                      |                              |       |       |                 |       |                 |    |    |    |    | X  |    |    |    |    |    | X  |    |     |     | X   |     |     |     | X   |  |
| <i>Crataegus monogyna</i>        | Hawthorn                   |                              |       |       |                 |       |                 |    |    |    | X  | X  | X  | X  | X  |    | X  | X  | X  | X   | X   | X   | X   | X   | X   | X   |  |
| <i>Fraxinus excelsior</i>        | Ash                        |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    | X  |    |    |     |     |     | X   | X   | X   |     |  |
| <i>Hedera helix</i>              | Ivy                        |                              |       |       |                 |       |                 |    |    |    | X  |    |    |    |    |    |    |    |    |     |     |     |     |     | X   |     |  |
| <i>Ilex aquifolium</i>           | Holly                      |                              |       |       |                 |       |                 |    |    |    | X  | X  |    | X  |    |    | X  |    |    |     |     |     |     |     |     |     |  |
| <i>Prunus avium</i>              | Cherry                     |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Prunus laurocerasus</i>       | Cherry laurel              |                              |       |       |                 |       |                 |    |    |    |    |    |    |    | X  |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Prunus spinosa</i>            | Blackthorn                 |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    | X  | X  | X  | X   | X   | X   |     | X   | X   |     |  |
| <i>Prunus</i> sp.                | <i>Prunus</i> sp.          |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    | X  | X  |    |     |     |     |     |     |     |     |  |
| <i>Rosa</i> sp.                  | Rose sp.                   |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    | X  |    |     |     |     |     | X   |     |     |  |
| <i>Rubus fruticosus</i> agg.     | Bramble                    |                              |       |       |                 |       |                 |    |    |    | X  |    | X  | X  | X  |    | X  | X  |    |     |     |     | X   | X   | X   |     |  |
| <i>Salix</i> spp.                | Willow                     |                              |       |       |                 |       |                 |    |    |    |    |    | X  |    |    |    |    |    |    |     |     | X   |     |     |     |     |  |
| <i>Sambucus nigra</i>            | Elder                      |                              |       |       |                 |       |                 |    |    |    | X  | X  |    | X  |    |    | X  | X  | X  |     |     |     |     | X   |     |     |  |
| <i>Sorbus aucuparia</i>          | Rowan                      |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |  |
| <i>Ulmus procera</i>             | English elm                |                              |       |       |                 |       |                 |    |    |    |    |    |    |    |    |    |    | X  | X  |     |     |     |     |     |     |     |  |
| <i>Ulmus</i> spp.                | Elm                        |                              |       |       |                 |       | X               |    |    |    |    |    |    |    |    |    | X  |    |    |     | X   |     |     |     |     | X   |  |

| Appendix D. Habitats and Flora Species List |                              |              |                    |             |       |              |
|---------------------------------------------|------------------------------|--------------|--------------------|-------------|-------|--------------|
| Site name                                   | Earl Shilton, Leicester Road |              |                    |             |       |              |
| Survey date and surveyor                    | 22/08/2019 BGW               |              |                    |             |       |              |
| Scientific name                             | Common name                  |              |                    |             |       |              |
|                                             |                              | Wet Habitats | Woodland near Pond | Wooded Area | Scrub | Tall Ruderal |
| Herb species                                |                              |              |                    |             |       |              |
| Achillea millefolium                        | Yarrow                       |              |                    |             |       |              |
| Apium nodiflorum                            | Foof's-water-cress           | X            |                    |             |       |              |
| Chenopodium sp.                             | Goosefoot                    |              |                    |             |       |              |
| Cirsium arvense                             | Creeping thistle             |              |                    |             |       | X            |
| Convulvulus sp.                             | Bindweed                     |              |                    |             |       |              |
| Epilobium hirsutum                          | Great willowherb             | X            |                    |             |       |              |
| Euphorbia peplus                            | Petty spurge                 |              |                    |             |       |              |
| Geranium pratense                           | Meadow crane's-bill          |              |                    |             |       |              |
| Jacobaea vulgaris                           | Common ragwort               |              |                    |             |       |              |
| Lactuca seriola                             | Picky lettuce                |              |                    |             |       |              |
| Lamium album                                | White dead-nettle            |              |                    |             |       |              |
| Lemnaceae sp.                               | Duckweed                     | X            |                    |             |       |              |
| Lotus corniculatus                          | Common bird's-foot-trefoil   |              |                    |             |       |              |
| Malva sp.                                   | Malow                        |              |                    |             |       |              |
| Plantago lanceolata                         | Ribwort plantain             |              |                    |             |       |              |
| Plantago major                              | Greater plantain             |              |                    |             |       |              |
| Ranunculus repens                           | Creeping buttercup           |              |                    |             |       |              |
| Rumex obtusifolius                          | Broad-leaved dock            |              |                    |             |       |              |
| Senecio vulgaris                            | Groundsel                    |              |                    |             |       |              |
| Silene dioica                               | Red campion                  |              |                    |             |       |              |
| Sonchus arvensis                            | Perennial sow-thistle        |              |                    |             |       |              |
| Stachys sylvatica                           | Hedge woundwort              |              |                    |             |       |              |
| Stellaria media                             | Common chickweed             |              |                    |             |       |              |
| Taraxacum officinale agg.                   | Dandelion                    |              |                    |             |       |              |
| Tragopogon pratensis agg.                   | Goat's-beard                 |              |                    |             |       |              |
| Trifolium dubium                            | Lesser trefoil               |              |                    |             |       |              |
| Trifolium pratense                          | Red clover                   |              |                    |             |       |              |
| Trifolium repens                            | White clover                 |              |                    |             |       |              |
| Tripleurospermum inodorum                   | Scentless mayweed            |              |                    |             |       |              |
| Urtica dioica                               | Common nettle                |              |                    |             |       | X            |
| Veronica beccabunga                         | Brooklime                    |              |                    |             |       |              |
| Veronica persica                            | Common field-speedwell       |              |                    |             |       |              |
| Veronica serpyllifolia                      | Thyme-leaved Speedwell       |              |                    |             |       |              |
| Sedges and rushes                           |                              |              |                    |             |       |              |
| Carex pendula                               | Pendulous sedge              | X            |                    |             |       |              |
| Juncus effusus                              | Soft rush                    | X            |                    |             |       |              |
| Typha latifolia                             | Common reedmace              | X            |                    |             |       |              |
| Grasses                                     |                              |              |                    |             |       |              |
| Agrostis spp.                               | Bent grass                   |              |                    |             |       |              |
| Arrhenatherum elatius                       | False oat-grass              |              |                    |             |       |              |
| Dactylis glomerata                          | Cock's-foot                  |              |                    |             |       |              |
| Elymus caninus                              | Bearded Couch                |              |                    |             |       |              |
| Festuca sp.                                 | Fescue                       |              |                    |             |       |              |
| Holcus lanatus                              | Yorkshire fog                |              |                    |             |       |              |
| Lolium perenne                              | Perennial rye grass          |              |                    |             |       |              |
| Phleum pratense                             | Timothy                      |              |                    |             |       |              |
| Poa annua                                   | Annual meadow-grass          |              |                    |             |       |              |
| Woody species                               |                              |              |                    |             |       |              |
| Broadleaved                                 |                              |              |                    |             |       |              |
| Acer campestre                              | Field maple                  |              | X                  | X           |       |              |
| Alnus glutinosa                             | Common alder                 |              | X                  | X           |       |              |
| Cornus sp.                                  | Dogwood                      |              |                    | X           |       |              |
| Corylus avellana                            | Hazel                        |              |                    |             |       |              |
| Crataegus monogyna                          | Hawthorn                     |              |                    |             | X     | X            |
| Fraxinus excelsior                          | Ash                          |              | X                  | X           |       |              |
| Hedera helix                                | Ivy                          |              |                    |             |       |              |
| Ilex aquifolium                             | Holly                        |              |                    |             |       |              |
| Prunus avium                                | Cherry                       |              |                    | X           |       |              |
| Prunus laurocerasus                         | Cherry laurel                |              |                    |             |       |              |
| Prunus spinosa                              | Blackthorn                   |              |                    | X           |       | X            |
| Prunus sp.                                  | Prunus sp.                   |              | X                  |             |       |              |
| Rosa sp.                                    | Rose sp.                     |              |                    |             |       |              |
| Rubus fruticosus agg.                       | Bramble                      |              |                    |             | X     | X            |
| Salix spp.                                  | Willow                       |              |                    |             |       |              |
| Sambucus nigra                              | Elder                        |              |                    |             | X     | X            |
| Sorbus aucupana                             | Rowan                        |              | X                  | X           |       |              |
| Ulmus procera                               | English elm                  |              |                    |             |       |              |
| Ulmus spp.                                  | Elm                          |              |                    |             |       |              |

## **Appendix E**

### Evaluation & Assessment Methods

Ecological features are evaluated and assessed in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) 2018 Guidelines for Ecological Impact Assessment (EclA). For clarity, the evaluation and assessment process adopted within this EclA is set out below.

#### Establishing Potentially Important Ecological Features

Ecological features are assessed where they are considered to be important, and where they may be impacted by a proposed development. A feature may be considered important for a variety of reasons, such as quality, extent, rarity and/or statutory protection. Table E.1 below sets out a non-exhaustive list of ecological features that are typically considered, along with key examples:

**Table E.1.** Potentially important ecological features (adapted from CIEEM 2018)

| Potentially Important Ecological Features                                          | Typical examples                                                                                                                           |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Statutory designated sites under international conventions or European Legislation | Wetlands of International Importance (Ramsar sites), Special Areas of Conservation (SAC), Special Protection Areas (SPA)                   |
| Statutory designated sites under national legislation                              | Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR, Local Nature Reserves (LNR)                                    |
| Non-statutory, locally designated wildlife sites                                   | Local Wildlife Sites (LWS), County Wildlife Sites (CWSs), Sites of Importance for Nature Conservation (SINCs)                              |
| National biodiversity lists                                                        | Habitats or Species of Principal Importance for the Conservation of Biodiversity (Section 41, NERC Act 2006), Ancient Woodland Inventory   |
| Local biodiversity lists                                                           | Local Biodiversity Action Plan (BAP) priority species or habitats                                                                          |
| Red Listed / Rare Species                                                          | Species of conservation concern, Red Data Book (RDB) species, Birds of Conservation Concern, nationally rare and nationally scarce species |
| Legally Protected Species                                                          | E.g. species listed under Sch.5 of the W&C Act 1981, or Sch.2 of the Hag. Regs. 2017                                                       |
| Legally Controlled Species                                                         | E.g. species listed under Sch.9 of the W&C Act 1981                                                                                        |

It should also be noted that the social, community, economic or multi-functional importance attributed to ecological features are not assessed as they fall outwith the scope of this assessment.

#### Establishing Likely Zone of Influence

The 'zone of influence' for a project is the area over which ecological features may be subject to significant effects as a result of the project and associated activities. The project's zone of influence varies across different ecological features, which have different vulnerabilities and

sensitivities. For the purposes of this assessment, the following zones were considered:

- International statutory nature conservation designations up to 10km from the Site
- National and local statutory nature conservation designations up to 3km from the Site
- Non-statutory locally designated wildlife sites up to 1km from the Site

These arbitrary distances are considered sufficient for identifying the nature conservation designations which could be subject to significant effects. However, it is acknowledged that in certain circumstances effects beyond these distances are possible and should be considered as far as is reasonably practicable to do so.

For other ecological features, such as habitats and species, the appropriate zone of influence is described and justified as appropriate within the report, depending on their respective sensitivity to an environmental change.

The results of professionally accredited or published scientific studies have been used and referenced, where available, to establish the spatial and temporal limits of the biophysical changes likely to be caused by specific activities, and to justify decisions about the zone of influence.

#### Geographic Context and Significance Criteria

The importance of ecological features, as well as the significance of any likely impacts and their effects, are considered here within a defined geographic context:

- International
- National
- Regional
- County
- Local

The size, conservation status and the quality of features are all relevant in determining their importance and assigning this to the geographic scale. Where the importance of a feature is considered to fall below the Local scale, they are scoped out of detailed assessment.

Impacts and their effects are taken to be significant where they support or undermine biodiversity conservation objectives, with the scale of significance defined according to the above geographic context. Where an impact or effect is unlikely to be perceptible at a Local scale, this is taken to be not significant.

### Characterising Ecological Impacts and their Effects

Where likely significant ecological impacts and effects are identified in connection with the proposed project, these are considered and described with reference to the following characteristics (where this is helpful in accurately portraying the ecological effect and determining the scale of significance):

- Positive or negative (i.e. does the anticipated change accord with nature conservation policies and objectives?)
- Extent (i.e. the spatial area over which the impact or effect may occur)
- Magnitude (i.e. the quantified size, amount, intensity or volume)
- Duration (i.e. the timeframe over which the impact or effect may occur, in both human and ecological terms)
- Frequency and timing (i.e. the number of times an activity occurs, where this is likely to influence the effect)
- Reversibility (i.e. is spontaneous recovery possible or may the effect be counteracted by mitigation?)

## **Appendix F**

### Bat Survey Report

## **Introduction**

This appendix has been produced by CSA Environmental on behalf of Gladman Developments. It sets out the methods and results of bat activity surveys undertaken at Leicester Road, Earl Shilton (hereafter referred to as 'the Site'), where residential development is proposed.

Preliminary Roost Assessments (PRA) of trees and structures within the Site and wider survey area were carried out to determine the presence/absence of Potential Roost Features (PRF) and to categorise each tree in terms of its suitability for roosting bats to allow potential impacts to be predicted and appropriate mitigation proposed.

Bat activity surveys, consisting of walked transects and static monitoring surveys were undertaken to:

- Establish the diversity of bat activity at the Site (i.e. which bat species/genera make use of the Site).
- Establish the distribution of on-site activity, including any hotspots or key flight lines.
- Complete a qualitative assessment of bat behaviour/use of the Site (e.g. foraging, or 'commuting' to off-site habitat resources).
- Complete a quantitative assessment of the relative level of bat activity at the Site (including spatial and/or temporal variation).
- Facilitate the design of development proposals which are sensitive to the bats found to use the Site.
- Support an evidence-based assessment of the likely effects of development on bat population.

## **Legislation**

All species of British bats are legally protected under Section 43 of the Conservation of Habitats and Species Regulations 2017 (as amended). These Regulations make it an offence to:

- Deliberately capture, injure or kill a bat
- Deliberately disturb bats, impairing their ability to survive, breed, reproduce or rear/nurture their young, or significantly altering their local distribution or abundance
- Damage or destroy a breeding site or resting place (i.e. a roost) used by bats

All bats and their roosts in England and Wales were originally protected under the Wildlife & Countryside Act 1981 (as amended). While the provisions of the Act are now largely superseded by the Regulations, it remains an offence under the Act to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place that a bat uses for shelter or protection

Disturbance of bats is covered by both the 2017 Regulations and the 1981 Act. Disturbance that impairs survival or successful reproduction would be covered by the Regulations, while disturbance of individual bats within roosts is covered by the Act.

Bat roosts are protected throughout the year, regardless of whether or not bats are present at the time. Under the Regulations, the offence of damaging or destroying a breeding site or resting place of bats is subject to strict liability, i.e. an offence will have been committed even if the damage or destruction occurs accidentally.

### Licensing

Where development is proposed that would result in an offence under the Habitats and Species Regulations a European Protected Species (EPS) licence needs to be granted by Natural England to permit an act that would otherwise be unlawful. This provides for a specific derogation from the legislation, to prevent a legal infringement occurring.

To obtain an EPS licence for development purposes it must be demonstrated that the act to be licensed is necessary for *“preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment”* (Regulation 55(2)(e)).

In addition, Natural England will not grant an EPS licence unless they are satisfied that:

- “There is no satisfactory alternative” (Regulation 55(9)(a))
- “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” (Regulation 55(9)(b))

## **Methods**

### *Ground-based Tree Assessments*

Ground-based tree assessments were undertaken on 23 January 2020 by Alex Perry ACIEEM (Natural England Bat Survey Class Licence: 2017-32919-CLS-CLS) and Tom Preece ACIEEM.

All standard mature trees on-site were assessed, including those located along site boundaries and at junction points between fields where

access issues may result in the need to impact/remove trees. Each tree was inspected from ground level, using binoculars and a powerful torch as appropriate to search for features that bats might use for roosting (e.g. woodpecker holes, limb splits, lifting bark and mature ivy stems) and any associated bat roosting evidence (e.g. bat droppings and staining around roosting features). The potential for each tree to support bats was assessed using a categorisation system based on the protocol detailed within the Bat Survey Guidelines. These guidelines have been reproduced in Table F.1 below.

**Table F.1.** Guidelines for assessing the potential suitability of roosting habitats<sup>8</sup>

| <b>Suitability</b> | <b>Description of Roosting Habitats</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Negligible         | Negligible habitat features on site likely to be used by roosting bats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Low                | <p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain Potential Roosting Features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.</p> |
| Moderate           | A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.                                                                                                                                                                                                                                                                                                                                                      |
| High               | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.                                                                                                                                                                                                                                                                                                            |

### *Preliminary Roost Assessment*

All structures within and adjacent to the Site boundary were subject to a Preliminary Roost Assessment (PRA) on 23 January 2020 by Alex Perry ACIEEM (Natural England Bat Survey Class Licence: 2017-32919-CLS-CLS) and Tom Preece ACIEEM. The assessment included a detailed internal and external inspection of the structures using a ladder, high powered torch and close-focusing binoculars, as appropriate, to look for signs of, and suitable features for, roosting bats.

External inspections focused on identifying potential bat access points to the interior of the structure and any external features that could potentially be used as roost sites by crevice-dwelling species. The internal inspections involved a systematic search for bats and any evidence of their activity, in particular droppings and/or feeding remains.

A structure's bat roost potential is influenced by factors including its age and construction, thermal stability, lighting, levels of human activity and proximity to foraging habitat. The PRA is a means to identify the roost potential of a structure, such that consideration may be given to whether further surveys are necessary to confirm the presence or likely absence of roosting bats, and to characterise any roosts present. This approach is consistent with the prevailing best practice guidelines<sup>1</sup>.

Bat activity transect and static monitoring surveys have been undertaken at the Site in September 2019. Further transect surveys and static monitoring periods will be undertaken in May and July 2019, and this report will be updated in due course following the completion of these surveys. The field work design, data analysis and interpretation are undertaken with due consideration for the Bat Conservation Trust (BCT) guidelines 3rd Edition<sup>2</sup>.

### Transect Surveys

Transect surveys were undertaken at the Site in September 2019, May 2020 and July 2020. One transect route was walked on each occasion, with the intention of covering all accessible areas, features and habitats at the Site. The transect route was repeated several times during each survey to minimise temporal bias.

Each transect was walked at a moderate and consistent speed with qualitative observations of bat behaviour made by the surveyor. Each transect commenced at sunset (British Summer Time), continuing for the following two hours.

Bat calls were recorded using Elekon Batlogger M detectors. This detector automatically records ultrasonic signals with a one second delay between recordings. Recordings of bat contacts were subsequently analysed using BatExplorer software, with sonograms reviewed to confirm bat identification to genera, or where possible, species level.

Each of the recorded files, which contain a variable number of call 'pulses', was designated a 'bat contact'. At the point of contact, each sound file is assigned a GPS location.

### Static Monitoring

Three Wildlife Acoustics Songmeter (SM2/SM2+/SM4) static detectors were deployed during September 2019, May 2020 and July 2020 to

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<sup>1</sup> Collins, J. (ed.), 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn.). The Bat Conservation Trust, London.

<sup>2</sup> Collins, J., ed., 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd ed. London: The Bat Conservation Trust.

provide three data-sets. The locations of each Monitoring Point (MP) are shown in Figure F.1 below.



**Figure F.1.** Locations of each Monitoring Point (MP) surveyed in September 2019, May 2020 and July 2020

The detectors were setup to automatically record ultrasonic signals for the period from half an hour before sunset to half an hour after sunrise each night, with each monitoring period spanning at least five consecutive nights.

Weather conditions were obtained for each monitoring period using historic weather data from the World Weather Online website, with weather observations taken from the nearest weather station in Coventry. The five nights showing the most optimal weather conditions (in terms of temperature, precipitation and wind speed) were taken forward for analysis.

Recordings were subsequently analysed using the specialist software AnaloekW/KPro/BatExplorer. Sonograms were reviewed to confirm bat identification to genera, or where possible, species level.

Each of the recorded files, which contain a variable number of call 'pulses', was designated a 'bat contact'. Quantitative analysis of bat

activity was then undertaken by calculating average bat contacts per hour for each detector, on each night monitored. Bat activity can show considerable inter-night variability and is dependent on a number of variables, including temperature, wind, and seasonality, amongst others. The median values of the average hourly bat contacts for each night monitored are provided, rather than a mean value, to allow the distribution and variance of these nightly activity levels to be understood.

### Limitations

Batlogger M detectors automatically assign a GPS location to each bat contact, allowing distribution maps to be plotted (see Results section of this report). The accuracy of the GPS locations provided for each contact is variable according to signal strength and environmental conditions. This should be taken into account when viewing the distribution maps within this report.

It is acknowledged that the quantum of bat contacts recorded during a survey does not, in and of itself, give a true reflection of the abundance of bats using the Site. For example, a single bat foraging close to static detector may trigger several hundred activations in the course of one night.

It should be noted that comparisons drawn on the number of detector activations by different species/genera can only give an indication of relative species abundance at the Site, as detectability varies between species.

There was light rain during the September 2019 and beginning of the July 2020 transect survey, which reduces the suitability of weather conditions for bats. However, this is not thought to have significantly affected the survey results or numbers/species of bats recorded.

## **Results**

### Preliminary Roost Assessments

One structure is present within the Site boundary; an open sided horse shelter. A large outbuilding was located within the Site at the time of the survey but has since been removed due to a change in site boundary. Structure locations are provided on the Roost Assessment Plan (CSA/4519/110). A description of each building is shown in Table F.2.

Structure S1 comprises an open sided horse shelter. The building is constructed of single skin wooden panels with an unlined, corrugated metal pitched roof. The shelter is open sided on the eastern elevation, causing high light levels and exposure within the barn. No bats or

evidence of bats were recorded on internal or external parts of the building. The shelter was found to have 'Negligible' potential for roosting bats.

Structure S2 is an off-site large outbuilding with a single pitch corrugated metal roof. The building has a steel frame with a mix of wooden and pebble dash walls. Gaps are present between the wooden boarding, pebble dashing and the roof, allowing small access points into the building. Inside, the building is regularly used, well-lit by artificial lighting and filled with wood and tools. A panelled ceiling within the outbuilding creates a small roof void. A stepladder was used to inspect the roof void and it was found to be draughty, cobwebbed and contain some areas of light ingress. The interior of the roof is constructed of a metal frame with a corrugated metal roof, offering limited potential for bats. No bats or evidence of bats was found during the inspection. The building was assessed as having 'Low' potential to support bats on balance of the small areas of opportunities between the wooden boarding and the rest of the building.

**Table F.2.** Summary of Preliminary Roost Assessment results at the Site

| <b>Structure Reference and Type</b> | <b>Description</b>                                                                                                                                                                                                                                                   | <b>Approximate dimension (LXWXH)</b> | <b>Bat Roost Potential</b> |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------|
| S1 – Open sided horse shelter       | Open sided horse shelter with single skin wooden boards forming the walls. Roof is comprised of pitched corrugated metal. No evidence found.                                                                                                                         | 5mx3mx3m                             | Negligible                 |
| S2 – Wooden shed (off-site)         | Large outbuilding constructed of wood, pebble dashing with a steel frame. The roof is comprised of corrugated metal and a panelled ceiling creates a small roof void. The void was draughty, lit from external light ingress and cobwebbed/dusty. No evidence found. | 11mx5mx5m                            | Low                        |

### Ground-based Tree Assessments

Assessments of all trees within the Site found one to be assessed as having 'Moderate' potential to support bats; Tree T4, a mature ash tree located along the northern boundary of Field F1. This tree had a woodpecker hole on the main stem and a split/rotten branch.

Three trees were categorised as having 'Low' bat potential, generally due to the presence of dense ivy and/or foliage cover that may obscure potential roosting features, if present. However, Tree T5, located along the western boundary contained a rot hollow at 7m. These trees could therefore not be ruled out as having bat potential, however they are considered unlikely to offer greater than Low roosting potential.

Locations of these trees are shown on the Roost Assessments Plan (CSA/4519/110).

In the context of the development, most 'Moderate' trees are located outside of the Site boundary. Tree T4 is the only tree possessing higher than 'Low' potential within the Site. If this tree is likely to be impacted, further survey work will need to be undertaken to determine whether roosting bats are present. Trees T5, T6 and T7 possess 'Low' bat roosting potential. If these trees are likely to be impacted, further inspection of features should be undertaken to look for presence of roosting bats.

### Transect Surveys

The dates and weather conditions for each transect survey are provided in Table F.3 below.

**Table F.3.** Bat transect survey weather conditions

| Survey Date | Sunset / Start Time | End Time | Temperature (°C) |     | Precip.                         | Cloud Cover (Oktas) |     | Wind (Beaufort Scale) |     |
|-------------|---------------------|----------|------------------|-----|---------------------------------|---------------------|-----|-----------------------|-----|
|             |                     |          | Start            | End |                                 | Start               | End | Start                 | End |
| 23/09/2019  | 19:02               | 21:02    | 12               | 12  | Light intermittent rain         | 8                   | 7   | 0                     | 1   |
| 20/05/2020  | 21:03               | 23:03    | 19               | 19  | Dry                             | 0                   | 0   | 1                     | 2   |
| 09/07/2020  | 21:27               | 23:27    | 13               | 12  | Light rain for first 15 minutes | 8                   | 8   | 1                     | 1   |

Two species of bat, common pipistrelle *Pipistrellus pipistrellus* and noctule *Nyctalus noctula* were recorded at the Site during the transect surveys. The number of bat contacts recorded for each species/genus are summarised in Table F.4 below. The locations of each bat contact and the overall distribution of activity across the Site are illustrated in Figures F.2 and F.3.

**Table F.4.** Summary of bat contacts recorded during the transect surveys

| Month     | Common pipistrelle | Noctule |
|-----------|--------------------|---------|
| September | 12                 | 0       |
| May       | 15                 | 0       |
| July      | 34                 | 1       |



**Figure 2.** Location of bat contacts recorded combined across all transect surveys



**Figure F.3.** Indicative 'Utilisation Distribution' (UD) plot of all bat species/genera recordings at the Site estimated from all transect data combined. The UD illustrates the relative probability of a bat in flight being present at a given point at the Site, with higher/central contours having a greater probability, and lower/peripheral contours having less probability.

Figures F.2 and F.3 demonstrate that activity encountered on the transect surveys was generally low and dominated by common pipistrelle bats, with one noctule call recorded along the western boundary. Bat activity was restricted to two areas, the internal boundary spanning north to south and land within the westernmost field.

#### Static Monitoring

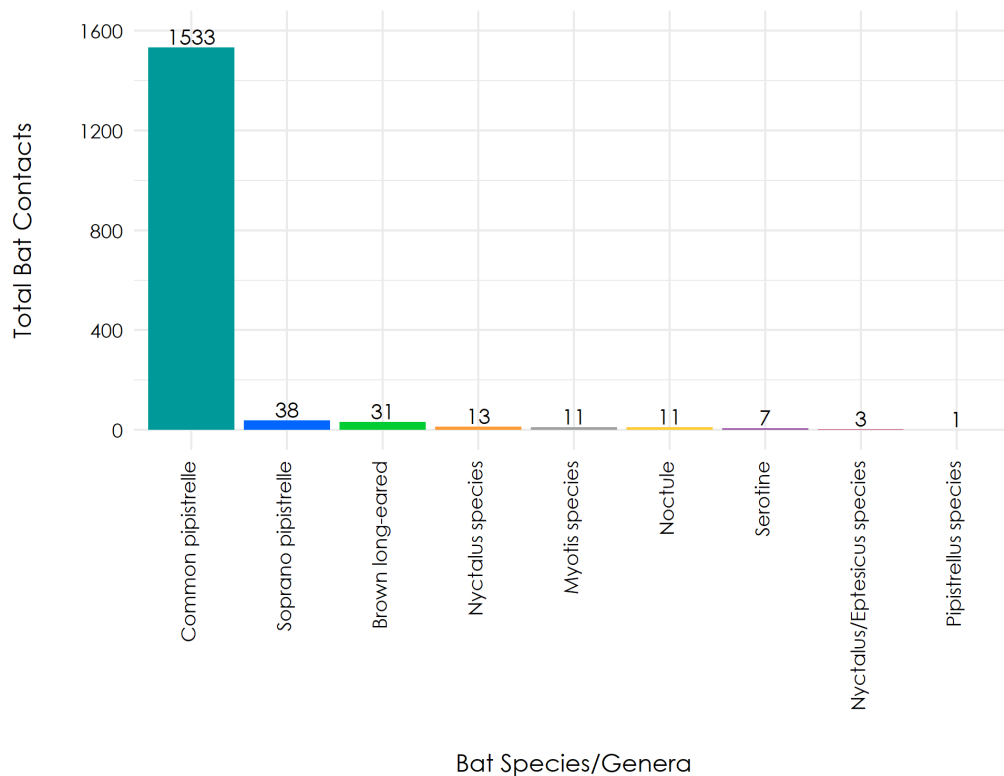
The overnight weather conditions experienced during each of the five-night static monitoring periods are provided in Table F.5 below.

**Table F.5.** Overnight weather conditions during all static monitoring periods

| Survey Month | Dates Sampled | Temperature (°C) |     | Precipitation                                               | Cloud Cover (%) |     | Wind (km/hr) |     |
|--------------|---------------|------------------|-----|-------------------------------------------------------------|-----------------|-----|--------------|-----|
|              |               | Min              | Max |                                                             | Min             | Max | Min          | Max |
| September    | 23/09/19      | 12               | 16  | Very light rain from 21:00 to 03:00 and light rain at 06:00 | 76              | 100 | 15           | 28  |

|      |            |    |    |                                                                           |     |     |    |    |
|------|------------|----|----|---------------------------------------------------------------------------|-----|-----|----|----|
|      | 24/09/19   | 13 | 14 | Very light rain from 21:00 to 03:00 and dry at 06:00                      | 61  | 100 | 10 | 20 |
|      | 25/09/19   | 14 | 16 | Dry from 21:00 to 00:00, moderate rain at 03:00, light rain at 06:00      | 34  | 100 | 12 | 21 |
|      | 26/09/19   | 12 | 13 | Dry at 21:00, very light rain at 00:00 and light rain from 03:00 to 06:00 | 44  | 79  | 22 | 24 |
|      | 27/09/19   | 10 | 13 | Dry                                                                       | 11  | 97  | 16 | 26 |
| May  | 15/05/20   | 5  | 11 | Dry                                                                       | 7   | 50  | 5  | 8  |
|      | 16/05/20   | 6  | 14 | Dry                                                                       | 19  | 46  | 7  | 10 |
|      | 17/05/20   | 8  | 15 | Dry                                                                       | 3   | 45  | 10 | 19 |
|      | 18/05/20   | 11 | 16 | Dry                                                                       | 31  | 97  | 14 | 15 |
|      | 19/05/20   | 12 | 19 | Dry                                                                       | 6   | 23  | 3  | 15 |
|      |            |    |    |                                                                           |     |     |    |    |
| July | 03/07/2018 | 8  | 15 | Light rain from 21:00 to 03:00                                            | 100 | 100 | 23 | 26 |
|      | 04/07/2019 | 17 | 18 | Light rain at 03:00                                                       | 81  | 75  | 37 | 21 |
|      | 05/07/2019 | 11 | 10 | Light rain at 21:00                                                       | 44  | 81  | 20 | 26 |
|      | 06/07/2020 | 10 | 11 | Dry                                                                       | 14  | 97  | 8  | 24 |
|      | 07/07/2020 | 4  | 14 | Light rain at 21:00, 03:00-06:00, heavy rain at 00:00                     | 100 | 100 | 10 | 21 |

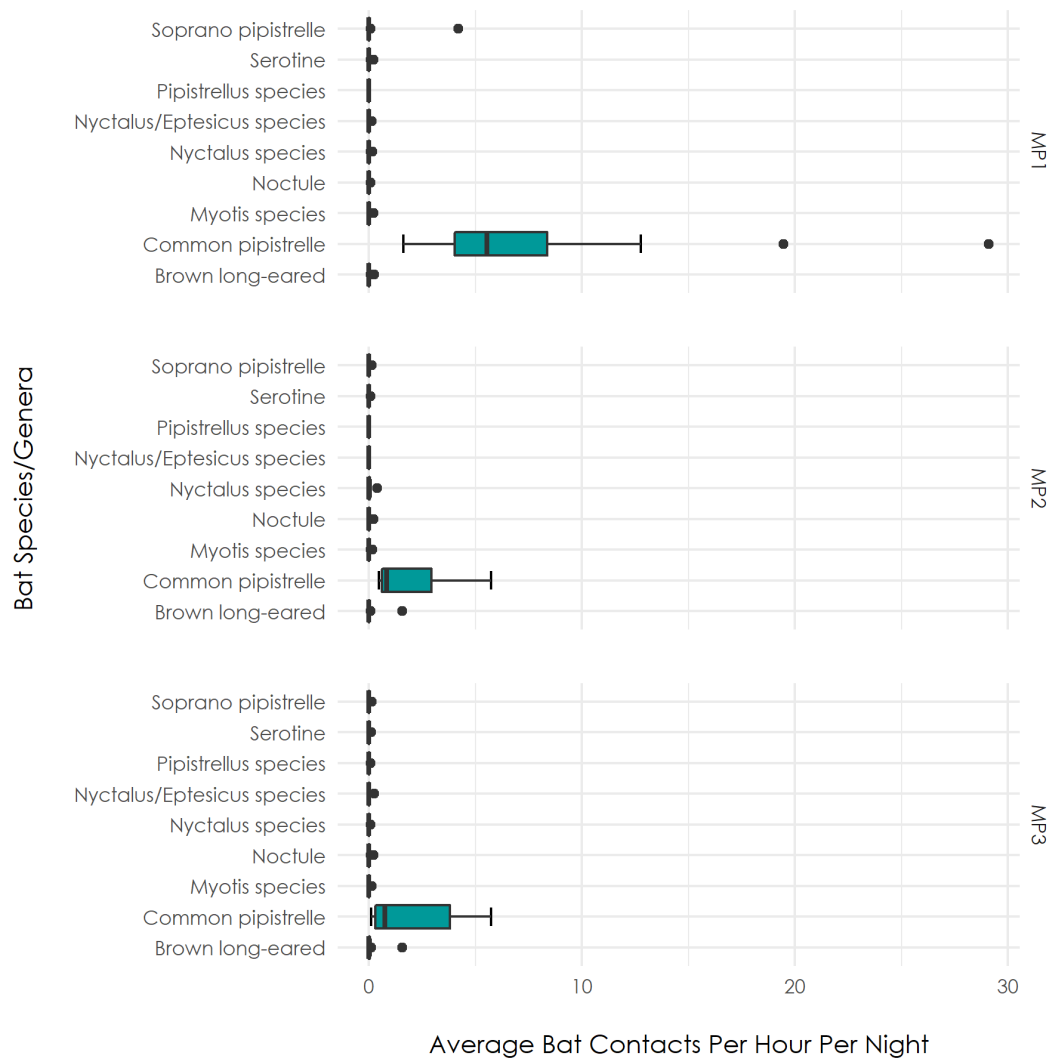
The total number of bat contacts recorded across all static monitoring locations for each bat species are provided in Figure F.4.



**Figure F.4.** Total bat contacts by species recorded during all static monitoring periods

In line with the transect surveys and by a considerable margin, the greatest abundance of bat activity was recorded at Monitoring Point MP1, located along the northern boundary of the westernmost field. This monitoring point recorded 1120 contacts and accounted for over 68% of the bat activity across all the static monitoring periods and locations. Monitoring Point MP2 and MP3 recorded 279 and 246 contacts respectively, indicating a much lower level of activity in these areas.

A total of 1065 passes of common pipistrelle were recorded at MP1, the highest number of bat contacts of any species or Monitoring Point. This high number of contacts contributes to the overall abundance of activity at MP1. Soprano pipistrelle contacts totalled 36 contacts at MP2 and MP3, whilst all other species were recorded at much lower levels, with 14 or less contacts recorded for each. Figure F.5 and Table F.6 show the bat passes per hour recorded at each monitoring point surveyed.

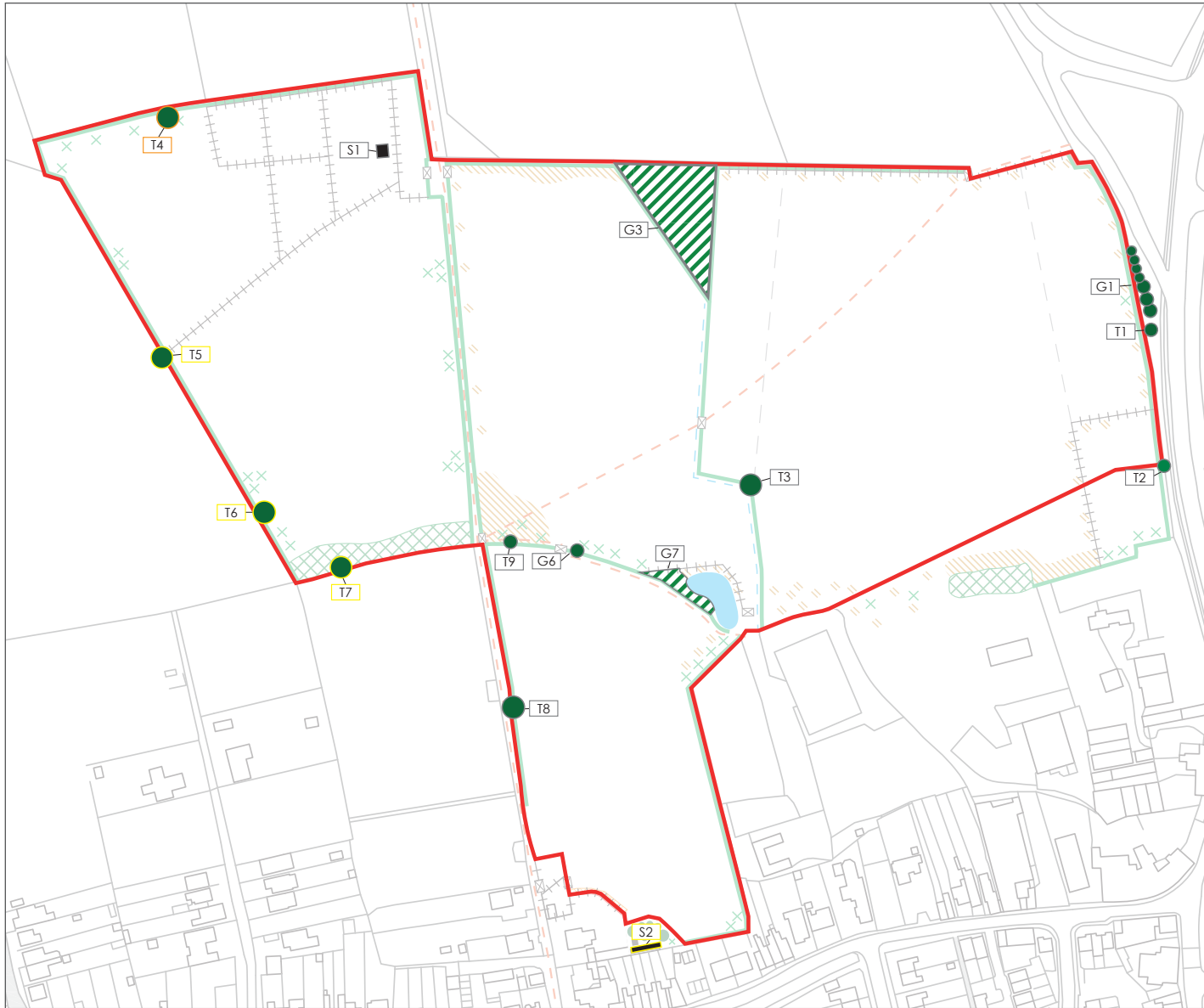


**Figure F.5.** Average bat contacts per hour per night for each bat species recorded at each static monitoring point surveyed.

**Table F.6.** Average bat contacts per hour per night for each bat species recorded at each static monitoring point surveyed.

| MP  | Species                    | Average Bat Contacts Per Hour Per Night |         |        |                     | Total Contacts | Number of Nights Surveyed |
|-----|----------------------------|-----------------------------------------|---------|--------|---------------------|----------------|---------------------------|
|     |                            | Minimum                                 | Maximum | Median | Interquartile Range |                |                           |
| MP1 | Brown long-eared           | 0.000                                   | 0.240   | 0.000  | 0.000               | 4              | MP1                       |
| MP1 | Common pipistrelle         | 1.624                                   | 29.102  | 5.530  | 4.331               | 1065           | MP1                       |
| MP1 | Myotis species             | 0.000                                   | 0.230   | 0.000  | 0.000               | 6              | MP1                       |
| MP1 | Noctule                    | 0.000                                   | 0.077   | 0.000  | 0.000               | 1              | MP1                       |
| MP1 | Nyctalus species           | 0.000                                   | 0.153   | 0.000  | 0.000               | 3              | MP1                       |
| MP1 | Nyctalus/Eptesicus species | 0.000                                   | 0.141   | 0.000  | 0.000               | 1              | MP1                       |
| MP1 | Pipistrellus species       | 0.000                                   | 0.000   | 0.000  | 0.000               | 0              | MP1                       |
| MP1 | Serotine                   | 0.000                                   | 0.228   | 0.000  | 0.000               | 4              | MP1                       |
| MP1 | Soprano pipistrelle        | 0.000                                   | 4.207   | 0.000  | 0.000               | 36             | MP1                       |
| MP2 | Brown long-eared           | 0.000                                   | 1.576   | 0.000  | 0.000               | 13             | MP2                       |
| MP2 | Common pipistrelle         | 0.477                                   | 5.731   | 0.836  | 2.323               | 246            | MP2                       |
| MP2 | Myotis species             | 0.000                                   | 0.152   | 0.000  | 0.000               | 4              | MP2                       |

|     |                            |       |       |       |       |     |     |
|-----|----------------------------|-------|-------|-------|-------|-----|-----|
| MP2 | Noctule                    | 0.000 | 0.230 | 0.000 | 0.000 | 5   | MP2 |
| MP2 | Nyctalus species           | 0.000 | 0.383 | 0.000 | 0.038 | 8   | MP2 |
| MP2 | Nyctalus/Eptesicus species | 0.000 | 0.000 | 0.000 | 0.000 | 0   | MP2 |
| MP2 | Pipistrellus species       | 0.000 | 0.000 | 0.000 | 0.000 | 0   | MP2 |
| MP2 | Serotine                   | 0.000 | 0.077 | 0.000 | 0.000 | 2   | MP2 |
| MP2 | Soprano pipistrelle        | 0.000 | 0.141 | 0.000 | 0.000 | 1   | MP2 |
| MP3 | Brown long-eared           | 0.000 | 1.576 | 0.000 | 0.038 | 14  | MP3 |
| MP3 | Common pipistrelle         | 0.120 | 5.731 | 0.766 | 3.513 | 222 | MP3 |
| MP3 | Myotis species             | 0.000 | 0.140 | 0.000 | 0.000 | 1   | MP3 |
| MP3 | Noctule                    | 0.000 | 0.230 | 0.000 | 0.000 | 5   | MP3 |
| MP3 | Nyctalus species           | 0.000 | 0.077 | 0.000 | 0.000 | 2   | MP3 |
| MP3 | Nyctalus/Eptesicus species | 0.000 | 0.241 | 0.000 | 0.000 | 2   | MP3 |



- Site boundary
- Tree with moderate bat potential
- Tree with low bat potential
- Tree with negligible bat potential
- Tn Tree reference number (moderate potential)
- Tn Tree reference number (low potential)
- Tn Tree reference number (negligible potential)
- Sn Structure reference number (low potential)
- Sn Structure reference number (negligible potential)

0 50 100metres



Suite 1, Deer Park Business Centre,  
Eckington, Pershore WR10 3DN  
t 01386 751100  
e pershore@csaenvironmental.co.uk  
w csaenvironmental.co.uk

Project Leicester Road, Earl Shilton  
Drawing Title Preliminary Roost Assessments Plan  
Client Gladman Developments Ltd

|       |                |             |              |
|-------|----------------|-------------|--------------|
| Date  | February 2020  | Drawing No. | CSA/4519/110 |
| Scale | Refer to scale | Rev         | A            |
| Drawn | TH             | Checked     | AP           |

## **Appendix G**

### Badger Survey Report

## Legislation

Badgers and their setts receive legal protection under the Protection of Badgers Act 1992. Their legal protection is intended to prevent cruelty rather than as a reflection of any conservation concern.

## Methods

A badger walkover was undertaken on 23 January 2020 by Alex Perry ACIEEM and Tom Preece ACIEEM to provide updated survey information to inform the development proposals. The survey involved methodically searching the entire Site and wider survey area and mapping any field signs of badger such as:

- Badger setts
- Feeding evidence such as digging and snuffle holes
- Badger guard hairs caught on coarse vegetation and fences
- Latrines, often positioned along territorial boundaries
- Foraging tracks/push throughs under fences and other obstacles

Where setts are identified, the number and usage levels of holes and the type of sett they comprise are recorded and categorised according to the criteria listed in Table G.1 below. These criteria are reproduced from Harris *et al* 1989 and Cresswell *et al* 1990.

**Table G.1.** Badger sett and hole definitions

| <b>Badger Sett Type</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Main setts              | These usually have a large number of holes with large spoil heaps, and the sett generally looks well used. There will be well-used paths to and from the sett and between sett entrances. Although normally the breeding sett is in continuous use, it is possible to find a main sett that has become disused due to excessive digging or some other reason; it should be recorded as a disused main sett.                                                                                                                    |
| Annexe setts            | They are often close to a main sett, usually less than 150 metres away, and are usually connected to the main sett by one or more obvious well-worn paths. They usually have several holes, but may not be in use all the time even if the main sett is very active.                                                                                                                                                                                                                                                           |
| Subsidiary setts        | These often only have a few holes; four (including all categories of use) was the average number in the first survey. They are usually at least 50 metres from a main sett, and do not have an obvious path connecting with another sett. They are not continuously active.                                                                                                                                                                                                                                                    |
| Outlying setts          | These usually have only one or two holes, often have little spoil outside the hole, have no obvious path connecting with another sett, and are only used sporadically. When not in use by badgers, they are often taken over by foxes or even rabbits. However, they can still be recognised as badger setts by the shape of the tunnel (not the actual entrance hole), which is usually at least 250mm in diameter, and is rounded or a flattened oval shape. Fox and rabbit tunnels are smaller and often taller than broad. |
| <b>Badger Hole Type</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Well used holes         | These are clear of any debris or vegetation, are obviously in regular use, and may or may not have been excavated recently.                                                                                                                                                                                                                                                                                                                                                                                                    |
| Partially used holes    | These are not in regular use and have debris such as leaves and twigs in the entrance, or have moss and/or other plants growing in or                                                                                                                                                                                                                                                                                                                                                                                          |

|               |                                                                                                                                                                                                                                                                                                                                                          |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|               | around the entrance. Partially used holes could be in regular use after a minimal amount of clearance.                                                                                                                                                                                                                                                   |
| Disused holes | These have not been in use for some time, are partially or completely blocked, and could not be used without a considerable amount of clearance. If the hole has been disused for some time, all that may be visible is a depression in the ground where the hole used to be, and the remains of the spoil heap, which may be covered in moss or plants. |

## Results

No holes or setts were recorded on-site during the survey. A single badger latrine was recorded along the southern boundary of Field F2 within dense scrub. Suspected badger footprints were recorded south of Field F3 leading into off-site dense scrub. It is likely that badgers are using the south of the Site for foraging and dispersal.

## **Appendix H**

### Breeding Bird Survey Report

## Legislation

All wild birds, their nests and eggs are protected under subsection 1(1) of the Wildlife and Countryside Act 1981. It is an offence to kill or injure any wild bird, to take or destroy their eggs, or to take, damage or destroy their nests while in use or being built.

In addition, certain species of wild bird, listed within Schedule 1 of the Wildlife and Countryside Act, receive additional protection under subsection 1(5) of the Act. This makes it an offence to disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young. It is also an offence to disturb the dependent young of such a bird.

Consideration is also taken of Birds of Conservation Concern ('BoCC'). These are species which are declining or appear to be in need of concentrated conservation actions (Eaton *et al*, 2015). Certain criteria are used to place birds on a Red-list, Amber-list or Green-list and these are outlined in Table H.1 below. In addition, the most recent report of UK bird populations (The State of the UK's Birds, Burns *et al*, 2020) was reviewed for updated information on the conservation status of bird species. Those species which were green-listed within Eaton *et al* (2015) but have been recorded to have greater than 25% decline in population size in England within the recent 2020 publication (either long-term or ten year trend) have also been considered to be of conservation significance within this report.

**Table H.1.** Criteria for red, amber and green listed birds

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Red listed</b>   | <ul style="list-style-type: none"><li>• those that are globally threatened according to The World Conservation Union(IUCN) criteria;</li><li>• historical decline in breeding population and not shown substantial recent recovery those that have shown a severe breeding decline over 25 years/longer term;</li><li>• those that have shown a severe breeding range decline over 25 years/longer term;</li><li>• species whose non-breeding population has declined over 25 years/longer term.</li></ul>                                                                                                  |
| <b>Amber listed</b> | <ul style="list-style-type: none"><li>• species of European Conservation Concern;</li><li>• those whose population has declined historically but made a substantial recent recovery;</li><li>• those whose breeding population has declined moderately over 25 years /longer term;</li><li>• those that have shown a moderate breeding range decline over 25 years/longer term;</li><li>• those whose non-breeding population has declined moderately over 25 years/longer term;</li><li>• rare breeders; or non-breeding rarity species with internationally important or localised populations.</li></ul> |
| <b>Green listed</b> | <ul style="list-style-type: none"><li>• species that fulfil none of the criteria above.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Methods

Breeding bird surveys were carried out by Kate Kibble MCIEEM over four visits between April and June 2020 to gain an understanding of the breeding bird assemblage at the site. Surveys were conducted with the following aims:

- To determine the potential for breeding species of birds across the survey area;
- To review the rarity status and conservation of each species found, including levels of national protection, National and Local BAP and Birds of Conservation Concern (BoCC);
- To review the likely breeding potential within the habitats present;
- To assess the impacts of the proposed developments with regards to the species/ likely species determined; and
- To recommend appropriate mitigation and protection measures where necessary.

The survey methodology uses an adapted Common Birds Census (CBC) method which utilises registration mapping based on bird breeding behaviour, which allows the number and distribution of territories to be determined for each species. The survey area included all accessible areas of the Site and immediately adjacent land.

On each survey the surveyor walked a slow route across the whole site which ensured that both species of open and boundary habitats would be detected. Alternative versions of the route were taken on each visit so that different parts of the site would be surveyed at different parts of the morning, thus avoiding temporal bias associated with bird activity. Each survey commenced shortly after dawn, when birds are most active, and continued for approximately two hours during suitable weather conditions. Birds were detected by sound or sight, using a pair of 10 x 42 binoculars.

All birds detected at the Site were recorded using standardised codes to map their distribution and behaviour, and to differentiate between individuals for the purposes of territory mapping.

On each survey visit the following objectives were met:

- Identification of likely breeding species within the habitats present;
- Identification of all birds seen and heard;
- Breeding status of each bird seen and heard;
- Total numbers of birds, including juveniles recorded.

The criteria used during the 'Bird Atlas' surveys of 2007-2011 were used to ascertain the breeding status of birds at the Site (as given in Table H.2 below).

**Table H.2.** Categories of breeding bird evidence

| <b>Breeding Status Categories</b> | <b>Evidence criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Confirmed breeding:               | <ul style="list-style-type: none"><li>• Distraction display or injury feigning;</li><li>• Used nests or eggshells found (occupied or laid within the survey period);</li><li>• Recently fledged young or downy young;</li><li>• Adults entering or leaving a nest site in circumstances indicating occupied</li><li>• Nest or an adult sitting on nest;</li><li>• Adults carrying food for young or faecal sacs;</li><li>• Nest containing eggs;</li><li>• Nest with young seen or heard.</li></ul> |
| Probable breeding:                | <ul style="list-style-type: none"><li>• Pairs observed in suitable nesting habitat in breeding season;</li><li>• Permanent territory presumed through registration or territorial behaviour (song etc.) on at least two different days, a week apart, at the same place;</li><li>• Display and courtship;</li><li>• Visiting probable nest site;</li><li>• Agitated behaviour or anxiety calls from adults;</li><li>• Building nest or excavating nest hole.</li></ul>                              |
| Possible breeding:                | <ul style="list-style-type: none"><li>• Species observed in breeding season in possible nesting habitat.</li><li>• Singing male(s) present or breeding calls heard in breeding season</li></ul>                                                                                                                                                                                                                                                                                                     |

### Evaluation

The importance of the breeding bird assemblage at the Site was assessed using the criteria suggested by Fuller (1980) (see Table H.3 below).

**Table H.3.** Assessment criteria for breeding bird assemblage at a Site

| <b>Importance</b> | <b>Number of breeding species</b> |
|-------------------|-----------------------------------|
| Local             | 25-49                             |
| County            | 50-69                             |
| Regional          | 70-84                             |
| National          | 85+                               |

### Limitations

Only a proportion of individuals of each species will be detected on each visit, and some particularly secretive or low-density species, can be elusive and require several visits to detect. Furthermore, the importance of a site for birds can change depending on factors such as food availability, presence of roosting/nesting features and weather conditions.

## **Results**

The weather conditions during the breeding bird surveys are summarised in Table H.4 below.

**Table H.4.** Weather conditions for breeding bird surveys

| Date     | Start time | End time | Cloud (Oktas) | Rain (mm) | Wind (Beaufort scale) |
|----------|------------|----------|---------------|-----------|-----------------------|
| 16/04/20 | 07:15      | 08:45    | 0-1           | Dry       | 1-1                   |
| 15/05/20 | 06:45      | 08:15    | 0-3           | Dry       | 3-2                   |
| 27/05/20 | 06:15      | 09:00    | 0-1           | Dry       | 1-2                   |
| 25/06/20 | 06:45      | 08:45    | 0-0           | Dry       | 2-2                   |

A total of 35 bird species were recorded during the survey, with 22-24 species recorded during each visit. A full results table summarising activity of all birds recorded on-site is given at the end of this report.

Nine species were confirmed to be breeding on-site, with seven probable breeders and nine possible breeders. In addition, starling *Sturnus vulgaris* and collared dove *Streptopelia decaocto* were considered to be breeding within offsite adjacent habitats. The remaining eight species were recorded either flying over the Site only, or no suitable breeding habitat is present on the Site, so are classed as non-breeding.

Four species on the red-list of conservation concern (BoCC, 2015) were recorded on-site as well as six species on the Amber list. Greenfinch *Chloris chloris* and moorhen *Gallinula chloropus* are on the Green list within BoCC but The State of UK's Birds 2020 reports a significant population decline (>25% decline either long-term 1970-2018 and/or 10 year 2008-2018 trend) so these species are also considered to be of conservation significance herein. A summary of notable birds recorded on-site is given below. A single snipe *Gallinago gallinago* was flushed from the on-site pond during a separate visit to the Site, but this is included within the results as it is a notable species (although regular use of the Site e.g. breeding is considered unlikely):

- Bullfinch
- Dunnock
- Greenfinch
- House sparrow
- Lesser black-backed gull
- Linnet
- Song thrush
- Starling
- Swift
- Snipe
- Mallard
- Moorhen

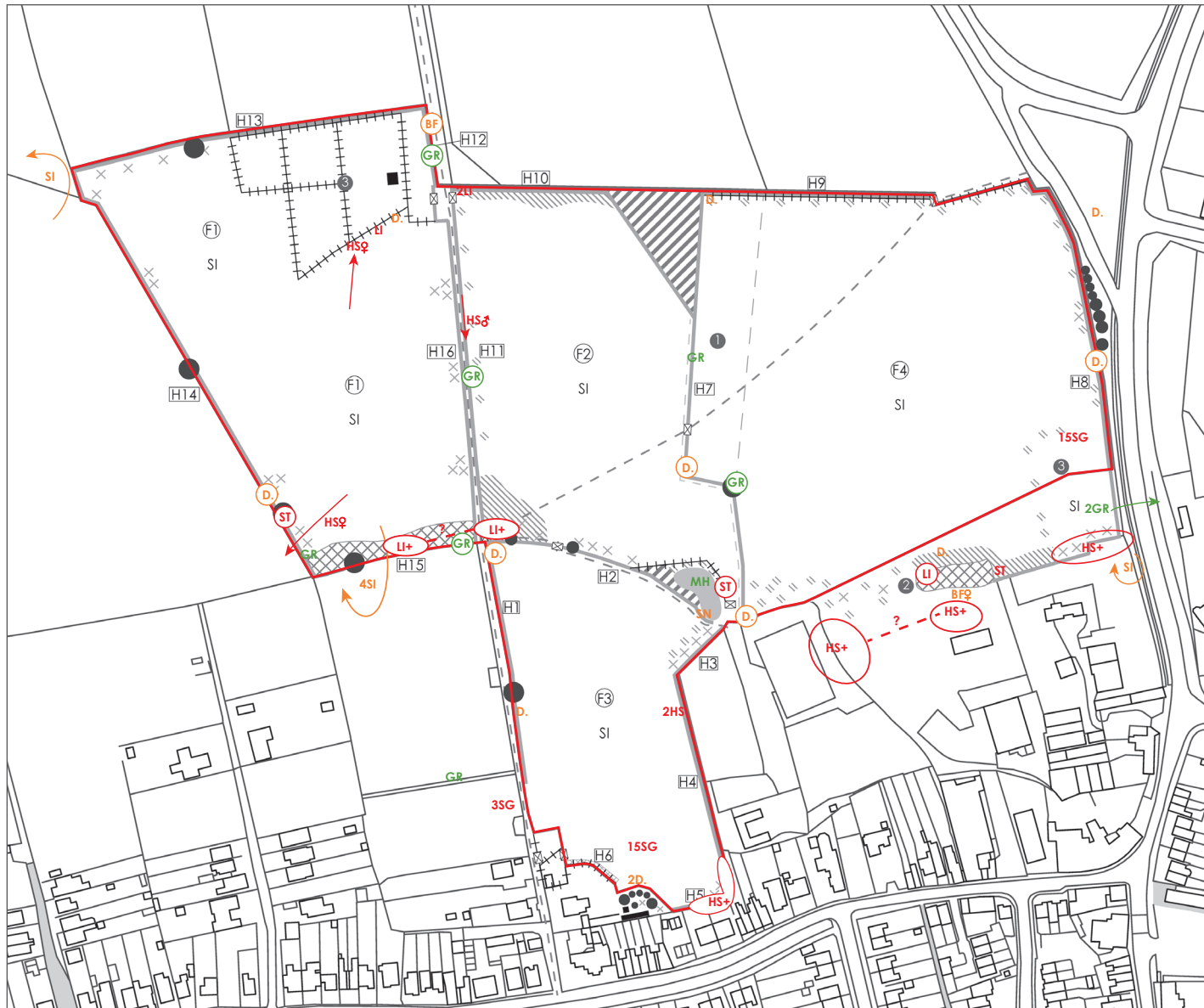
The habitats are dominated by open grassland with mature hedgerows and scattered trees at the boundaries. Almost all bird activity was concentrated within the boundary vegetation and the species assemblage is well represented by finch, warbler and other scrub-associated species as a result. The open grassland was seen to be predominantly used by blackbird *Turdus merula* with additional use by

corvids, swallow *Hirundo rustica* and swift *Apus apus*. Groups of c. 15 starling were seen foraging within the grassland once the juveniles had fledged (likely from nests within surrounding houses). The pond was seen to support two wetland-specialist species, snipe and moorhen.

Areas of dense bramble scrub were noted to have greatest bird abundance and diversity, notably along the southern boundary of Field F1 and within rough/waste ground south of Field F4.

Several colonies of linnet and house sparrow were recorded, as mapped on the accompanying survey plan. It is most likely that the sparrows nest in surrounding buildings and congregate within the boundary hedgerows, although nesting is possible within the hedgerows themselves. These species are highly active and the extent of possible colonies is estimated from repeated observations at the Site; it is not clear how many birds are present. Likewise, dunnoek *Prunella modularis* have a complicated breeding strategy often involving nesting groups of several birds. They are also fairly secretive in nature. The territories shown on the following plan are devised from repeated registrations of singing males or sightings within a particular location.

The 25 breeding species recorded on-site (confirmed, probable or possible) is equivalent to an assemblage of Local level importance using criteria within Fuller (1980).



- Survey Area
- Likely territory/colony
- Registration (non-confirmed territory)
- Birds in flight
- Birds potentially part of same colony/group

#### Species List

##### Red list

HS - House sparrow  
LI - Linnet  
SG - Starling  
ST - Song thrush

##### Green list

GR - Greenfinch  
MH - Moorhen

##### Amber list

BF - Bullfinch  
D. - Dunnock  
SI - Swift  
SN - Snipe\*

Note that only those species identified as being red or amber listed (BoCC, 2015), schedule 1, or those deemed of site specific, local or regional importance (e.g. green-list species showing significant population declines within The State of the UK's Birds (Burns et al, 2020)) are mapped.

Circles denoting territory/colony are indicative only and do not show extent of territory, only approximate location. Territories are presumed based on breeding evidence or multiple registrations over several visits.

\*Species not recorded during breeding bird survey but during separate visit



Suite 1, Deer Park Business Centre,  
Eckington, Pershore WR10 3DN

† 01386 751100  
e pershore@csaenvironmental.co.uk  
w csaenvironmental.co.uk

Project Leicester Road, Earl Shilton  
Drawing Title Breeding Bird Survey Plan  
Client Gladman Developments Ltd

|       |              |             |              |
|-------|--------------|-------------|--------------|
| Date  | Jan 2021     | Drawing No. | CSA/4519/114 |
| Scale | Not to scale | Rev         | A            |
| Drawn | KK           | Checked     | AP           |

| Common name              | Latin name                     | Conservation Status | Breeding Status  | Survey Date |            |            |            | Notes                                                                                                                                                                                                 |
|--------------------------|--------------------------------|---------------------|------------------|-------------|------------|------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                |                     |                  | 16/04/2020  | 15/05/2020 | 27/05/2020 | 25/06/2020 |                                                                                                                                                                                                       |
| Cormorant                | <i>Phalacrocorax carbo</i>     | Green               | Non-breeding     |             |            | F          |            | One bird flying over the Site only                                                                                                                                                                    |
| Mallard                  | <i>Anas platyrhynchos</i>      | <b>Amber</b>        | Non-breeding     | F           |            |            |            | 2 flyover, but could make use of on-site pond                                                                                                                                                         |
| Red-legged partridge     | <i>Alectoris rufa</i>          | -                   | Possible         |             |            | x          |            | Single bird singing from fenceline near stable in F1                                                                                                                                                  |
| Pheasant                 | <i>Phasianus colchicus</i>     | -                   | Possible         |             | x          |            |            | One male recorded in F1 on one occasion                                                                                                                                                               |
| Moorhen                  | <i>Gallinula chloropus</i>     | Green               | Possible         |             |            |            | x          | One bird on pond                                                                                                                                                                                      |
| Snipe                    | <i>Gallinago gallinago</i>     | <b>Amber</b>        | Non-breeding     |             |            |            |            | Recorded within the pond area on another visit to the Site (not a formal bird survey)                                                                                                                 |
| Lesser Black-backed Gull | <i>Larus fuscus</i>            | <b>Amber</b>        | Non-breeding     | x           |            |            |            | 1 flyover                                                                                                                                                                                             |
| Feral pigeon             | <i>Columba livia (domest.)</i> | Green               | Non-breeding     |             |            | F          |            | 1 flyover                                                                                                                                                                                             |
| Woodpigeon               | <i>Columba palumbus</i>        | Green               | Confirmed        | x           | x          | x          | x          | Regular flyover small numbers. Regularly flushed from boundary hedgerows and trees with several singing males, confirmed nest in H3 and suspected nests in H8 and H14                                 |
| Collared dove            | <i>Streptopelia decaocto</i>   | Green               | Probable offsite |             | x          |            | x          | Occasional flyover with a pair and singing male recorded on two occasions in mature scrub to the south of F4                                                                                          |
| Swift                    | <i>Apus apus</i>               | <b>Amber</b>        | Non-breeding     |             |            | x          | x          | Foraging over the site on two occasions with a peak of four birds recorded. Recorded over southern edge of F1 as well as offsite land immediately to the south-east, south and north-west of the Site |

|                    |                                 |                   |              |   |   |   |   |                                                                                                                                                                                                                                                                          |
|--------------------|---------------------------------|-------------------|--------------|---|---|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Swallow            | <i>Hirundo rustica</i>          | Green             | Non-breeding |   | x | x | x | Recorded foraging over F1 and F4 with a peak of three birds. No nests observed in on-site stables/buildings                                                                                                                                                              |
| Pied wagtail       | <i>Motacilla alba yarrellii</i> | Green             | Possible     |   | x |   |   | One feeding on ground near stable in F1                                                                                                                                                                                                                                  |
| Wren               | <i>Troglodytes troglodytes</i>  | Green             | Confirmed    | x | x | x | x | Common and widespread within hedgerows. Recently fledged fledglings/family group recorded                                                                                                                                                                                |
| Robin              | <i>Erithacus rubecula</i>       | Green             | Confirmed    | x | x | x | x | Frequently recorded in hedgerows with recently fledged juvenile recorded in H12                                                                                                                                                                                          |
| Dunnock            | <i>Prunella modularis</i>       | <b>Amber, S41</b> | Probable     | x | x |   | x | Frequently recorded in hedgerows. Five locations where males repeatedly recorded singing, or birds sighted in these locations, though individuals or pairs seen frequently. Complex breeding relationships makes determining number of 'territories' difficult           |
| Song thrush        | <i>Turdus philomelos</i>        | <b>Red, S41</b>   | Probable     | x | x | x | x | One foraging in field edge of F2, and individual birds heard singing on small number of occasions. Suspect two pairs present                                                                                                                                             |
| Blackbird          | <i>Turdus merula</i>            | Green             | Probable     | x | x | x | x | Abundant across the Site with individuals, pairs and small groups regularly recorded in hedgerows and foraging on open grassland. Only three singing males recorded (H7, H8 and offsite trees to east). Male seen carrying food across F1 but unknown if nesting on-site |
| Blackcap           | <i>Sylvia atricapilla</i>       | Green             | Probable     | x |   | x | x | Frequently recorded in hedgerows and scrub, suspected 4 territories                                                                                                                                                                                                      |
| Common whitethroat | <i>Sylvia communis</i>          | Green             | Possible     |   | x | x |   | Small number of birds recorded on single occasions (H15, H2, H9 and scrub south of F4)                                                                                                                                                                                   |

|                    |                               |                 |                     |   |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------------|-------------------------------|-----------------|---------------------|---|---|---|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lesser whitethroat | <i>Sylvia curruca</i>         | Green           | Possible            | x |   |   |   | One singing in west corner of H10                                                                                                                                                                                                                                                                                                                                                                         |
| Chiffchaff         | <i>Phylloscopus collybita</i> | Green           | Confirmed           | x | x | x | x | Up to four suspected territories recorded from singing males. 'Off-nest' call heard along H7 with 2 juvenile birds later seen in this location                                                                                                                                                                                                                                                            |
| Great tit          | <i>Parus major</i>            | Green           | Confirmed           | x | x | x | x | Occasionally recorded across the Site. Nest confirmed in scrub at southern end of F1. Family group recorded in H11 and chick being fed in scrub south of F4                                                                                                                                                                                                                                               |
| Blue tit           | <i>Cyanistes caeruleus</i>    | Green           | Confirmed           | x | x | x | x | Occasionally recorded across the Site. Family group present in woods at the north end of H7                                                                                                                                                                                                                                                                                                               |
| Long-tailed tit    | <i>Aegithalos caudatus</i>    | Green           | Confirmed           |   |   | x | x | Occasionally recorded across the Site. Family group present in F4                                                                                                                                                                                                                                                                                                                                         |
| Magpie             | <i>Pica pica</i>              | Green           | Confirmed           | x | x | x | x | Frequent across the Site in hedgerows/trees and foraging on grassland. Nest strongly suspected in H15                                                                                                                                                                                                                                                                                                     |
| Jackdaw            | <i>Corvus monedula</i>        | Green           | Non-breeding        | F | F | F |   | Recorded flying over the Site only as individuals or pairs                                                                                                                                                                                                                                                                                                                                                |
| Carion crow        | <i>Corvus corone corone</i>   | Green           | Possible            | x | x | x |   | Recorded surprisingly infrequently. Single birds recorded in H14, H15 and foraging in F4 on three separate occasions                                                                                                                                                                                                                                                                                      |
| Starling           | <i>Sturnus vulgaris</i>       | <b>Red, S41</b> | (Confirmed offsite) | x | F | x | x | Low activity recorded initially with individuals noted in boundary scrub or flying overhead. During the second survey, they were recorded continuously flying over the Site with food to the neighbouring houses and likely nest sites. They were not recorded foraging on the Site at this time though groups of c.15 (including juveniles) were recorded foraging in F4 and F3 during the third survey. |

|                          |                            |                   |           |           |           |           |           |                                                                                                                                                                                                                           |
|--------------------------|----------------------------|-------------------|-----------|-----------|-----------|-----------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| House sparrow            | <i>Passer domesticus</i>   | <b>Red, S41</b>   | Probable  | x         | x         | x         | x         | Colonies recorded south of F4 in dense scrub and within garden boundary hedgerows in the south of F3 and F4. Individuals sighted elsewhere at the Site. Likely nesting in offsite buildings but may nest in on-site scrub |
| Chaffinch                | <i>Fringilla coelebs</i>   | Green             | Possible  | x         | x         |           | x         | Low numbers of birds (male and female) recorded across the Site on occasion (max three sightings on second survey). Some calling but no singing recorded                                                                  |
| Linnet                   | <i>Linaria cannabina</i>   | <b>Red, S41</b>   | Probable  | x         | x         |           | x         | Suspected colonies in H15, H2 and south of F4 with groups of five or six birds seen and occasional singing males.                                                                                                         |
| Goldfinch                | <i>Carduelis carduelis</i> | Green             | Possible  | x         | x         |           | x         | Recorded rarely with single birds noted singing in H2 and H13 with occasional flyover                                                                                                                                     |
| Greenfinch               | <i>Chloris chloris</i>     | Green             | Confirmed | x         | x         | x         |           | Regularly seen at the Site, mainly in H16/H11 and adjoining areas. Bird seen carrying nest material and two juveniles seen in north corner of H16. Several singing males, suspected at least four pairs present.          |
| Bullfinch                | <i>Pyrrhula pyrrhula</i>   | <b>Amber, S41</b> | Probable  | x         | x         |           | x         | Female recorded in scrub south of F4 during first survey, then several sightings including a pair noted around H12/H13 so may be nesting in this area                                                                     |
| <b>TOTAL SPECIES: 35</b> |                            | -                 |           | <b>23</b> | <b>24</b> | <b>22</b> | <b>22</b> |                                                                                                                                                                                                                           |

## **Appendix I**

### Reptile Survey Report

## Legislation

All British reptile species are listed within Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded protection against intentional or reckless killing and injury under Section 9 (1) of the Act. In addition, all British reptile species are adopted as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities Act 2006.

## Methods

A reptile survey was set-up on 17 March 2020 to determine the presence or likely absence of reptile species at the Site, their distribution and estimated population size-class. Reptile refugia, comprising c. 75 squares of roofing felt (c. 0.5 x 0.5m or greater) were set out in areas of suitable habitat across the Site (locations are shown in Reptile Survey Plan CSA/4519/113).

The refugia warm up quickly in the sun and provide sheltered places where reptiles may obtain warmth. Checks are carried out when weather conditions are suitable, typically when air temperatures are between 10-20°C. Surveying is usually most effective between about 8.30am and 11.00am, and between 4.00pm and 6.30pm during the peak of the season, however this is variable and related to local weather conditions. Weather conditions are recorded alongside the survey results in Table I.1 below.

Seven survey visits were undertaken between April and August 2020. On each survey occasion, refugia were checked for reptiles basking beneath or on-top of the mats, in combination with visual searches of open areas that could be used for basking purposes.

## Results

One grass snake *Natrix natrix* (syn. *N. helvetica*) was discovered during the sixth survey visit, along the southern part of Hedgerow H11 which runs north to south along Field F3 in the centre of the Site (see Reptile Survey Plan CSA/4519/113). The grass snake was incidentally sighted whilst walking around the Site. The survey conditions and results are given in Table I.1 below.

**Table I.1.** Reptile presence/absence survey results and weather conditions

| Survey Date | Time  | WEATHER    |                     |                         |                            | Species Present                      |
|-------------|-------|------------|---------------------|-------------------------|----------------------------|--------------------------------------|
|             |       | TEMP<br>°C | CLOUD<br>Oktas; n/8 | WIND<br>Beaufort<br>1-5 | RAIN<br>Type &<br>duration |                                      |
| 16/04/2020  | 08:30 | 13         | 1                   | 1                       | Dry                        | None                                 |
| 15/05/2020  | 08:45 | 15         | 2                   | 2-3                     | Dry                        | None                                 |
| 29/05/2020  | 09:15 | 16         | 0-1                 | 2                       | Dry                        | None                                 |
| 18/06/2020  | 17:45 | 14         | 1                   | 1                       | Dry                        | None                                 |
| 25/06/2020  | 09:00 | 19         | 0                   | 2                       | Dry                        | None                                 |
| 20/07/2020  | 10:00 | 18         | 1                   | 2                       | Dry                        | <b>One grass snake<br/>along H11</b> |
| 04/08/2020  | 10:00 | 15         | 2                   | 3                       | Dry                        | -                                    |



- Extent of reptile mats
- Number of refugia
- Grass snake sighting



Suite 1, Deer Park Business Centre,  
Eckington, Pershore WR10 3DN  
t 01386 751100  
e pershore@csaenvironmental.co.uk  
w csaenvironmental.co.uk

|               |                                      |       |              |             |              |
|---------------|--------------------------------------|-------|--------------|-------------|--------------|
| Project       | Land at Leicester Road, Earl Shilton | Date  | Dec 2020     | Drawing No. | CSA/4519/113 |
| Drawing Title | Reptile Survey Plan                  | Scale | Not to scale | Rev         | A            |
| Client        | Gladman Developments                 | Drawn | AP           | Checked     | KC           |

## **Appendix J**

### Great Crested Newt Survey Report

## **Legislation**

Great crested newts *Triturus cristatus* and their habitat are legally protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to capture, injure, kill or disturb great crested newts and damage or destroy a breeding site or resting place used by great crested newts (i.e. their habitat, both aquatic and terrestrial).

Where development is proposed that would result in an offence under the Habitats Regulations, a European Protected Species (EPS) derogation licence would be needed from Natural England to permit an act that would otherwise be unlawful. To secure such a licence it must be demonstrated that the proposed activity will not adversely affect the local great crested newt population status.

## **Methods**

### Pond Scoping and Habitat Suitability Index (HSI) Assessment

Under Natural England guidelines, all ponds within 500m of a development site should be considered with regard to great crested newts, as this is the generally accepted typical maximum dispersal range of this species. Ponds were identified using online mapping resources and aerial images.

Where ponds were situated within a 500m radius and connected to the Site and wider survey area by traversable terrestrial habitats, access permission was requested (initially by postal letter or email then a phone call) to undertake a Habitat Suitability Index (HSI) assessment, using the standard approach set out by Oldham et al (2000).

A total of five ponds were identified within this radius and were subject to HSI assessment on 23 January 2020 using criteria within Oldham et al. (2001) to determine their suitability for breeding by great crested newt.

### Traditional Surveys

Following the HSI assessments, suitable ponds were subject to great crested newt presence / likely absence surveys in accordance with Natural England guidelines. All surveys were undertaken by two surveyors, one of which was a licensed great crested newt surveyor. Surveys were undertaken by Kate Kibble MCIEEM (Natural England Class Licence reference: 2015-16710\_CLS-CLS) and Alex Perry ACIEEM (Natural England Class Licence reference: 2015-18118-CLS-CLS).

Ponds P1 and P4-P7 were surveyed on one occasion between 17 March 2020. Ponds P1, P6 and P7 were surveyed using a combination of bottle trapping, torchlight searching and egg searching. Due to the lined and ornamental nature of Ponds P4 and P5, these ponds were surveyed by torchlight surveys, egg searches and refuge searches.

On each survey bottle traps were set out in the evening, before dusk. The traps were then checked and removed early the following morning (between 06:30 – 08:00), and any captured newts were examined, recorded and then released.

Torchlight surveys were carried out after dark at suitable temperatures, where the ponds were surveyed visually with one million candlepower Clulite™ torches. Any amphibians seen were recorded, as well as air temperature, vegetation cover and turbidity of the water.

Egg searches were also conducted amongst any pond vegetation for the presence of great crested newt eggs.

Refuge searches comprised looking under nearby logs or debris for amphibians, including great crested newts.

#### eDNA sampling

Following the announcement of a UK wide lockdown due to the outbreak of COVID-19, completion of traditional surveys was not possible. Instead, Pond P1 on-site was subject to eDNA analysis, as agreed with the LPA Ecologist, through collection of water samples and submission to a laboratory to test for presence of great crested newt DNA. Because of the urban nature of land between the Site and Ponds P4 to P7, and the distance between the two, great crested newts within these ponds are considered to represent an isolated metapopulation and are not anticipated to use the habitats on-site.

This method was used to determine the presence/absence of this species within suitable ponds and has been shown to be highly effective in detecting the presence of great crested newts (Biggs *et al.* 2014).

Water samples were collected from Ponds P1 on 16 April 2020 by Kate Kibble GradCIEEM following the recommended procedure. Appropriate biosecurity measures were taken to avoid cross contamination of great crested newt eDNA. Subsequently the samples were sent to Fera Science Ltd for DNA analysis.

## Limitations

Pond P2 was found to be not present and access was denied for assessment of Pond P3.

Given the following lockdown restrictions due to the COVID-19 pandemic, only one traditional survey was undertaken. To compensate, eDNA analysis of the on-site pond was carried out in April 2020.

## **Results**

### Pond Scoping and Habitat Suitability Index (HSI) Assessment

The pond scoping exercise identified five ponds within a 500m radius of the Site (see Pond Plan CSA/4519/112). One pond is located on-site with a further two within 500m. Pond P2 was found to be not present and access was denied to Pond P3 and therefore these ponds were discounted from further survey.

Access was not granted to Ponds P4 and P5 until the date of the first traditional survey in March 2020. A summary of HSI scores for each pond, alongside their distance from the wider survey area is given in Table J.1 below. .

**Table J.1.** Results of HSI calculations and pond descriptions

| Pond | Description                                 | Distance from Site | HSI score            |
|------|---------------------------------------------|--------------------|----------------------|
| P1   | Pond in corner of grassland field           | On-site            | 0.79 - Good          |
| P2   | Not present                                 | c. 60m east        | Not present          |
| P3   | Large pond with island                      | c. 370m east       | Access denied-       |
| P4   | Small garden pond with aquatic plants       | c. 480m south-west | Below average - 0.58 |
| P5   | Small, lined ornamental pond within garden  | c. 500m south-west | Average – 0.66       |
| P6   | Large, steep sided pond set within woodland | c. 525m south-west | Average - 0.65       |
| P7   | Large pond set within woodland              | c. 585m south-west | Average - 0.69       |

HSI of the on-site pond originally found the waterbody to have 'Good' suitability for great crested newts with a score of 0.80. It was later noticed that the pond contained high numbers of fish, including suspected tench *Tinca tinca* and rudd *Scardinius erythrophthalmus*. As such the revised HSI score with major fish presence is 'Below Average' (0.53).

Two ponds (P4 and P5) were located within a residential garden, c. 480m and c. 500m respectively. Pond P4 comprises a small garden pond with some aquatic plants and was found to have 'Below Average' suitability (0.58) whilst Pond P5 was found to comprise a lined pond managed for wildlife and scored 'Average' suitability (0.66). An additional two ponds

are located outside of 500m from the Site but connected to Ponds P4 and P5 by grassland and woodland. As such these ponds were also subject to a HSI.

Pond P6 and P7 are located within an area of woodland c. 525m and 585m south-west of the Site respectively. These ponds comprise basins within a previous sandpit surrounded by mature woodland. Pond P6 is located to the north of the woodland and scored 'Average' (0.69). The larger of these ponds, Pond P7, is located to the south of the woodland and Pond P6 and scored 'Average' (0.65).

On the basis of the HSI results, Ponds P1, P4-P7 were subject to traditional surveys.

#### Traditional surveys

A single traditional survey was undertaken at the five ponds on 17 March 2020, results of which are shown in Table J.2 below.

**Table J.2.** Great Crested Newt Survey Results 17 March 2020

| <b>Pond reference</b> | <b>Torch GCN count</b> | <b>Bottle trap GCN count</b> | <b>Eggs</b> | <b>Other species</b>                  |
|-----------------------|------------------------|------------------------------|-------------|---------------------------------------|
| Pond P1               | 0                      | 0                            | N           | One non-sexed small newt              |
| Pond P4               | 0                      | Not used                     | N           | One female, one non sexed smooth newt |
| Pond P5               | 39 male, 18 female gcn | Not used                     | Yes - GCN   | 18 male, 45 female smooth newts       |
| Pond P6               | 0                      | 0                            | No          | 1 male, 1 female smooth newt          |
| Pond P7               | 1 male gcn             | 0                            | No          | 7 male, 1 female smooth newt          |

No great crested newts were recorded within the on-site pond. The torchlight survey revealed the pond to be well stocked with fish.

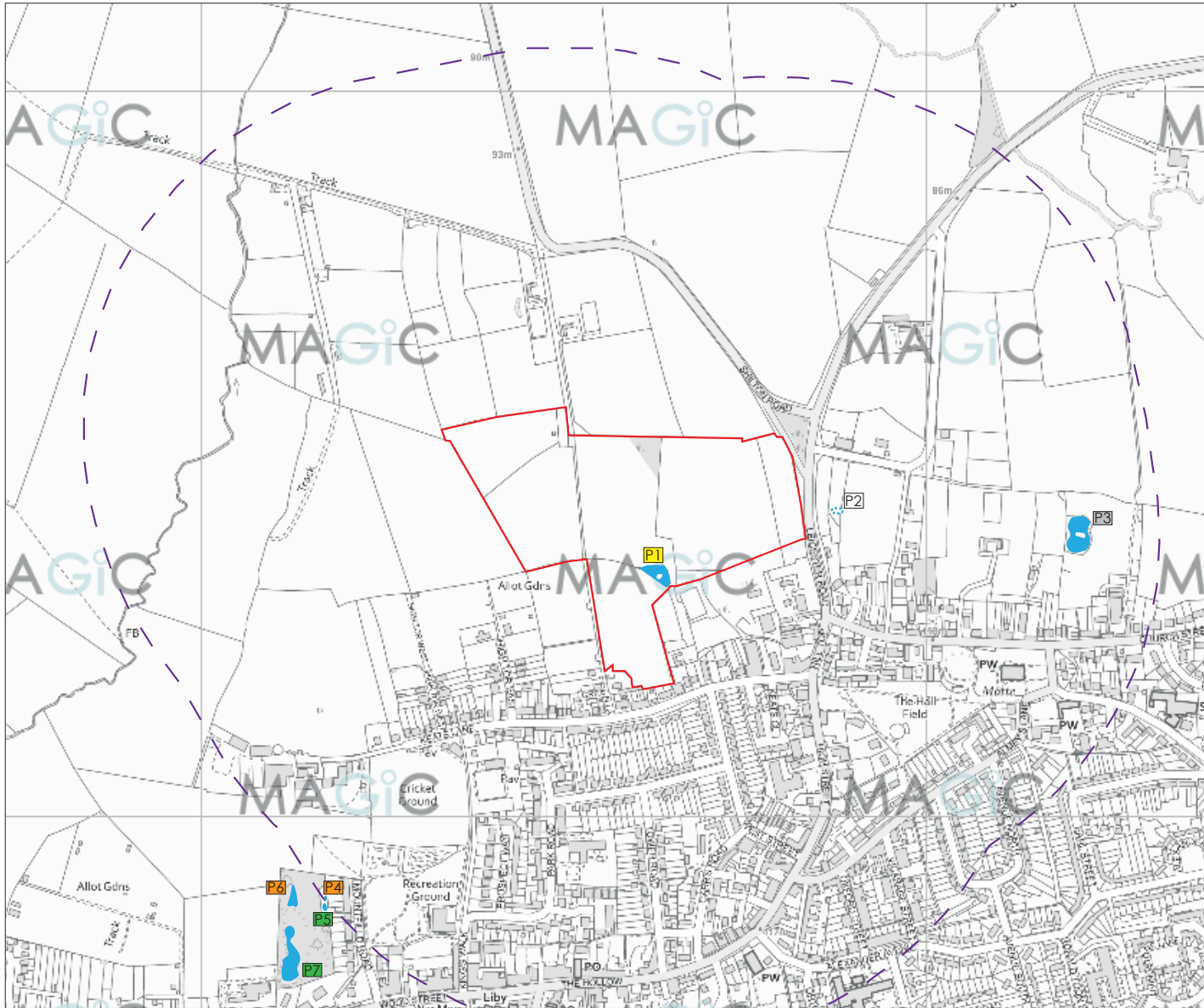
Surveys of Ponds P4 and P4 also recorded no great crested newts. A total of 39 male and 18 female great crested newts were recorded within Pond P5, as well as great crested newt eggs, confirming breeding. A single male great crested newt was recorded in Pond P7.

Based on the survey results above, Pond P5 supports a 'medium' population of great crested newts, whilst Pond P7 supports a 'small' population.

Smooth newts were recorded in Ponds P4-P7, with a single non-sexed small newt recorded within Pond P1.

### *Environmental DNA sampling*

The eDNA analysis of the onsite pond P1 was undertaken on 16 April 2020 by Kate Kibble. It found great crested newt DNA to be absent from the water samples, indicating likely absence from the on-site pond. Confirmation of eDNA survey results can be seen below.



- 



|       |                |             |              |
|-------|----------------|-------------|--------------|
| Date  | June 2020      | Drawing No. | CSA/4519/112 |
| Scale | Refer to scale | Rev         | -            |
| Drawn | AP             | Checked     | KC           |

**Table G.2.** HSI Calculator

|         | SI <sub>1</sub> |   | SI <sub>2</sub> |      | SI <sub>3</sub> |     | SI <sub>4</sub> |      | SI <sub>5</sub> |     | SI <sub>6</sub> |      | SI <sub>7</sub> |   | SI <sub>8</sub> |      | SI <sub>9</sub>     |      | SI <sub>10</sub> |       | Product   | HSI         | Suitability   |
|---------|-----------------|---|-----------------|------|-----------------|-----|-----------------|------|-----------------|-----|-----------------|------|-----------------|---|-----------------|------|---------------------|------|------------------|-------|-----------|-------------|---------------|
|         | Location        |   | Pond Area       |      | Pond Drying     |     | Water Quality   |      | Shade           |     | Fowl            |      | Fish            |   | Ponds           |      | Terrestrial Habitat |      | Macrophytes      |       |           |             |               |
| Pond P1 | Zone A          | 1 | 175m2           | 0.35 | Rarely Dries    | 1   | Moderate        | 0.67 | 0-60%           | 1   | Absent          | 1    | Major           | 0 | 7               | 0.85 | Good                | 1    | 46-50%           | 0.800 | 0.0015946 | 0.525128    | Below Average |
| Pond P5 | Zone A          | 1 | 50-100m2        | 0.1  | Never Dries     | 0.9 | Good            | 1    | 0-60%           | 1   | Absent          | 1    | Absent          | 1 | 8               | 0.87 | Moderate            | 0.67 | 1-5%             | 0.350 | 0.0187835 | 0.672012786 | Average       |
| Pond P4 | Zone A          | 1 | <50m2           | 0.05 | Never Dries     | 0.9 | Moderate        | 0.67 | 0-60%           | 1   | Absent          | 1    | Absent          | 1 | 8               | 0.87 | Moderate            | 0.67 | <1%              | 0.300 | 0.0053935 | 0.593181145 | Below Average |
| Pond P6 | Zone A          | 1 | 275m2           | 0.55 | Never Dries     | 0.9 | Moderate        | 0.67 | 96-100%         | 0.2 | Minor           | 0.67 | Absent          | 1 | 8               | 0.87 | Good                | 1    | 1-5%             | 0.350 | 0.0138434 | 0.651814902 | Average       |
| Pond P7 | Zone A          | 1 | 900m2           | 0.97 | Never Dries     | 0.9 | Moderate        | 0.67 | 96-100%         | 0.2 | Minor           | 0.67 | Absent          | 1 | 8               | 0.87 | Good                | 1    | 1-5%             | 0.350 | 0.0244147 | 0.689866712 | Average       |

Disclaimer: The HSI Calculator is a tool to provide a general assesment of great crested newt *Triturus cristatus* habitat suitability in accordance with Oldham et al., 2000 and Brady, 2010. It is the responsibilty of the user to check the accuracy of the outputs. The copyright holder accepts no responsibility for repercussions (financial and/or legal) resulting from inaccurate or incorrect outputs.

# DNA Analysis Report - Commercial in Confidence



**Customer:** CSA Environmental  
**Address:** Barn C  
Dixies Barns  
Baldock  
Hertfordshire  
SG7 5NT  
**Contact:** Charlotte Harris  
**Email:** kate.kibble@csaenvironmental.co.uk  
**Tel:** 01386 751100  
**Report date:** 04-May-2020  
**Order Number:** GCN20-1223  
**Samples:** Pond Water  
**Analysis requested:** Detection of Great Crested Newt eDNA from pond water.

Thank you for submitting your samples for analysis with the Fera eDNA testing service. The details of the analysis are as follows:

## Method:

The method detects pond occupancy from great crested newts (GCN) using traces of DNA shed into the pond environment (eDNA). The detection of GCN eDNA is carried out using real time PCR to amplify part of the cytochrome 1 gene found in mitochondrial DNA. The method followed is detailed in Biggs J., et al, (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

The limits of this method are as follows: 1) the results are based on analyses of the samples supplied by the client and as received by the laboratory, 2) any variation between the characteristics of this sample and a batch will depend on the sampling procedure used. 3) the method is qualitative and therefore the levels given in the score are for information only, they do not constitute the quantification of GCN DNA against a calibration curve, 4) a 'not detected' result does not exclude presence at levels below the limit of detection.

The results are defined as follows:

- Positive:** DNA from the species was detected.  
**eDNA Score:** Number of positive replicates from a series of twelve.  
**Negative:** DNA from the species was not detected; in the case of negative samples the DNA extract is further tested for PCR inhibitors and degradation of the sample.  
**Inconclusive:** Controls indicate degradation or inhibition of the sample, therefore the lack of detection of GCN DNA is not conclusive evidence for determining the absence of the species in the sample provided.

# DNA Analysis Report - Commercial in Confidence



| CustomerReference | Fera Reference | GCN Detection | eDNA Score | Inhibition | Degradation |
|-------------------|----------------|---------------|------------|------------|-------------|
| -                 | S20-012779     | Negative      | 0          | No         | No          |

The results indicate that eDNA for great crested newts was not detected in the sample submitted. Analysis was conducted in the presence of the following controls: 1) extraction blank, 2) appropriate positive and negative PCR controls for each of the TaqMan assays (GCN, Inhibition, and Degradation). All controls performed as expected.

This test procedure was developed using research funded by the Department of Environment, Food and Rural Affairs.

**Issuing officer: Steven Bryce**

**Tel: 01904 462 070**

**Email: e-dna@fera.co.uk**

## **Appendix K**

### Hedgerow Assessments

| Hedgerow reference                                                                                                 | H1  | H2  | H3 | H4  | H5                  | H6                  | H7  | H8  | H9  | H10 | H11                         | H12 | H13 | H14 | H15 | H16                         |
|--------------------------------------------------------------------------------------------------------------------|-----|-----|----|-----|---------------------|---------------------|-----|-----|-----|-----|-----------------------------|-----|-----|-----|-----|-----------------------------|
| Does the hedgerow lie within, or mark the boundary to, a private garden?                                           | N   | N   | N  | Y   | Y                   | Y                   | N   | N   | N   | N   | N                           | N   | N   | N   | N   | N                           |
| Hedgerow Length (m)                                                                                                | 145 | 116 | 25 | 109 | does not qualify    | does not qualify    | 200 | 143 | 105 | 75  | does not qualify            | 42  | 170 | 224 | 75  | does not qualify            |
| Is there a bank or wall which supports the hedgerow along at least one half of its length?                         | N   | Y   | N  | N   | N/A                 | N/A                 | N   | N   | N   | N   | N/A                         | N   | N   | N   | U   | N/A                         |
| Are there gaps in aggregate in less or equal to 10% of the length of the hedgerow?                                 | Y   | Y   | Y  | Y   | N/A                 | N/A                 | Y   | Y   | Y   | Y   | N/A                         | Y   | Y   | Y   | Y   | N/A                         |
| Is there at least one standard tree per 50m of hedge?                                                              | N   | N   | N  | N   | N/A                 | N/A                 | N   | N   | N   | N   | N                           | N   | N   | N   | N   | N                           |
| Is there a ditch along at least one half of the length of the hedgerow                                             | N   | N   | Y  | N   | N/A                 | N/A                 | Y   | N   | Y   | N   | N/A                         | N   | Y   | Y   | N   | N/A                         |
| Is a parallel hedge present within 15m                                                                             | Y   | N   | N  | N   | N/A                 | N/A                 | N   | N   | N   | N   | N/A                         | N   | N   | N   | N   | N/A                         |
| Are there three or more woodland species?                                                                          | N   | N   | N  | N   | N/A                 | N/A                 | N   | N   | Y   | N   | N/A                         | N   | N   | N   | N   | N/A                         |
| Are there connections scoring at least 4 points in total                                                           | N   | N   | N  | N   | N/A                 | N/A                 | Y   | N   | N   | N   | N/A                         | N   | N   | N   | N   | N/A                         |
| Number of additional features                                                                                      | 2   | 2   | 2  | 1   | 0                   | 8                   | 3   | 1   | 3   | 1   | 0                           | 1   | 2   | 2   | 1   | 0                           |
| Is the hedge either adjacent to bridleway or footway, a road used as a public footpath or a byway open to traffic? | Y   | N   | N  | N   | N/A                 | N/A                 | N   | N   | N   | N   | N/A                         | N   | N   | N   | N   | N/A                         |
| Number of woody species                                                                                            | 3   | 3   | 5  | 5   | N/A                 | N/A                 | 3.5 | 4.5 | 4   | 6   | N/A                         | 3   | 3.5 | 4.6 | 7   | N/A                         |
| Woodland species within 1m of the outermost edges of the hedgerow                                                  | 1   | 1   | 1  | 0   | N/A                 | N/A                 | 2   | 0   | 4   | 0   | 1                           | 0   | 0   | 0   | 0   | 0                           |
| Is the hedge known to any of the legislative categories                                                            | N   | N   | N  | N   | N                   | N                   | N   | N   | N   | N   | N                           | N   | N   | N   | N   | N                           |
| Evaluation: Important?                                                                                             | N   | N   | N  | N   | N/A                 | N/A                 | N   | N   | N   | N   | N/A                         | N   | N   | N   | Y   | N/A                         |
| Notes                                                                                                              |     |     |    |     | Ornamental hedgerow | Ornamental hedgerow |     |     |     |     | Hedgerow under 30 years old |     |     |     |     | Hedgerow under 30 years old |



Dixies Barns, High Street, Ashwell,  
Hertfordshire SG7 5NT

t 01462 743647

e [ashwell@csaenvironmental.co.uk](mailto:ashwell@csaenvironmental.co.uk)

w [csaenvironmental.co.uk](http://csaenvironmental.co.uk)

Suite 1, Deer Park Business Centre, Eckington,  
Pershore, Worcestershire WR10 3DN

t 01386 751100

e [persshore@csaenvironmental.co.uk](mailto:persshore@csaenvironmental.co.uk)

w [csaenvironmental.co.uk](http://csaenvironmental.co.uk)

Office 20, Citibase, 95 Ditchling Road,  
Brighton BN1 4ST

t 01273 573871

e [brighton@csaenvironmental.co.uk](mailto:brighton@csaenvironmental.co.uk)

w [csaenvironmental.co.uk](http://csaenvironmental.co.uk)