

## **8 ECOLOGY AND NATURE CONSERVATION**

### **8.1 INTRODUCTION**

8.1.1 This chapter of the ES assesses the likely significant effects of the Proposed Development in terms of ecology and nature conservation, with additional detail, consideration and survey results set out at **Appendices 8.1 and 8.2**.

8.1.2 The chapter describes: the assessment methodology; survey methods; the baseline conditions existing at the Application Site and surroundings; the likely significant environmental effects of the proposed development; and presents the avoidance and mitigation measures required to prevent, reduce or offset any significant adverse effects; and the likely residual effects after these measures have been employed. This chapter has been prepared by Aspect Ecology.

### **8.2 ASSESSMENT APPROACH**

#### **Methodology**

8.2.1 The methodology utilised for the survey work can be split into three main areas: a desktop study, habitat survey, and faunal surveys. A summary of the survey methodology is given below, and further detail is provided in the full Ecological Baseline Assessment at **Appendix 8.1**.

#### Desktop Survey

8.2.2 In order to compile background information on the Application Site and its immediate surroundings, a number of recording organisations and online data sources were consulted:

- Warwickshire Biological Records Centre (WBRC);
- Multi-Agency Geographic Information for the Countryside (MAGIC) database;
- Woodland Trust database of notable, veteran and ancient trees

8.2.3 Relevant information from these sources is referred to where appropriate within this document and at **Appendix 8.1**.

#### Habitat Survey

8.2.4 The Application Site was surveyed based on standard Phase 1 Habitat Survey methodology<sup>1</sup>, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal to record details on the actual or potential presence of any notable or protected species or habitats.

8.2.5 Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

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<sup>1</sup> JNCC (2010); 'Handbook for Phase 1 habitat survey: A technique for environmental audit.' JNCC

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8.2.6 In addition, specific consideration was undertaken in respect of the hedgerows within the Application Site against the Wildlife and Landscape criteria of the Hedgerows Regulations 1997.

#### Faunal Surveys

8.2.7 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention has also been paid to the potential presence of any protected, rare or notable species.

8.2.8 Specific Phase II survey work has also been undertaken in respect of a number of protected and notable species with potential to occur within the Application Site, namely bats, Badger, Great Crested Newt, reptiles and breeding birds. Further details of the survey methodologies is provided in the full Ecological Baseline Assessment at **Appendix 8.1**.

#### Assessment of Significance

8.2.9 The CIEEM publication 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (2018)<sup>2</sup> sets out a methodology for the assessment of potential effects arising from development. These methods have been followed and can be summarised as below.

8.2.10 Using the agreed parameters of the scheme, likely effects are determined with reference to aspects of the ecological structure and function on which the feature or resource depends. This includes factors such as the available resources, ecological processes, human influences, historical context, ecological relationships, ecological role or function and ecosystem properties. Based on this context, the nature of the effect is characterised and considered under the following parameters:

- Positive or negative – will the activity lead to an adverse, beneficial or neutral effect;
- Extent – the size or amount of an impact, the area of habitat or number of individuals affected;
- Duration – the time for which the impact is expected to last prior to recovery or replacement, i.e. short-term or long-term;
- Reversibility – an effect may be irreversible in that recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it, i.e. permanent or temporary;
- Timing and frequency – some changes may only cause an impact if they coincide with critical life-stages or seasons, whilst frequent events may cause a greater effect than a single event.

8.2.11 Based on these parameters, the scale of effect (or magnitude) can be summarised as set out within **Table 8.1**. This is in relation to adverse effects, although a similar scale can be applied to beneficial effects.

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<sup>2</sup> Chartered Institute of Ecology and Environmental Management (IEEM) (2018); 'Guidelines for Ecological Impact Assessment in the UK and Ireland', CIEEM

**Table 8.1: Assessment of scale of effect**

Scale	Description
Substantial	A permanent or long-term effect on the receptor, which may result in severe damage to key characteristics and implications for the integrity of the receptor or its conservation status.
Moderate	Impacts resulting in partial loss of or damage to a receptor, which could have implications for the integrity of the receptor or its conservation status.
Slight	Short-term or temporary impacts resulting in only minor loss of or damage to a receptor, unlikely to have implications for the integrity of the receptor or its conservation status.
Negligible	No effect or only a short-term reversible impact with no long-term effect on the receptor.

- 8.2.12 Based on the nature of the effect, an assessment is then made whether the effect on a habitat or species is likely to be ecologically 'significant'. CIEEM guidance defines a 'significant effect' as "an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general", going on to state that "significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution)."
- 8.2.13 Significance is also assessed at an appropriate geographic scale. For example, a significant effect on a Site of Special Scientific interest (SSSI) would be of national significance. Notwithstanding this however, consideration is also given to whether an effect is significant at a scale below the geographic context in which the feature is considered important.
- 8.2.14 For some ecological features (notably designations), there may be an existing statement of the conservation status of a feature and objectives and targets against which the effect can be judged. For example, Sites of Special Scientific Interest (SSSI) are assessed under six condition categories, namely favourable, unfavourable recovering, unfavourable no change, unfavourable declining, part destroyed, and destroyed. An effect that exerts a change between these condition categories would be considered as significant.
- 8.2.15 Where no existing statement of conservation status is available, an assessment is made against the existing status and condition of the habitat or species population, as recorded by survey data and background information, taking into account the level of ecological resilience or existing conditions that a habitat or species is currently subject to. An effect resulting in a long-term change to the existing background population trend or status at a given geographical level would be considered as significant. In this regard, a significant beneficial impact could be defined as one that prevents or slows an existing decline in the favourable conservation status of a habitat or population as much as one that permitted a population or habitat area to increase.
- 8.2.16 The likelihood or uncertainty of an effect occurring as predicted is also considered. To assist with defining certainty, the following scale is used (with broad confidence levels indicated in percentage terms):
- Certain/near-certain: probability estimated at 95% chance or higher;
  - Probable: probability estimated above 50% but below 95%;

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- Unlikely: probability estimated above 5% but less than 50%;
- Extremely unlikely: probability estimated at less than 5%.

#### **Legislative and Policy Framework**

8.2.17 Key legislation and planning policies of relevance to ecology and nature conservation with regard to the proposals are summarised below. Where relevant, legislative and policy requirements have been taken into account during the design of the Proposed Development, particularly when considering mitigation and enhancement measures, with features and species of nature conservation interest protected and enhanced where possible in line with the aims of the policies set out, as detailed in the relevant sections of this report.

#### Legislation

8.2.18 Key legislation relevant to wildlife and nature conservation includes:

- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Wildlife and Countryside Act 1981 (as amended)
- The Natural Environment and Rural Communities Act (2006)
- The Countryside and Rights of Way Act (2000)
- The Hedgerows Regulations (1997)
- The Protection of Badgers Act (1992)
- The Wild Mammals (Protection) Act 1996

8.2.19 Discussion of this legislation is given where relevant in relation to particular ecological features and fauna in the relevant sections of this chapter and the Baseline Ecological Assessment (see **Appendix 8.1**).

#### National Planning Policy

##### *National Planning Policy Framework (NPPF)*<sup>3</sup>

8.2.20 The NPPF describes the Government's national policies on 'conserving and enhancing the natural environment' (Chapter 15).

8.2.21 NPPF takes forward the Government's strategic objective to halt overall biodiversity loss, as set out at Paragraph 170, which states that planning policies and decisions should contribute to and enhance the natural and local environment by:

"Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"

8.2.22 The approach to dealing with biodiversity in the context of planning applications is set out at Paragraph 175:

"When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

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<sup>3</sup> Ministry of Housing, Communities & Local Government (2019); 'National Planning Policy Framework', Ministry of Housing, Communities & Local Government

- b) 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;
- c) 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; and
- d) 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.”

#### National Planning Policy Guidance<sup>4</sup>

- 8.2.23 The National Planning Policy Guidance provides additional detail and guidance on aspects of the National Planning Policy Framework. In respect of the Natural Environment, the NPPG places additional emphasis on biodiversity enhancement and highlights the importance of ecological networks and landscape habitat features.

#### The Development Plan

- 8.2.24 Relevant Planning Policy at the local level is provided within the Coventry Local Plan 2011 - 2031, which was adopted on 6 December 2017. Policies of direct relevance to Ecology and Nature Conservation are included within Section 7 (Green Belt and Green Environment) of the Local Plan, including in particular Policies GE1 (Green Infrastructure); and GE3 (Biodiversity, Geological, Landscape and Archaeological Conservation).

#### Scoping Criteria

- 8.2.25 A formal scoping opinion (December 2018) was provided by Coventry City Council (CCC) as discussed in Chapter 2, following a Scoping Request detailing the proposed extent of information to be provided within the ES (including, specifically in regard to Ecology and Nature Conservation). This Opinion incorporated information received from the LPA's ecology officer and Natural England. The response received included reference to the need to ensure any proposals remain in line with Local Plan Policy GE3, with details of proposed mitigation and enhancement measures to be included within the ES, particularly with reference to linkages with the Green Infrastructure provision across the site and within the wider surroundings.

#### Extent of Study Area

- 8.2.26 The extent of the study area has been informed by consideration of the zone of influence of the Proposed Development. The zone of influence is defined as the area over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities. The extent of such changes will typically reduce over distance, and whether effects are experienced is dependent on the sensitivity of individual habitats, species or other ecological features, such that it is difficult to define a specific zone of influence which captures all potential effects

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<sup>4</sup> CLG (March 2014) National Planning Policy Guidance

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arising from the Proposed Development. As such, two broad zones of influence are identified, on which the extent of the study are is based:

- The site itself, along with any immediately adjacent habitats forms the primary zone of influence, representing the habitats and associated species that could be directly affected by the footprint of the Proposed Development and associated works (in terms of habitat loss or damage). This zone also includes areas affected by factors such as noise, vibration, lighting, dust and pollution, the effects of which will be focused within the nearby surroundings (i.e. within 100m) of the Proposed Development.
- Beyond this, a wider (or secondary) zone of influence exists, where ecological features may be subject to wider scale effects such as recreational disturbance, air pollution from traffic or water pollution within the wider river catchment, with the extent of the relevant zone dependent on the nature of the ecological receptor being considered.

8.2.27 Accordingly, (as detailed within the Baseline Ecological Report, **Appendix 8.1**), the extent of the study area for the specific ecological survey work undertaken is largely limited to the site itself, albeit with additional consideration where appropriate in regard to particular faunal species. The assessment of features within the wider (secondary) zone of influence is largely based on background information identifying ecological designations or known habitats or species populations of importance which could be sensitive to such wider scale effects.

8.2.28 Where the extent of the study area in relation to individual ecological receptors includes specific consideration outside of the site itself, the precise details and extent of study are set out within the relevant sections of the Ecological Baseline Assessment (**Appendix 8.1**).

#### **Limitations to the Assessment**

8.2.29 All of the botanical species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of year, since different species are apparent during different seasons. However, the survey area was visited on a number of occasions, covering several years and including during April to October, ensuring that detailed habitat information could be gathered during the appropriate botanical survey season for each habitat type. It is therefore considered that the survey work has allowed a robust assessment of habitats and botanical interest across the Application Site. Furthermore, habitat survey work has been updated, most recently in January 2019 to confirm the latest position and any significant changes, ensuring that habitat survey information submitted in support of the application is current and up to date.

8.2.30 Any specific survey constraints or limitations are detailed in the full survey methodologies within Section 2 of the Baseline Ecological Assessment at **Appendix 8.1**. However, no significant general over-riding constraints or limitations were identified, and the surveys undertaken are therefore considered to allow a robust assessment of the ecological interest of the Application Site to be made.

**8.3 BASELINE CONDITIONS**

**Site Description and Context**

- 8.3.1 The Application Site is located in Keresley, north west of Coventry within the east of the Arden Landscape Character Area (Natural England Character Area 97), at the margin between the local landscape types Industrial Arden and Ancient Arden ,as identified within Coventry City Council’s Green Infrastructure Study<sup>5</sup> (e.g. Figure 5.2 within the study).
- 8.3.2 The Application Site is bounded to the east by Bennetts Road North and associated existing development within Keresley. North of the site is Keresley Rugby Club and associated playing fields, an area of covered reservoirs and Barrow Hill Lane. South of the site is Thompsons Lane, with associated residential properties to the east. Bunson’s Wood is present beyond Thompsons Lane to the west. West of the site is further arable land consistent with the site itself, with an undulating topography.
- 8.3.3 The Application Site itself is dominated almost entirely by intensively managed arable farmland in the form of a number of fields. Other habitats are therefore largely limited to the existing field boundaries and include field boundary hedgerows and associated standard trees, a single pond and associated vegetation and a single residential property (Thompsons Cottage), along with small areas of amenity grassland, scrub, tall herb vegetation and Bramble.

**Baseline Survey Information**

Ecological Designations

- 8.3.4 Ecological designations that occur within the vicinity of the Application Site are summarised at **Table 8.2**, below. Further detail is provided in the Ecological Baseline Assessment at **Appendix 8.1** and associated plan 1825/TFE2.

**Table 8.2: Ecological Designations Situated within the Vicinity of the Application Site**

<b>Name</b>	<b>Designation</b>	<b>Brief description</b>	<b>Distance/direction from Site</b>
Statutory Designations – International Level			
Ensor’s Pool	SAC	Very large population of Annex II species, White Clawed Crayfish <i>Austropotamobius pallipes</i>	6.0km NE
Statutory Designations – National Level			
Bedworth Sloughs	LNR	Wetland habitats created from former mining subsidence.	3.8km NE
Wyken Sloughs	LNR	Marshes, floodland and reedbeds with associated wetland and grassland habitats.	4.75km E
Dafferns Wood	LNR	Ancient Woodland	4.9km N
Relevant Non-statutory Designations			
Thompsons Farm	Ecosite (111/38)	Nature Conservation Status stated as ungraded. Identified as grazed grassland with high stocking rate (albeit now arable).	0 (within the site)
Bunsons Wood	LWS	Ancient Woodland	0.03km S
Hall Yard Wood	LWS	Ancient Woodland	0.25km W
Pikehorne Wood	LWS	Ancient woodland with Birch, Rowan and Oak dominated canopy.	0.5km SW

<sup>5</sup> Coventry City Council (2008); Coventry Green Infrastructure Study

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8.3.5 A number of areas of Ancient Woodland are present within the local area, the nearest of which is Bunsons Wood, which is located approximately 30m south of the Application Site boundary at its closest point (consistent with the LWS designation).

Habitats and Ecological Features

8.3.6 A full description of habitats and ecological features within the Application Site, along with an assessment of the ecological value of each type and feature, is set out within the Baseline Ecological Assessment at **Appendix 8.1**, with the location of the habitats and features represented within the associated Plan 1825/TFE3.

8.3.7 A summary of habitats considered to be of ecological importance occurring within and adjacent to the site is provided at **Table 8.3**, below.

**Table 8.3: Summary of Habitats and Ecological Features within the Application Site**

<b>Habitat Type</b>	<b>Brief description</b>	<b>Value</b>
Hedgerows	A number of hedgerows are present within the site, marking the existing field boundaries. The hedgerows present vary in terms of their continuity, structure and quality as set out within the Baseline Ecological Assessment (Appendix 8.1), albeit overall they provide cover and linear corridors across the Application Site available for use by a range of faunal species. The native hedgerows at the Application Site are considered to fall under the description for the S41/UK priority habitat for Hedgerows.	Local
Trees	The Application Site includes a number of mature trees, predominantly located within the hedgerows or associated with the pond, however a small number of isolated individual standard mature trees are also located within the arable fields. A number of these trees represent substantial individuals and a small number are considered to represent potential veteran trees.	Local
Pond	A single pond is present within the central part of the Application Site, in a small area of associated woodland/trees. The pond and associated vegetation provide a substantial, mature feature with aquatic vegetation, albeit the considerable shading provided by the woodland/trees is such that marginal vegetation is largely absent.	Local

8.3.8 Other habitats present within the Site include arable land, improved grassland and ruderal vegetation, scrub, buildings and hardstanding. These habitats are not considered to form habitats of ecological importance and are not subject to specific assessment.

Faunal Use of the Application Site

8.3.9 A range of faunal surveys have been undertaken at the site, in particular in respect of bats, Badger, Great Crested Newt, reptiles and breeding birds. In addition, general

observations were made of any faunal use of the Application Site with particular attention paid to the potential presence of protected or notable species.

8.3.10 Full details of this survey work undertaken are included in the Baseline Ecological Assessment (**Appendix 8.1.**), whilst a summary of faunal species considered to be of particular relevance to the Application Site is set out in **Table 8.4**, below.

**Table 8.4: Summary and Evaluation of Faunal Species Present within the Application Site and Associated Surroundings**

Faunal Species	Description	Level of Importance
Bats (roosting)	A small number of trees adjacent to the Site boundaries have been identified as providing bat roosting potential. No evidence indicating the likely presence of any substantial bat roost has been recorded although it is possible that bats may utilise trees within the trees within the Application Site on at least an occasional or temporary basis.	Site (legislative importance only)
Bats (foraging and commuting)	The vast majority of bat foraging/commuting activity at the Application Site is represented by Common Pipistrelle and, to a lesser extent Noctule bats, with only very occasional use by other common species. The hedgerows within the Application Site (particularly the taller/more substantial northern boundary corridor, which was recorded to support raised levels of use by Common Pipistrelle and Noctule in relation to the remainder of the site) provide corridors and commuting routes for foraging / commuting bats across the site, whilst the pond provides a foraging resource for individual bats.	Site / Local
Badger	No Badger setts were recorded within the site during the general survey work undertaken, albeit a single main Badger sett is known to be present offsite close to the site boundary. No evidence of significant use or particular importance within the site was recorded, albeit given the known presence within the vicinity of the site it is likely that individuals frequent the Application Site, including for foraging from time to time, confirmed by the presence of latrines noted during previous surveys.	Site
Birds	The Site offers a limited range of opportunities for bird species, predominantly associated with the boundary hedgerows and vegetation, whilst the intensive management of the arable land is considered to limit any overall value of this habitat to bird species. Specific breeding bird survey work confirmed the Application Site to support a moderate assemblage of breeding birds typical of the agricultural/urban fringe setting, with the vast majority of breeding activity associated with the hedgerows and trees.	Local
Great Crested Newt	On the basis of the current survey information unlikely to be present. However, as stated within the Ecological Baseline Information (Appendix 8.1), due to the recent discovery of a further pond and previous access restrictions to offsite ponds, update survey work is programmed for spring 2019 in regard to this species. Accordingly, specific consideration is included in regard to this species in the event the update survey work should identify Great Crested Newt to be present within nearby offsite ponds.	N/A

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#### 8.4 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

- 8.4.1 This section sets out the potential significant effects of demolition / construction and completed development phase works on ecological receptors identified as being of ecological importance.
- 8.4.2 Receptors not considered to be of importance at the local level or above (of site importance only) are scoped out of this assessment, although consideration of mitigation and legislative requirements for protected species, if present, is given below.
- 8.4.3 Where mitigation by design is incorporated within (and therefore integral to the identified parameters of the Proposed Development), these are considered within the initial assessment, below. Where further mitigation measures are proposed (including 'mitigation by design' to be incorporated at the detailed design stage), these are considered later, at section 8.5.

#### **Construction**

- 8.4.4 The potential effects considered within this section are those relating to temporary factors arising from the construction process, such as construction site noise or dust production, and which will cease to apply following completion of the Proposed Development (referred to as 'Operational Phase'). Thus, loss of habitats through permanent land take for development is considered as an 'Operational Phase' effect, although the land take actually occurs during the construction phase of the Proposed Development.

#### Ecological Designations

##### *Bunsons Wood LWS*

- 8.4.5 Bunsons Wood LWS (Ancient Woodland) is located approximately 30m south of the site, beyond Thompsons Lane. Accordingly, the LWS is located entirely outside of the Application Site and will not be directly affected through land-take or other associated effects. In terms of drainage, run-off from the Application Site in the direction of Bunsons Wood is currently directed into a considerable ditch directing any flow east along Thompsons Lane (such that if any pollutants or other contaminant contained within run-off would not be anticipated to reach the LWS).
- 8.4.6 On this basis, construction effects on Bunsons Wood are therefore considered to be **negligible** and **non-significant**.

##### *Other Ecological Designations*

- 8.4.7 All statutory ecological designations are well-removed and separated from the Application Site, whilst the Application Site is not located within any identified Impact Risk Zones associated with ecological designations that are of relevance to the proposed development. Accordingly, no significant adverse effects on any statutory ecological designations are anticipated as a result of construction activities.
- 8.4.8 The site itself is not subject to any non-statutory nature conservation designations, whilst, with the exception of Bunsons Wood (see above) the nearest such designations are well-separated and removed from the site. Accordingly, no significant adverse effects on any non-statutory ecological designations are anticipated as a result of construction activities.

Habitats and Ecological FeaturesHedgerows and Trees

- 8.4.9 The Application Site contains a number of hedgerows, forming the existing field boundaries, along with mature trees. The majority of the hedgerows and trees will be retained under the proposals, albeit will be located in relatively close proximity to construction works. As such, these habitats are also at risk of root compaction or damage to vegetation from construction activities. On this basis, construction effects on hedgerows and trees prior to mitigation are considered to be **moderate, adverse** and **medium-term**, and could be **significant** at the local level (**probable**).

Pond

- 8.4.10 The existing pond will be retained under the proposals, along with the associated vegetation. Nonetheless, the pond could be subject to indirect effects such as dust deposition and surface run-off of contaminants or silt, whilst proposed drainage works across the site could also affect the pond. Such effects are considered to be only temporary in nature and are unlikely to result in any long-term deterioration in habitats, although could result in degradation in the short-term. As such, prior to mitigation, construction effects on pond are considered to be **moderate, adverse** and **medium-term**, and could be **significant** at the local level (**probable**).

FaunaBats (Roosting)

- 8.4.11 No evidence for any use of the Application Site by roosting bats has been recorded during the course of the survey work undertaken.
- 8.4.12 A small number of trees supporting bat roosting potential are located within the site, all of which form part of the retained vegetation under the proposed development. Nonetheless, any bat roosts that are present within retained trees could be affected by disturbance during the construction phase (notably lighting and noise).
- 8.4.13 As such, prior to mitigation, construction effects on roosting bats are considered to be **slight, adverse** and **medium-term**, and **non-significant (unlikely)**.

Bats (Foraging and Commuting)

- 8.4.14 Foraging and commuting bats could be affected during the construction phase by lighting of construction areas. However, such effects would only be for the duration of the construction phase, and the requirement for lighting during construction works is expected to be relatively minimal given the general restrictions and standard working hours (and particularly in view of the existing floodlighting associated with the offsite Rugby Club facilities located north of the Application Site). Further, the vast majority of the (very limited) bat activity recorded at the site is composed of species typically tolerant of lighting levels (e.g. Common Pipistrelle), which would therefore be less susceptible to any significant effect caused by temporary construction lighting, whilst lighting requirements would likely to be mostly during the winter months when bats would be hibernating/less active and therefore less likely to be using habitats present at the Application Site. Foraging and commuting bats could also be affected by noise disturbance, although again, this would be mostly during the day when foraging or commuting bats would be anticipated to be absent. Other construction effects such as airborne pollutants are unlikely to result in direct effects on foraging or commuting bats.

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- 8.4.15 Accordingly, prior to mitigation, construction effects on foraging and commuting bats are considered to largely relate to temporary increases in lighting levels, and would be **slight, adverse** and **short-term** and **non-significant (unlikely)**.

Badger

- 8.4.16 A single Badger sett is located close to the site boundary (albeit over 20m from the boundary at its closest point). The sett is located offsite, whilst incorporation of retained boundary vegetation and associated landscape buffers along the boundary in the closest location means that built development works should not encroach within the vicinity of this sett. As such existing Badger setts will remain unaffected by the construction works, based on the current situation.

- 8.4.17 Badger could be affected during the construction phase by construction site hazards such as open pits or chemical spills. Furthermore, disturbance to Badger could be experienced through the lighting of construction areas. However, such effects would only be for the duration of the construction phase, and the requirement for lighting during construction works is expected to be relatively minimal given normal construction working hours. Badger could also be affected by noise disturbance, although again, this would be mostly during the day when Badger would be absent from the Application Site. Other potential construction effects such as airborne pollutants are unlikely to result in a direct effect on Badger.

- 8.4.18 Accordingly, prior to mitigation, construction effects on Badger are considered to largely relate to construction site hazards and disturbances should individuals enter the site, and would be **slight, adverse** and **short-term** and **non-significant (probable)**.

Birds

- 8.4.19 Potential effects on bird species during the construction phase relate to potential for direct loss of active nests, resulting in a direct effect on local populations and also constituting a potential offence under the Wildlife and Countryside Act 1981 (as amended), which affords protection to wild birds and their eggs. In particular in this regard, small sections of hedgerow are to be removed under the Proposed Development (for instance to facilitate access ways through the site). Construction activities could also result in noise and visual disturbance to nesting birds in close proximity to construction areas, albeit these effects are anticipated to be highly localised.

- 8.4.20 On this basis, prior to mitigation, construction effects on birds are considered to be **slight-moderate, adverse** and **short-term** and could be **significant** at the **local level (probable)**.

Great Crested Newt

- 8.4.21 A single pond (P1) is present within the site, within which Great Crested Newt has consistently been recorded to be absent. A number of further offsite ponds are located within the vicinity of the site, which have potential to support this species. Previous survey work in 2010 and 2017 has identified no evidence for the presence of this species, albeit access restrictions and recent discovery of a further pond are such that further update surveys are proposed in 2019 to confirm the continued absence of this species. Accordingly, on the basis of the current information, no effects are anticipated as a result of the Proposed Development. Even should this species be present within the offsite ponds, the majority of the habitats present and to be affected (arable land) is unlikely to offer more than low value to this species,

whilst the key vegetation corridors (hedgerows and woodlands) within the site (including separating the internal areas from offsite ponds) will be retained.

- 8.4.22 Nonetheless, should the current position change such that Great Crested Newt is recorded to be present within the vicinity of the site, construction activities have the potential to harm wandering individuals and accordingly, prior to any mitigation construction effects on this species would be **slight, adverse** and **short-term** and could be **significant** at the **local level (extremely unlikely)**.

#### **Operation**

- 8.4.23 The potential effects considered within this section are those relating to the 'operational' phase of the Proposed Development. This includes the loss of habitats through permanent land take for built development, in addition to potential effects resulting from the operation of the Proposed Development such as recreational pressure, and noise and light disturbance.

#### Ecological Designations

##### Bunsons Wood LWS

- 8.4.24 Bunsons Wood LWS is located entirely outside of the Application Site boundary, approximately 30m south of the Site. Accordingly, the LWS is located outside of the site boundary, and will therefore not be subject to any direct land take, habitat loss or degradation, nor potential for encroachment, or dumping of garden waste from individual new dwellings, which will be further separated from the LWS/woodland by Thompsons Lane, retained vegetation and Green Infrastructure corridors.
- 8.4.25 The potential exists for new residents to access Bunsons Wood. No formal public access is available into Bunsons Wood itself, albeit existing public rights of way are present around the entirety of the woodland margin in the form of Thompsons Lane along the northern margin, with public footpaths associated with the eastern and southern boundaries of the woodland, whilst informal paths are present within the woodland. Accordingly, the potential exists for increased recreational effects on the woodland. However, the Application Site is allocated for development as part of the wider Keresley SUE, which considered the presence of Bunsons Wood, with key connectivity of the woodland habitats to wider Green Infrastructure within the SUE ensured (particularly as shown on the Keresley Indicative Masterplan drawing) and the provision of additional open space located west of the current Application Site within the wider SUE in particular linking with key public rights of way which will assist in drawing additional residential use away from the woodland.
- 8.4.26 On this basis effects on other ecological designations are therefore considered to be **moderate, adverse** and **long-term** (largely associated with potential for contaminated surface water runoff), and could be **significant (probable)** at the local level.

##### Other Ecological Designations

- 8.4.27 All statutory ecological designations are well-removed and separated from the Application Site, which is not located within any identified Impact Risk Zone associated with offsite designations that are of relevance to the proposals. Accordingly, no significant adverse effects on any statutory ecological designations are anticipated as a result of operational activities.
- 8.4.28 The site itself is not subject to any non-statutory nature conservation designations, whilst, with the exception of Bunsons Wood (see above) the nearest such

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designations are well-separated and removed from the site. Accordingly, no significant adverse effects on any non-statutory ecological designations are anticipated as a result of operational activities.

#### Habitats and Ecological Features

- 8.4.29 An assessment of operational effects on habitats considered to form important ecological features is set out below. This largely relates to permanent habitat loss, together with anthropogenic effects such as damage to vegetation from recreational disturbance and pollution. Potential effects such as noise and lighting and disturbance from areas of built development are considered below in relation to faunal species.
- 8.4.30 Consideration of ecological impacts on habitats within the Warwickshire, Coventry and Solihull sub-region (within which the site is located) includes reference to the biodiversity offsetting metric 'BIA' spreadsheet tool produced by Warwickshire County Council. As such, consideration of the proposals in regard to this tool is set out at **Appendix 8.2** in regard to both habitats and linear features. Consideration of the indicative masterplan using the BIA tool shows an overall small negative 'score' in respect of the proposals for habitats, albeit this results entirely from the loss of low distinctiveness habitats which are therefore of no more than low ecological value. Accordingly, on the basis of the assessment, in regard to general habitat considerations, potential adverse effects are considered to be **slight, adverse and long-term**, and **non-significant** at the local level (**near-certain**).

#### Hedgerows and Trees

- 8.4.31 The field boundary hedgerows, along with the existing mature trees at the Application Site will be largely retained within proposed landscape buffers as part of the proposed development, although some losses will be required under the proposed development, in particular including removal of small sections of hedgerow to accommodate access through the individual parcels of the Application Site. The anticipated losses in relation to hedgerows and trees will comprise a very small proportion of the total extent of these habitats at the Application Site.
- 8.4.32 Retained hedgerows and trees may also be subject to damage to vegetation from recreational activities and fly tipping, whilst the location of some gardens adjacent to hedgerows has the potential to lead to garden encroachment, light pollution and other associated disturbances.
- 8.4.33 As such, potential adverse effects on hedgerows in the absence of mitigation are considered to be **slight, adverse and long-term**, and **non-significant** at the local level (**certain/near certain**).

#### Pond

- 8.4.34 As detailed above in relation to construction effects, the existing pond will be retained under the proposals, along with the associated vegetation. During the operational phase, the ditch network and offsite pond are at potential risk of polluted surface water runoff (e.g. oil residues from vehicles or household chemicals), which could cause habitat degradation.
- 8.4.35 As such, prior to mitigation, operational effects on the pond are therefore considered to be **slight, adverse and long-term** (largely associated with potential for contaminated surface water runoff), and could be **significant** at the local level (**probable**).

FaunaBats (Roosting)

- 8.4.36 Trees identified to offer potential opportunities for use by roosting bats are located entirely within proposed landscape buffers and retained vegetation, such that they can be retained under the Proposed Development.
- 8.4.37 Potential roosting habitats within and adjacent to the Site may also be at risk of some disturbance (should bats be present) due to the built development, notably from lighting and increased noise, whilst bat roosts could also be at risk from cat predation. Therefore, operational effects on roosting bats (should they be present) are considered to be **slight, adverse** and **long-term** and **significant (probable)**.

Bats (Foraging and Commuting)

- 8.4.38 The Application Site has been recorded to support no more than very low levels of foraging and commuting use by common bats, dominated by species commonly associated with developed areas and typically tolerant of increased lighting levels.
- 8.4.39 Whilst large areas of habitat are to be affected by the Proposed Development, this largely comprises arable land, which is of low value to foraging and commuting bats, whilst a network of proposed green infrastructure corridors will be retained through and around the built development (focussed on the existing hedgerow corridors) and considerable new habitats will be created and enhanced, forming substantial corridors through the Application Site. Losses of habitat of value to foraging and commuting bats is largely restricted to losses of small sections of hedgerows to allow for road accesses, and such losses are not considered to significantly affect bats given the vast majority of hedgerows will be retained, maintaining their linear connectivity (in particular including the northern boundary corridor). However, bat species could be affected by disturbance associated with the Proposed Development, notably as a result of light spill into areas used by foraging and commuting bats.
- 8.4.40 With regard to lighting in particular, effects vary between species, with some bat species such as Common Pipistrelle and Soprano Pipistrelle able to cope with relatively high light levels (of up to 14 lux) (Fure, 2006)<sup>6</sup> and known to utilise lights as a foraging focus for insects attracted to lights (BCT and ILE, 2009)<sup>7</sup>. However, many bat species (particularly late emerging species such as Brown Long-eared and *Myotis* bats) will avoid lit areas, and attraction of insects to lit areas can result in adjacent habitats supporting reduced numbers of insects, further impacting on the ability of bats being able to feed.
- 8.4.41 However, the vast majority of bats recorded during the survey work were Common Pipistrelle bats, which is relatively tolerant of higher light levels. Indeed, Pipistrelle bats are known to forage around lighting, preying on insects attracted to the lights. As such, this species is likely to continue using habitats at the Application Site. Light-shy species such as *Myotis* sp. and Brown Long-eared bat were recorded infrequently at best within the Application Site suggesting no more than irregular use. As such, increased light levels are not considered to significantly affect these species groups.
- 8.4.42 Bats may also be at risk of traffic collisions where roads are located across commuting routes, although given roads will be subject to speed restrictions due to the urban setting and are unlikely to be subject to high levels of use at night, any risk of

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<sup>6</sup> Fure, A. (2006); 'Bats and lighting', The London Naturalist, 85, 1-20.

<sup>7</sup> BCT and Institution of Lighting Engineers (2009); 'Bats and Lighting in the UK', BCT and Institution of Lighting Engineers.

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increased traffic collisions would be negligible as a result of the Proposed Development.

- 8.4.43 Overall therefore, largely as a result of potential for lighting to disrupt activity, effects on foraging and commuting bats from the completed development prior to mitigation are considered to be **slight, adverse and long-term**, and **significant (probable)**.

#### Badger

- 8.4.44 No Badger setts have been recorded within the Application Site itself, albeit Badger is known to be present within the local vicinity (with evidence for individuals wandering across the site in the form of latrines), including focused on an existing sett located close to the site boundary. All identified setts are located outside of the Application Site, whilst provision of a substantial landscape buffer along the closest boundary will maintain linkage and open space (and indeed likely provide enhanced foraging opportunities in the long term). The Proposed Development will result in a loss of potential foraging habitat, although the intensively managed arable nature of the majority of the site is such that the internal areas are unlikely to provide more than an occasional transient resource for Badger dependent on the cropping stage. Furthermore, this species is known to frequently use urban areas, whilst new landscaped areas will likely provide additional foraging opportunities of greater potential for use by Badger.

- 8.4.45 Badger may also be at risk of traffic collisions where roads are located across commuting routes, although given roads will be subject to speed restrictions due to the urban setting and are unlikely to be subject to high levels of use at night, the risk of traffic collisions is relatively minimal, whilst the offsite activity is centred west of the site, such that new roads and development is unlikely to sever any existing or future commuting routes to more open habitats within the wider countryside to the north and west.

- 8.4.46 As such, effects on Badger from the completed development prior to mitigation are considered to be **slight, adverse and long-term**, and non-significant (**probable**).

#### Birds

- 8.4.47 The Proposed Development will result in the permanent loss of arable land, which will result in a reduction of potential nesting habitat for ground nesting birds. However, intensive farming of the existing arable field (notably sowing of winter cereals, including as recorded during January 2019) will limit its suitability for such species, such that loss of the arable habitat is not considered to be of significance to the local population.

- 8.4.48 Other bird species recorded are largely associated with hedgerows or adjacent gardens. These will experience only minimal habitat losses, with hedgerow removal being restricted to two sections for road access. Indeed, common garden species (which comprise the majority of birds recorded at the site) such as Blue Tit *Cyanistes caeruleus*, Robin *Erithacus rubecula*, Blackbird *Turdus merula* and Wren *Troglodytes troglodytes*, will likely benefit from new habitats provided by gardens as they establish, and supplementary feeding by residents.

- 8.4.49 In addition to the habitat changes discussed above, birds may also be affected by cat predation, disturbance associated with recreational use and residential areas, and increased risk of road traffic accidents (albeit, as set out above, this is less likely given the low traffic speeds which will be in place). Some bird species may also be affected by light-spill from roads and areas of built development. However, new habitat opportunities associated with gardens and other open space under the

Proposed Development are considered to offset such effects for the majority of species.

- 8.4.50 Accordingly, prior to mitigation, effects on Skylark from the completed development are considered to be **slight, adverse** and **long-term**, and **non-significant (probable)**.

#### Great Crested Newt

- 8.4.51 On the basis of the current information, it is unlikely that Great Crested Newt is present within the site, albeit in line with the above considerations and information within the Baseline Ecological Assessment (**Appendix 8.2**), further updated confirmation of this position is programmed for the appropriate season in 2019.

- 8.4.52 Under the Proposed Development, the majority of the boundary vegetation (including trees and hedgerows), along with pond P1 and the woodland areas at the site will be retained such that they will continue to provide suitable opportunities should this species colonise the site. Further the inclusion of new natural green space (including new wetland features and permanent native planting) replacing the existing arable land use will provide additional opportunities for this species should it be present within nearby offsite areas or colonise in the future (albeit the extent of any potential will likely dependent on the ongoing management regime).

- 8.4.53 Accordingly, in the unlikely event this species is confirmed to be present during the updated survey work (or should colonise in the future), operational effects on Great Crested Newt are considered to be **slight, positive** and **long-term** and **non-significant (extremely unlikely)**.

## 8.5 MITIGATION, ENHANCEMENT AND RESIDUAL EFFECTS

### Mitigation by Design

- 8.5.1 The development proposals for the Application Site have been developed following an iterative process of design, with a number of mitigation measures incorporated as part of the Proposed Development parameters, which have therefore been considered as part of the above assessment (section 8.4). Further 'mitigation by design' would be incorporated during the detailed design process, albeit does not form an integral part of the Proposed Development parameters and accordingly is considered below and has not been considered within the above assessment. Particular measures incorporated within the parameters design (and therefore considered above) in relation to ecology include the following, which therefore relate to the identified operational effects as a result of the Proposed Development:

- Retention of the majority of boundary hedgerows and associated boundary vegetation within landscape buffers along the margins and through the site;
- Retention of the existing pond and associated wooded vegetation within the proposed Green Infrastructure;
- Creation of substantial areas of natural green space (measuring approximately 1.98ha) forming connected corridors through the site (and further linking with offsite Green Infrastructure within the wider Keresley SUE and beyond), in particular including new wetland features as part of the SUDs design, along with additional native tree and hedgerow planting and grassland areas;

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#### Additional Mitigation

##### Ecological Designations

- 8.5.2 No significant effects of construction activities on ecological designations are anticipated and as such no mitigation is required in respect of ecological designations.
- 8.5.3 Design of new open space and public rights of way through the Application Site, will be undertaken to ensure suitable linkages and functional connection with the wider Green Infrastructure provision as part of the wider Keresley SUE, which will provide alternative accessible space to draw new visitors away from potentially more sensitive woodland habitats (i.e. Bunsons Wood LWS), additional measures could also include information to new householders highlighting the sensitivity of the woodland habitats and encouraging considerate use. Such measures would be in line with the wider Keresley SUE.

##### Ecological Habitats

- 8.5.4 Consideration of the proposed indicative masterplan in relation to WCCs BIA tool (as included at **Appendix 8.2**) indicates that the Proposed Development will result in calculated small net reduction in 'Biodiversity Value' in regard to habitats based on the specific method of calculation used within the BIA tool (albeit based entirely on the removal of habitats of low ecological value). Nonetheless, in order to accord with standard policy and planning requirements in regard to the calculated BIA 'score', additional compensation would be anticipated in the form of offsite habitat provision/enhancements (offsetting), for instance provided via financial contribution to WCC in line with the calculations set out within the BIA tool.
- 8.5.5 Additional mitigation measures in regard to ecological habitats include standard construction safeguards and working measures, such as damping down potential dust sources and tree and hedgerow protection measures, including temporary protective fencing where appropriate, which would be undertaken as part of the proposed construction works and could be suitably ensured through the use of a CEMP or similar.
- 8.5.6 Retained habitats will not be used for parking of construction machinery or storage of construction materials or chemicals, all of which would be well removed from the retained hedgerow corridors, trees and the pond in particular. Further, the proposals include new residential gardens and considerable open space areas/green infrastructure, which will provide considerable additional vegetative habitats. In particular, new boundary vegetation/natural greenspace areas will incorporate native tree and shrub species, along with SUDS features such as swales and waterbodies along with new wildflower grassland areas.
- 8.5.7 A SUDs scheme will be implemented to manage run-off from built development areas, comprising a network of swales, soakaways, infiltration trenches and balancing ponds. Further detail is provided at Chapter 11. Further, in order to mitigate potential hydrological effects on habitats and ecological features (and designations) pollution control measures including appropriate petrol interceptor installed at the downstream end of the drainage networks will be used to minimise the risk of polluted surface water runoff entering watercourses or wetland features. Attenuation areas are also proposed to control surface water runoff rates to the required rates and to attenuate pollutants prior to discharge into the wider surface water network. These areas will provide additional valuable ecological habitats as part of the green infrastructure provision.

8.5.8 Anthropogenic effects such as informal garden extensions and dumping of garden waste will be reduced through the careful design of the layout of built development areas, with use of hard edges (such as footpaths or roads) to define the boundaries of green space areas wherever possible, or facing out of houses onto green space areas so that they are overlooked and promoted as a focal point (designed in at the reserved matters/detailed design stage). Green space areas will also be subject to long-term management, allowing for remedial action or alleviation of any problems.

#### Faunal species

##### Bats

8.5.9 On the basis of the current indicative masterplan and parameters plans, no direct effects on potential bat roosting features are anticipated. Should it prove necessary at the detailed design or reserved matters stage, or for arboricultural or health and safety reasons for works to affect trees with identified potential to support roosting bats, such works will only be undertaken following inspection/survey by appropriately qualified and experienced ecologists. Should any roosts be identified at this time, a European Protected Species licence may need to be sought from Natural England.

8.5.10 To mitigate identified potential effects on bats during the construction phase, temporary lighting will be minimised, wherever possible. Where required for health and safety, security or other reasons, it will be positioned so as to minimise light spill on to features identified as being of value to bats, such as hedgerows and trees, as well as the pond and associated vegetation. Disturbance from noise would be minimised by the adoption of good working practice.

8.5.11 Temporary lighting of the construction site may be required for a number of reasons, including for health and safety and site security considerations. To reduce the potential effects of any lighting that is required, lighting will be positioned and directed so as to minimise light spill on to features such as hedgerows, trees and ponds (including offsite areas) which are of potential value to bats. The amount of lighting used overall will be restricted, whilst where possible, any works will be minimised during periods of darkness when bats might be expected to be active.

8.5.12 As discussed in relation to construction and operational effects above, effects of lighting on bats is variable, with *Pipistrellus* sp. (which make up the vast majority of bats recorded at the site) likely being relatively tolerant of higher light levels, with indeed individuals potentially benefiting from the foraging opportunities provided by attraction of insects to lights. Nevertheless, a detailed lighting design for the Proposed Development (or any individual phases) will be prepared at the detailed design stage incorporating measures to reduce the effects of lighting on bats across the site. Measures and considerations taken into account during lighting design should include:

- Avoidance of lighting where possible within green infrastructure areas and areas adjacent to vegetated boundary corridors, namely hedgerows and watercourse corridor, along with similar offsite habitats;
- Where lighting is necessary adjacent to these areas, this will ideally comprise low-level bollard lighting where possible to minimise light spill into the adjacent green space areas;
- Use of additional design measures where required, such as louvres, shields or hoods, to control light spill;
- Careful selection of luminaries and their location in relation to sensitive habitats to minimise light spill; and
- Use of low-pressure sodium lights where appropriate as these have a low attraction to insects and are therefore less likely to disrupt bat activity.

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8.5.13 In addition, the location and orientation of buildings, the proposed landscape treatment and the retention and enhancement of the existing vegetation within the Application Site will further act as secondary mitigation to screen and soften the effects of installed artificial light sources. Where necessary, further shrub and tree planting will be provided to create screening against lighting from roads and residential areas. Overall, such measures will maintain suitable areas/corridors of habitat for bats, including light-sensitive species such as *Myotis* sp.

#### Badger

8.5.14 Any works affecting, or within the near vicinity of any Badger setts may require licensing from Natural England and would need to be subject to a detailed mitigation strategy submitted following the grant of full planning permission. Nonetheless, no Badger setts have been recorded within the site, whilst the offsite setts are sufficiently removed so as to remain unaffected.

8.5.15 Given the identified presence of Badgers within the vicinity of the site, a range of general construction site safeguards for Badger will be followed during the construction process including:

- Badgers are a highly mobile species which readily open new setts and vary use of foraging areas, such that, in the intervening period prior to construction works, the potential exists for the use of the site to change. As such, update Badger survey work will be undertaken prior to the commencement of construction works, in order to confirm any levels of use of the affected areas at that time and to determine any new Badger activity or setts that may have arisen within the Application Site in the intervening period since the survey work reported within this document. Should any newly created setts be recorded or additional Badger activity be present within the construction areas, licensing may be required in order to close or disturb any relevant new setts to facilitate works (dependent on the situation recorded), with appropriate mitigation put in place as required. Should a new Badger sett be created outside of the construction zone (i.e. over 20m from any active construction works), the sett will be retained and safeguarded during construction and a method statement drawn up for the works as appropriate.
- All contractors will be briefed as to the possible presence of Badgers within the Site, with particular reference to the implications of legislation and licensing;
- Any trenches or deep pits within the Site that are to be left open overnight will be provided with a means of escape should a Badger enter. This could simply be in the form of a roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water;
- Any trenches/pits will be inspected each morning to ensure no Badgers have become trapped overnight. Should a Badger become trapped in a trench it will likely attempt to dig itself into the side of the trench, forming a temporary sett. Should a trapped Badger be encountered a suitably qualified ecologist will be contacted immediately for further advice;
- The storage of topsoil or other 'soft' building materials in the Site will be given careful consideration. Badgers will readily adopt such mounds as setts. So as to avoid the adoption of any mounds, these will be kept to a minimum and any essential mounds subject to daily inspections (or nightly patrols if 24 hour security is present at the site) with consideration given to temporarily fencing any such mounds to exclude Badgers;
- The storage of any chemicals at the Site will be contained in such a way that they cannot be accessed or knocked over by any roaming Badgers;

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- Fires will only be lit in secure compounds away from areas of Badger activity and not allowed to remain lit during the night;
- Food and litter will not be left within the working area overnight.

8.5.16 The provision of new landscape planting within the substantial new open space areas, including new native shrub planting, SUDs and boundary features will provide mitigation for habitat losses, along with the opportunity for enhancement measures for Badger in the long term.

#### Birds

8.5.17 To avoid an offence under the Wildlife and Countryside Act 1981 (as amended) in this regard, the potential loss of active nests during construction will be avoided by either undertaking clearance of potential bird nesting habitat outside of the bird nesting season (March to August inclusive) or, if necessary, preceding any clearance with an inspection by a suitably qualified ecologist. Any nests identified will be cordoned off and protected until they cease to be active. Disturbance from noise will be minimised by the adoption of good working practice, such as restricted hours of working and noise-reducing construction measures.

#### Great Crested Newt

8.5.18 In the unlikely event that update/confirmatory eDNA surveys during spring 2019 identify the presence of Great Crested Newt within offsite ponds (contrary to the previously recorded position), licensing may be required from Natural England for works to suitable terrestrial habitats within 250m of relevant ponds, which would need to be obtained following grant of full planning permission and subject to detailed mitigation measures. Such measures would include protection of retained boundary vegetation and associated buffers and suitable detailed design of new habitats and SUDs features, replacing existing arable land.

#### Mitigation Summary

8.5.19 A summary of the proposed mitigation measures is set out below at **Table 8.5**.

**Table 8.5: Summary of Mitigation Measures**

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By S.106	By Condition
1	Retention and protection of existing hedgerows, pond and associated vegetation with Green Infrastructure parameters	X		
2	Design of layouts at the detailed stage to ensure continued retention of valuable habitats (pond, hedgerows and trees) and incorporate linked corridors of open space, including new wildlife planting and associated ecological design of SUDs features and open space to mitigate for losses.	X		X
3	Implementation of construction safeguards and working practices to ensure protection of habitats and faunal species (in particular Badger, bats, reptiles, amphibians and birds)			X

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4	Lighting design to ensure dark areas and corridors for bats in combination with planting schemes.	X		X
5	Mitigation in respect of Badger, including: update survey checks prior to commencement of construction, construction safeguards and new landscape (foraging habitat) provision (licensing to be sought from Natural England if appropriate should any new setts be identified and affected by works)	X		X
6	In the unlikely event that update survey during 2019 identifies the presence of Great Crested newt within offsite ponds, precautionary mitigation measures including: construction safeguards, detailed design of new landscape (foraging habitat) provision (licensing to be sought from Natural England if required)	X		X
7	Safeguards (e.g. timing of clearance works) in regard to nesting birds during site clearance works.			X

**Enhancements**

8.5.20 In addition to the above mitigation measures and design, a number of ecological enhancement measures will be incorporated into the Proposed Development, including the measures summarised below, which will result in additional opportunities and benefits for faunal species at the site.

**Bats**

8.5.21 New roosting opportunities will be provided and enable an overall net increase in available roosting habitat at the site in the long term, representing an enhancement measure. This could include the provision of bat boxes, tiles and roosting units on new buildings and/or erection of bat boxes on trees throughout the site.

8.5.22 The habitat creation and enhancement measures outlined above should provide substantial benefits to foraging and commuting bats. Notably, provision of natural and semi-natural greenspace, including SUDs features/corridors and new native planting should enhance the value of this area as foraging habitat.

**Birds**

8.5.23 The habitat creation and enhancement measures outlined above will provide habitats for a range of bird species. In addition, new nesting opportunities will be created through the provision of nest boxes across the site. This will include features such as Sparrow terraces and Swift cups/bricks on new buildings and nest boxes erected on trees, the precise nature and locations of which will be determined at the detailed design stage once proposed building layouts and details are worked up.

8.5.24 Features such as nest boxes, terraces and nesting bricks on new buildings will provide suitable nesting habitat for such species, and residential gardens, together with other habitats in areas of green space, will provide large areas of foraging habitat.

8.5.25 Further, new planting within green infrastructure provision in particular, but also including new gardens and other vegetated areas, is likely to benefit a range of bird

species, including UK BAP species. Erection of nest boxes on existing trees within areas of green space will also provide nesting opportunities for a range of hole nesting birds.

### **Residual Effects**

- 8.5.26 Following implementation of the mitigation and enhancement measures set out above, all adverse construction and operational effects of the Proposed Development on ecological receptors are considered to be reduced to non-significant levels, whilst a number of positive effects have been identified in regard to individual ecological receptors.

## **8.6 CUMULATIVE AND IN-COMBINATION EFFECTS**

- 8.6.1 Offsite developments present within the vicinity of the application site of relevance to the Proposed Development are identified at Chapter 2 and were previously identified within the submitted Scoping Report.

### Habitats

- 8.6.2 On the basis of the above consideration and parameters plan, physical disturbance events during construction works, along with operational considerations such as drainage will be contained within the site boundary, whilst the proposals will not result in any significant direct effects (positive or negative) on any offsite ecological habitats or features. As such, there is no significant potential for the proposals to combine with the adjacent offsite schemes to result in any cumulative effects in regard to such features over and above the individual effects identified for the schemes.

- 8.6.3 As set out above, the proposals will incorporate areas of open space and Green Infrastructure, which would likely support a greater range and variety of species than the current arable land that dominates the site, whilst the existing habitats of greater value (pond, hedgerows and trees) will be largely retained and will combine with the Green Infrastructure corridors and provision within the wider surroundings (including in combination with other forthcoming developments within the Keresley SUE) to result in likely positive effects.

### Fauna

- 8.6.4 On the basis of the current information, as set out above following the provision of suitable mitigation and enhancement measures detailed, the proposals are unlikely to result in any significant adverse effects on any protected, rare or notable faunal species. Further, the proposals do not rely on the displacement of faunal species into offsite areas (indeed in line with the above consideration, the Proposed Development would appear to result in overall positive likely significant effects in respect of faunal species, albeit the sphere of influence would likely be largely limited to the site boundaries in this regard). Accordingly, there does not appear to be significant potential for faunal effects to combine with any other proposals to result in significant cumulative effects.

### Overall

Given the nature of the proposals and the anticipated overall likely significant effects (as set out above) following the implementation of the mitigation and enhancement measures set out, the proposals are unlikely to combine with offsite proposals to result in any significant adverse ecological effect.

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8.6.5 Accordingly, no significant adverse cumulative or in-combination effects are anticipated with offsite development schemes.

#### **8.7 SUMMARY**

##### **Introduction**

8.7.1 This chapter of the ES assesses the likely significant effects of the Proposed Development in terms of ecology and nature conservation.

##### **Baseline Conditions**

8.7.2 Ecological surveys of the Application Site have been undertaken, including a desk study, an extended Phase 1 Habitat survey and a range of Phase 2 faunal surveys.

8.7.3 No ecological designations are present within the Application Site, whilst all such identified sites are sufficiently separated from the Application Site such that the Proposed Development will not result in any significant effects on ecological designations.

8.7.4 The Application Site is dominated by arable land of negligible ecological value, albeit boundary hedgerows, trees and a single pond along with associated vegetation provide some ecological value at the local level. Evidence for the presence of the protected species Badger and nesting birds was recorded during the survey work undertaken, along with evidence of limited use by foraging and commuting bats.

8.7.5 The Application Site has been considered in relation to WCCs BIA tool, including in relation to the resultant effects of the Proposed Development.

##### **Likely Significant Effects**

8.7.6 A range of likely ecological effects have been identified in respect of habitats and faunal species, albeit in general these are considered to non-significant, albeit the Proposed Development (construction and operation) could result in a small number of significant effects in the absence of mitigation. Other (non-significant) negative effects are centred on the potential for the proposals to result in adverse effects on nesting birds and other faunal species (particularly Badger should these be present or enter the site) in the absence of mitigation.

##### **Mitigation and Enhancement**

8.7.7 Where appropriate, ecological mitigation measures and considerations have been designed in to the scheme and accordingly, form the basis for the parameters scheme which has been assessed prior to further mitigation (above).

8.7.8 Additional 'mitigation by design' will be incorporated at the detailed design stage, which does not, therefore form part of the current parameters and is included within the consideration of mitigation and enhancement measures above. Further measures including appropriate working methods and protection measures are identified to mitigate potential effects during the construction phase. Mitigation for any minor loss of boundary habitats and hedgerows will be provided through substantial new habitat creation within open space/green infrastructure areas (including SUDs features), whilst faunal measures and enhancements relating to Badger, bats and birds in particular are proposed in order to mitigate any residual effects identified and provide enhancement measures at the site. Opportunities for enhancements to biodiversity are also proposed, in accordance with NPPF, the NERC Act 2006 and local policy.

Proposed enhancements will also deliver significant benefits in terms of green infrastructure, providing an extensive network of green links and corridors through and around the Application Site and linking with surrounding Green Infrastructure corridors, including within and beyond the wider Keresley SUE.

#### **Conclusion**

- 8.7.9 Overall, the habitats and faunal use recorded at the application site is considered to be of generally low ecological value. Following mitigation, it is considered that the Proposed Development complies with planning policy and would result in an overall gain in the existing ecological interest supported by the Application Site, with particular benefits in respect of habitats, bats, Badger and birds. Together, these gains are considered to result in an overall beneficial effect of moderate magnitude, which is likely to be significant at the local level.
- 8.7.10 **Table 8.6** provides a summary of effects, mitigation and residual effects of the Proposed Development in relation to ecological receptors.

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**Table 8.6: Summary of Effects, Mitigation and Residual Effects.**

<b>Receptor / Receiving Environment</b>	<b>Description of Effect</b>	<b>Nature of Effect</b>	<b>Geographical Importance</b>	<b>Duration</b>	<b>Certainty</b>	<b>Magnitude and Significance</b>	<b>Mitigation / Enhancement Measures</b>	<b>Residual Effects</b>
<b>Construction</b>								
Ecological Designations	Negligible	N/A	N/A	N/A	N/A	N/A	N/A	Negligible
Habitats – Pond, Hedgerows, Trees and associated vegetation	Disturbance/ damage to retained habitats	Adverse	Local	Medium-term	Probable	Moderate, Significant	General construction safeguards, protective fencing and detailed design	None
Fauna – Bats (roosting)	Potential injury/ disturbance/ damage to roosts (no evidence of current use)	Adverse	Local	Medium-term	Unlikely	Slight, Non-significant	Detailed design to incorporate retention and protection of mature trees where possible. Precautionary approach to felling.	Negligible and non-significant
Fauna – Bats (foraging/commuting)	Disturbance, particularly through temporary construction lighting.	Adverse	Local	Short-term	Unlikely	Slight, Non-significant	Construction works to minimise use of lighting/night works and lighting design/use to be minimised and directed accordingly.	Negligible and non-significant
Fauna – Badger	Loss of foraging habitats, disturbance (e.g. noise, lighting from construction activities).	Adverse	Local	Short-term	Probable	Slight, Non-significant	Construction safeguards, including working practices, minimising use of lighting/night works.	Negligible and non-significant

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Fauna - Birds	Loss/ replacement of habitats, increased disturbance during construction works	Adverse	Local	Short-term	Probable	Slight- Moderate, Significant	Suitable timing of vegetation clearance; nesting bird surveys/checks prior to any clearance within nesting season and protection of identified nests.	Negligible and non- significant
Fauna – Great Crested Newt	Based on current information likely absent such that no effects anticipated. However should update surveys confirm presence, potential for harm to individual wandering individuals and minor disturbance/loss of terrestrial habitats.	Adverse	Local	Short-term	Extremely Unlikely	Slight, Non- significant	If present/ required, construction safeguards (under licence if required).	Negligible and non- significant
Ecological Designations – Bunsons Wood LWS	Additional recreational use and associated effects	Adverse	Local	Long-term	Probable	Moderate, Significant	Suitable design of GI, including linkages with wider offsite GI within the Keresley SUE and beyond, additional measures including information to householders.	Negligible and non- significant
Ecological Designations - other	None	N/A	N/A	N/A	N/A	N/A	N/A	None

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Habitats – General habitats; Hedgerows, Trees and associated vegetation	Loss of habitats (particularly short sections of hedgerow and trees)/ replacement with Proposed Development (including open space/green infrastructure)	Adverse	Local	Long-term	Certain / near certain	Slight, non-significant	Provision and ongoing management of substantial new ecological habitats as part of open space/green infrastructure including SUDs features and trees/scrub. Specifications to be confirmed at the detailed design stage.	Negligible and non-significant
Habitats - pond	Potential for pollution, disturbance or degradation	Adverse	Local	Long-term	Probable	Slight, significant	Provision and ongoing management of substantial new ecological habitats as part of open space/green infrastructure including drainage/SUDs features. Specifications to be confirmed at the detailed design stage.	Positive/ Negligible and non-significant
Fauna – Bats (roosting)	Permanent loss of roosts - trees (no evidence of current use), disturbance and/or cat predation	Adverse	Local	Long-term	Probable	Slight, significant	Retention of mature trees within wider green infrastructure and inclusion of additional planting, new roosting provision (e.g. bat boxes) and suitable lighting design.	Positive/ Negligible and non-significant
Fauna – Bats (foraging/com muting)	Disturbance, particularly through new lighting, loss of habitats (in	Adverse	Local	Long-term	Probable	Slight, significant	Detailed lighting design and planting schemes to provide dark corridors and areas within open	Positive/ Negligible and non-significant

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	particular navigational corridors)						space. New habitat features to include substantial planting including hedgerows, SUDs corridors and additional features.	
Fauna – Badger	Loss of foraging habitats, disturbance (e.g. noise, lighting and recreational activity).	Adverse	Local	Long-term	Probable	Slight, non-significant	New habitat features to include substantial planting including hedgerows, SUDs corridors and additional features to be developed at the detailed design stage to ensure continued habitats and connectivity for Badger. Detailed lighting design and planting schemes to provide dark and sheltered corridors and areas within open space.	Positive/ Negligible and non-significant
Fauna - Birds	Loss/ replacement of habitats, increased disturbance and cat predation	Adverse	Local	Long-term	Probable	Slight, non-significant	New nesting opportunities to be provided in the form of nest boxes; new habitat opportunities including trees / scrub designed to include native species and habitats (detailed design stage) to increase foraging and nesting opportunities	Positive/ Negligible and non-significant

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Fauna – Great Crested Newt	Based on current information likely absent such that no effects anticipated. However should update surveys confirm presence, potential for increase terrestrial and new aquatic habitats.	Positive	Local	Long-term	Extremely unlikely	Slight, non-significant	N/A	Positive non-significant
<b>Cumulative and In-combination</b>								
None	None	N/A	N/A	N/A	N/A	N/A	N/A	None