Brindle &Green

Ecological Impact Assessment

Bowbridge Garage, Derby

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December 2025

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1 Summary

1.1 Ecological Impact Assessment Contents

1.1.1 The production of an Ecological Impact Assessment (EcIA) is considered the best practice methodology (by the Chartered Institute of Ecology and Environmental Management (CIEEM)) for documenting all ecological issues associated with proposed development and supersedes the more out of date method of preparing individual reports for differing species and habitats. The aim is to consider any impacts alongside each other, to provide a coordinated solution when considering mitigation, and to set out clear and well-defined enhancement prescriptions that work in line with the plans for development. Through assessing the scale of impact (Page 25) the aim is to result in a scheme that is assessed as making a positive contribution to biodiversity at a local level at the very least.

1.1.2 This EcIA draws on the results of the Preliminary Ecological Appraisal (PEA) undertaken and reported upon previously by Brindle and Green (June, 2025) and adds the results of additional protected species and/or habitat surveys that have been completed since. In the case of this site, the PEA identified habitats suitable for supporting roosting bats, foraging and commuting bats, reptiles, badgers (*Meles meles*), otter (*Lutra lutra*), water vole (*Arvicola amphibius*) and white-clawed crayfish (*Austropotamobius pallipes*), as well as considering the usual impacts associated with other species of principle importance listed under section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.

1.1.3 Further protected species surveys undertaken during the active season of 2025 failed to identify the presence of roosting bats, reptiles, badger, otter, water vole and white-clawed crayfish within the application boundary and zone of influence.

1.1.4 The activity levels during the walked transect surveys were considered to be low pertaining to passes of a maximum of four individuals relating to common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), and Myotis sp. (*Moyotis sp.*).

1.1.5 However, for the ecological receptors that could be assessed, Reasonable Avoidance Measures (RAMS) are recommended for breeding birds, foraging and commuting bats and badgers.

1.1.6 This report was compiled following the revised Guidelines for EcIA in the UK and Ireland (CIEEM, 2018) and highlights and addresses the following ecological constraints as shown in Table 1 overleaf.

Table 1: Summary of ecological constraint assessment for Bowbridge Garage and proposed mitigation

Ecological constraint	Value	Effect	Significance prior to mitigation	Mitigation / precautionary measures	Significance of residual effect	Securing mitigation
Habitat	Local	Loss of modified grassland, broadleaved woodland, and bramble scrub and scattered trees.	Negative (Not Significant)	Loss of woodland, modified grassland and scattered trees to be offset through habitat creation to higher distinctiveness/ condition secured with Habitat Monitoring and Management Plan (HMMP). The remaining shortfall will be secured by purchasing credits.	Positive (Not Significant)	Mitigation secured through planning condition including Biodiversity Net Gain and a HMMP.
Breeding Birds	Local	Disturbance / Injury to individuals Loss of breeding habitat	Likely Negative (Not Significant)	Pre works check/demolition of buildings and clearance of vegetation outside of breeding season.	Neutral (Not Significant)	Mitigation / precautionary measures secured through planning condition
Roosting Bats	Local	Disturbance / loss of roosting habitat	Likely Negative (Significant)	Sensitive lighting scheme	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
Foraging and Commuting Bats	Local	Disturbance / loss of foraging and commuting habitat	Likely Negative (Not Significant)	Sensitive lighting scheme	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition

Ecological constraint	Value	Effect	Significance prior to mitigation	Mitigation / precautionary measures	Significance of residual effect	Securing mitigation
Amphibians	Site	Disturbance / Injury to individuals during clearance works Habitat loss	Unlikely Negative (Not Significant)	Reasonable Avoidance Measures (RAMs)	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
Reptiles	Local	Disturbance/injury to individuals Loss of suitable foraging and commuting habitat.	Unlikely negative (Not significant)	RAMS	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition.
Badger	Local	Injury to individual	Certain Negative (Not Significant)	Pre-works walkover assessment Reasonable Avoidance Measures (RAMs)	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
Otter	Local	Disturbance / injury to individuals	Negative (Not Significant)	RAMS during site clearance	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
Water vole	Local	Disturbance / injury to individuals	Likely Negative (Not Significant)	RAMS during site clearance.	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
White Clawed Crayfish	Local	Disturbance / injury to individuals	Likely Negative (Significant)	RAMS during site clearance.	Neutral (Not Significant)	Mitigation/precautionary measures secured through planning condition
MSPI Hedgehog	Local	Disturbance / injury to individuals	Likely Negative (Not Significant)	RAMS Maintenance of connective habitat	Neutral (Not Significant)	Mitigation secured through planning condition

2 Introduction

2.1 Context

2.1.1 Brindle and Green Ltd were commissioned by Chevin Homes to provide an EcIA at Bowbridge Garage, Derby (Figure 1). This EcIA report documents the constraints identified within the PEA undertaken by Brindle and Green Ltd (BG25.182 Bowbridge Garage, Derby – Preliminary Ecological Appraisal – REV1) and adds the results of additional protected species and habitat surveys undertaken during summer. The EcIA includes the following sections:

- Baseline ecological conditions
- Assessment of effects and mitigation measures
- Enhancement strategy
- Summary of residual effects

2.1.2 The application site is approximately 0.84ha in extent and is situated in a suburban area positioned on the northwestern outskirts of Mackworth, Derbyshire. The site comprises a field of modified grassland to the north and west, along with hardstanding to the south. There is a small patch of broadleaved woodland with patches of dense bramble (*Rubus fruticosus*) dominated scrub located within the grassland to the west. Three native species-poor hedgerows border the site to the north and the west. One outbuilding (B1) is an abandoned diner recorded to the south of the site.

2.1.3 The site is the subject of a full application for site clearance to facilitate the development of nine new residential properties as well as associated access and gardens, along with two office blocks with associated access and parking. It is understood that the proposals will involve significant ground clearance as well as the demolition of existing buildings. Detailed design proposals are presented within Appendix 6 of this report.

2.1.4 This report prescribes additional mitigation measures during construction and post-construction phases to avoid, reduce or reverse adverse impacts and prevent biodiversity loss.

2.1.5 Results presented within this report have been prepared by an experienced ecologist and are therefore the view of Brindle and Green Limited. The survey is based on information provided

by our client, the development proposals, and the results of the desk study and our survey of the site.

3 Methodology

3.1 Desk Study

3.1.1 Table 2 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites in addition to any records for protected species were requested from the following sources:

Table 2: Ecological data resources

Consultant	Requested Data	Search Radius	Date Requested
Local Ecological Records Centre *Derbyshire Biological Records Centre (DBRC)*	Protected and notable species records International, National and Local Site Designations	2km	14/05/2025
Multi Agency Geographic Information for the Countryside (MAGIC) Maps	International and National Site Designations Granted EPS Development Licences	2km	01/05/2025

3.2 UK Habitat Classification Survey

3.2.1 A UK Habitat Classification survey was undertaken where habitats were categorised and mapped (Appendix 1) following the UK Habitat Classification Version 2.01 (UK Hab Ltd., 2023) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development

3.2.2 The UKHab System is comprised of a five-level Primary Habitat Hierarchy, with each successive level providing increasingly detailed descriptions of habitat parcels present onsite. The system encompasses all habitat types found in the UK, irrespective of scale or geographic range, including UK Biodiversity Action Plan Priority Habitats and Habitats Directive Annex I habitats.

- Level 1 includes the description of each major ecosystem present; Terrestrial, Freshwater, and Marine.

- Level 2 includes nine ecosystem types; Grassland, Woodland and Forest, Heathland and Shrub, Wetland, Cropland, Urban, Sparsely Vegetated Land, Rivers and Lakes, and Marine Inlets and Transitional Waters.

- Level 3 describes the 20 broad habitat types of the nine ecosystems outlined in Level 2. Examples include Acid Grassland, Calcareous Grassland, Neutral Grassland, Modified Grassland, Broadleaved and Mixed Woodland, Hedgerows, and Dense Scrub.

- Level 4 expands the 20 broad habitat types of Level 3 into 85 detailed habitat types, including Lowland Meadows, Other Neutral Grassland, Lowland Mixed Deciduous Woodland, and Other woodland; Mixed. This level also allows the separation of 46 UK Biodiversity Action Plan Priority habitats from other habitats of lower ecological significance.

- Level 5 provides a further detailed expansion to Level 4 habitat types. 119 habitats are described within this level including 72 habitats as listed in Annex 1 of the Habitats Directive.

3.2.3 Primary habitat types are accompanied by a list of Secondary Codes, which are further categorised into 'Essential' and 'Additional' codes. Each recorded habitat parcel is assigned a single Primary Habitat Code from Levels 2-4 and includes all Essential Secondary Code features relating to the habitat parcel. Additional Secondary Codes are also applied where relevant. No more than six Secondary Codes are recommended per parcel (UKHabs Ltd. 2023) and a list of Secondary Code definitions relevant to the site have been provided within Appendix 1. Where additional details were required, Target Notes have also been provided (Appendix 2). A plant species list (Appendix 2) summarising all plants identified on site was produced during the survey and all scientific nomenclature was produced according to Stace (2010).

3.2.4 This survey was extended to note the potential for habitats on site to support protected and/or notable species and for evidence of any such species. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings or field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further species-specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or to guide an EPS development licence.

3.2.5 Hedgerows on site were assessed following the Hedgerow Survey Handbook (DEFRA 2007) and defined as species-rich if the structural species making up a surveyed 30m section of hedgerow

included at least five native woody species. Results were compiled and assessed against qualifying criteria within the Hedgerow Regulations (1997) and also the UK Biodiversity Action Plan / NERC Act 2006.

3.2.6 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendices 4 and 5 of this report.

3.2.7 The UKHAB Classification Habitat Survey was undertaken on the 25th April 2025 by Dave Judson BSc (Hons), MSc, Consultant Ecologist and Billie-Jo Payne BSc (Hons), Assistant Ecologist. This survey was overseen by Lucinda Sweet PhD, MCIEEM Natural England Bat Licence (Class Level 2, 2019-9122-CLS-CLS), Great Crested Newt Licence (Class Level 1, 2016-22852-CLS-CLS), Director.

3.3 Phase 2 Surveys

3.3.1 Within the PEA, the following ecological phase 2 surveys have been recommended to allow a full impact assessment on the ecological value of the application site.

- Bat roost characterisation survey
- Bat activity survey
- Reptile survey
- Badger survey
- Otter and water vole survey
- White-clawed crayfish survey

Bat Roost Characterisation Surveys and Presence/Likely Absence Surveys

3.3.2 Bat roost characterisation surveys were carried out following the guidelines outlined within Natural England's Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust Good Practice Guidelines (Colins, 2023). Where deviation from best practice has been required, details have been provided within the limitations section of the report.

3.3.3 Building 1 on site possessed 'Low' suitability for roosting bats and has been subjected to one dusk emergence survey on the 18th August 2025. The survey was completed by Zoe Millward BSc

(Hons), Graduate Ecologist, Dylan Scott, Trained Seasonal Ecologist and Nikki Scott, Trained Seasonal Ecologist.

3.3.4 The below describes the methodology used for the dusk emergence surveys.

3.3.5 Each surveyor operated an Echo Meter Touch detector connected to an iPad. Where possible, species were identified using information from visual and audio cues, all sonograms were recorded on to the iPad and were analysed using Kaleidoscope software to confirm species identification.

3.3.6 Surveyors were also equipped with Nightfox Whisker Night Vision Binoculars and tripod, which were focused on the suitable features previously identified during the PEA. The night vision software recorded for the duration of the survey, with the attending surveyor regularly monitoring and adjusting the intensity of the IR LED to make sure that the footage recorded was not over-exposed. Where thought necessary, the footage was reviewed to pinpoint emergence / re-entry points, when a surveyor has flagged it is required based on their visual observations

3.3.7 All bat passes, including time and species, were recorded on to field maps, noting direction of flight and emergence. Where possible, the number of individuals observed, and behaviour of the bat was also recorded, including foraging, commuting and social calling behaviours.

3.3.8 Survey conditions, and results can be found within Appendix 9B of this report.

Bat Activity Survey

3.3.9 Bat activity surveys were carried out following the guidelines outlined within Natural England's Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust Good Practice Guidelines (Colins, 2023). Two dusk transect surveys were undertaken in Summer (August) and Autumn (October) 2025 One transect route was walked during the summer survey, with an inverse route undertaken during the second autumn survey.

3.3.10 Two surveyors walked a pre-planned route at a constant speed along the linear features of the application site, in order to collect bat activity data. Surveyors stopped at predetermined point count locations along the transect where activity was recorded for a 5-minute period. If a bat crossed during the transect, it was recorded, and the direction of activity recorded before continuing the transect. Surveyors were equipped an Echo Meter Touch detector connected to an iPad. Where possible, species were identified using information from visual and audio cues,

all sonograms were recorded on to the iPad and were analysed using Kaleidoscope software to confirm species identification.

3.3.11 Two remote bat detectors (SM-MINI) were positioned in two locations upon the transect route, in order to collect bat activity data while unattended. The detectors were set to activate 15 minutes prior to sunset and de-activate 15 minutes following sunrise. An automated survey was carried out for a 5-day period per month between August and October 2025. The SM-MINI data aims to provide context to the transect surveys carried out each month. To this purpose, five consecutive nights worth of SM-MINI data were collected and analysed, where possible including each of the nights on which transect surveys were undertaken.

3.3.12 The dusk transects surveys began at sunset and lasted for up to two hours following sunset. Two surveys were conducted on 26/08/2025 and 02/10/2025 by Billie-Jo Payne BSc (Hons), Assistant Ecologist, Matthew Jones, Seasonal Ecologist, Byron Humphries BSc (Hons), ACIEEM, Natural England Great Crested Newt Licence Class 2 (2025-84081-SCI-CL09), NPTC Certified Tree Climber, Principal Ecologist, and Charlie Martin, BSc (Hons), Ecological Mitigation Assistant.

3.3.13 Survey conditions and full results can be found within Appendix 9A.

Reptile Survey

3.3.14 A seven-visit, presence or likely absence survey was undertaken during suitable conditions in September 2025 Reptiles are considered to be active between March and October with optimal survey conditions during April and May or September. Surveys were undertaken during suitable weather conditions when the air temperature was between 9 - 18°C (Froglife, 1999).

3.3.15 Reptile refugia (1m x 1m) constructed from roofing felt were used to observe basking and sheltering reptiles. Refugia was laid at a density of between 5 and 10 per hectare of suitable habitat (Froglife, 1999).

3.3.16 65 mats were laid on 15th August 2025 and were left to embed for a minimum period of two weeks, with a series of seven visits undertaken on: 02/09/2025, 05/09/2025, 09/09/2025, 11/09/2025, 17/09/2025, 19/09/2025, 23/09/2025 by Billie-Jo Payne BSc (Hons) Assistant Ecologist, Magdalena Charborska BSc (Hons), Qualifying Member of CIEEM, Assistant Ecologist, Joshua Spargo BSc (Hons), Seasonal Ecologist, Sarah Jennison BSc (Hons), Qualifying Member of CIEEM,

Consultant Ecologist, Wren Sant, Seasonal Ecologist, Laura Bennet, Seasonal Ecologist, and James Mackenzie BSc (Hons), Seasonal Ecologist.

3.3.17 Survey conditions and a refugia map can be found within Appendix 9C.

Badger Survey

3.3.18 The badger survey was carried out in accordance with guidelines approved by the CIEEM, including Best Practice Guidance - Badger Surveys, Scottish Natural Heritage (2003), Inverness Badger Survey 2003. Commissioned Report No. 096. and Surveying Badgers, The Mammal Society, Harris S, Cresswell P and Jefferies D (1989).

3.3.19 Legislation relating to badgers can be found in Appendix 5 of this report.

3.3.20 Due to the conservation status of badgers, full details can be found in Appendix 10 (**CONFIDENTIAL**).

Identification of Setts

3.3.21 Any holes discovered were categorised into sett types using the following criteria, quoted from Natural England guidance (Natural England, 2007):

- **Main Setts** usually appear well-used, well established and have a large number of holes. Big spoil heaps, often with piles of old bedding are located outside. Main setts tend to have well-worn paths between the sett and foraging areas, and between sett holes. They are generally considered to be breeding setts and are often in use all year round. A social group of badgers will only have one main sett within their territory.

- **Annexe Setts** are always close to a main sett and are usually connected by one or more obvious well-worn paths. They consist of several holes but are not necessarily in use the whole time, even if the main sett is very active. Should a second litter of cubs be born within the social group, they are likely to be raised within an annexe sett.

- **Subsidiary Setts** often these setts have very few holes, are usually at least 50m from a main sett and do not have an obvious path connecting them with another sett. Subsidiary setts are not continuously active.

- **Outlying Setts** usually comprising one or two holes with very little spoil outside (thus indicating that the tunnel system underground is not extensive), outlying setts have no obvious path connecting them with another sett and are used only sporadically.

Indication of the Level of Activity at each Sett:

- Well used sett entrances contain no debris or vegetation, are obviously regularly used and often show signs of having been recently excavated.

- Partially used setts are those with entrances not in regular use and which may have debris (twigs, leaves, moss etc) around the entrance. However, they could potentially be used regularly in the future with minimal clearance necessary.

- Disused setts show signs of not having been in use for a considerable period of time and would not be used again without extensive clearance by a badger.

3.3.22 A single day-time walkover survey was undertaken on 22nd August 2025 by Marc Redmond BSc (Hons), Consultant Ecologist and Sarah Jennison BSc (Hons), Qualifying Member of CIEEM, Consultant Ecologist.

Water Vole Survey

3.3.23 A single survey was undertaken following guidance set out in Water Vole Conservation Handbook, 3rd Edition (Strachan et al, 2011). A walkover of the accessible areas of the tributary located approximately 20m east of the site, identify suitable points for access, areas of likely presence and to check for water vole sightings.

3.3.24 The survey involved establishing sub-sections and recording observations on habitat type and suitability or otherwise, alongside searching for evidence of water vole presence. The habitat suitability was recorded following the method detailed below.

3.3.25 Field signs typically involve searching for burrows, latrines, feeding stations, mammal runs and footprints.

Habitat Suitability Assessment (HSA)

3.3.26 Harris *et al.* (2009) devised a method to assess the suitability of habitat for water voles. Under this approach the presence or absence of a number of well-documented environmental features

favoured by water voles is recorded, providing an indication of the habitat suitability on site. The resulting scores are categorised as follows:

- Less than 3 Unsuitable (no potential for enhancement)
- 3-5 Sub-optimal (potential for enhancement)
- Greater than 5 Optimal

3.3.27 The survey was undertaken on the 22nd August 2025 by Marc Redmond BSc (Hons), Consultant Ecologist and Sarah Jennison BSc (Hons), Qualifying Member of CIEEM, Consultant Ecologist.

Otter

3.3.28 One walkover survey (August 2025) of the accessible areas of the tributary from Mackworth Brook which is located approximately 20m east from the site, was undertaken to identify key parameters, identify suitable points for access, areas of likely presence to check for otter sightings.

3.3.29 The surveys involved establishing sub-sections and recording observations on habitat type and suitability or otherwise, alongside searching for evidence of otter presence.

3.3.30 Field signs typically involve searching for holts, droppings, feeding remains, lay-ups, mammal runs and footprints.

3.3.31 The survey was undertaken on the 22nd August 2025 by Marc Redmond BSc (Hons), Consultant Ecologist and Sarah Jennison BSc (Hons), Qualifying Member of CIEEM, Consultant Ecologist.

White-Clawed Crayfish Survey

3.3.32 The white-clawed crayfish survey was carried out in accordance with guidelines approved by the CIEEM, including: Monitoring the white-clawed crayfish Conserving Natura (2013).

3.3.33 A habitat assessment was conducted along the watercourse and approximately 100m up- and downstream (where accessible). The assessment involved sections termed ‘patches’ of the tributary most suitable for hosting white-clawed crayfish through identifying features offering suitable refugia such as submerged tree roots, artificial debris, undercut banks and substantial stones.

3.3.34 The watercourse was subject to a refuge search, whereby larger stones and potential refugia within the watercourse were lifted by hand and the substrate underneath examined for crayfish or burrows. Any crayfish found were identified to species, sex and age where possible.

3.3.35 An initial physical assessment survey was undertaken on the 22nd August 2025 by Marc Redmond BSc (Hons), Consultant Ecologist and Sarah Jenninson BSc (Hons), Qualifying Member of CIEEM, Consultant Ecologist.

3.3.36 The population estimate survey was undertaken on 19th September 2025 by Sarah Jenninson BSc (Hons), Qualifying Member of CIEEM, Consultant Ecologist and Nick Carter MCIEEM, MIFM, 2017-27965-CLS-CLS

3.4 Biodiversity Impact Assessment

3.4.1 The biodiversity accounting system is underpinned by a metric that calculates the ecological value of both development impact and habitat restoration/creation.

3.4.2 The Biodiversity Metric is designed by Natural England in consultation with a range of experts. The metric is based on an assessment of habitat type and condition. Habitat types are classified into three bands of 'distinctiveness' which are: priority habitats as defined in the NERC Act 2006 (high), semi-natural habitats (medium) and managed habitats, such as arable farmland (low).

3.4.3 Compensation arrangements must be like-for-like or better, i.e the loss of semi-natural habitats can only be compensated for through the creation of priority or other semi-natural habitats, not through creation of lesser quality habitat. 'Trading up' options allow for the loss of poor-quality habitat, such as farmland, to be compensated for with the creation of high-quality habitat.

3.4.4 The ecological value of the habitat lost to development is a function of its distinctiveness, its condition and the area lost – scores are assigned to all three variables and multiplied together to arrive at the number of units lost. To compensate for a loss, the same or more units ('conservation credits') must then be delivered through habitat creation or restoration at another site that is going to be managed for wildlife (the 'receptor' site or compensation site).

3.4.5 The number of credits delivered by the compensation receptor sites are also a function of the type condition and area or the habitat being created or restored. But additionally, there are a further range of 'multipliers' applied to the creation of habitat and included within a separate

section – hedge baseline and hedge creation, river baseline and river creation. The aim is to achieve a 10% net-gain for hedgerows and river units as well as for biodiversity units.

3.4.6 Where proposed creation/enhancement of habitat is of medium distinctiveness or above then a Habitat Management and Monitoring Plan (HMMP) must be produced to detail how these areas are to be maintained to achieve their target criteria and secure their longevity.

Mapping and Assessment

3.4.7 For the baseline calculations the habitats were mapped using the UKHab map and condition assessed using the criteria outlined within the Statutory Biodiversity Metric condition assessment sheets. The classification of habitats and conditions follow the outline in the Natural England Technical Support document associated with the latest edition of the metric.

3.4.8 Habitats and hedgerows were mapped within QGIS software to allow area calculations. The proposed scheme was overlayed and measured using the georeferencing tool. Polygons and lines used to measure existing habitat areas were classified by their proposed habitat type to provide reference.

Strategic significance

3.4.9 A desk study utilising publications within the local plan (Derbyshire County Council Local nature Recovery Strategy) as well as open-source data available from Multi Agency Geographic Information for the countryside (MAGIC) was searched to determine the strategic significance of the site

3.5 Limitations

3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

3.5.2 Bat activity surveys were undertaken throughout summer and autumn, however no activity surveys were undertaken in spring. This is not considered a significant limitation to the assessment as, given the small scale of the site and low number of bats recorded during the summer and autumn transects, it is considered that the current data set is suitable for determining the value of the habitats on site for commuting and foraging bats.

3.6 Report Lifespan

3.6.1 Given the transient nature of the subject, we would consider the survey results contained to be accurate for one year.

3.7 Evaluation Methodology

3.7.1 The site and protected and notable species within the zone of influence were classified into one of the following six groups (Table 2) following the Guidelines for EcIA (CIEEM, 2016), depending on the size, rarity, diversity and fragility for a species population. The evaluation also considers County and nationally prepared documents such as Local Biodiversity Action Plan (LBAP) and Red Data books.

Ecological Impact Assessment

3.7.2 The Ecological impacts of a development were assessed using data collected from historic records and current field surveys to and were categorised following EcIA guidelines (CIEEM, 2016) as follows:

- Highlight Protected or notable species which could be impacted as part of the development (Section 5).
- Determine the severity of the impact and effect without specific mitigation measures (Section 6).
- Outline a mitigation strategy highlighting areas of potential environmental improvement, which upon implementation aims to avoid or reduce negative impacts and effects (Section 6).
- Assess the feasibility and likelihood of success of the mitigation strategy (Section 7).
- Assess the residual impact of the development assessing that the mitigation has been successfully implemented and all prescriptions have been implemented (Section 7).

Classifying the extent of impacts and effects

3.7.3 The extent of impacts and effects need to be described in an unambiguous, consistent manner. The direction of change 'Positive' or 'Negative' should be assessed in relation to the overall

biodiversity outcome, and should consider the duration, timing and reversibility of the constraint and be classified into one of the following five categories:

Table 3: Description of extent of impacts

Impact	Description
Positive (Significant)	Activity will create a beneficial effect over a long term, created a valued ecological feature
Positive (Not Significant)	Activity will create a beneficial effect without markedly improving the conservation status
Neutral	Effects or neutral or no net change will occur
Negative (Not Significant)	Negative effect without causing long-term irreversible damage
Negative (Significant)	Significant Negative effect including loss or long-term irreversible damage to integrity or status of a valued ecological feature

3.7.4 Significant Negative effect including loss or long-term irreversible damage to integrity or status of a valued ecological feature

Table 4: Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status

Evaluation Value	Example of habitat or species
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA)/Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare. A regularly occurring regionally or county significant population/number of any nationally important species A feature identified as of critical importance within Section 41 of the NERC Act (2006).
Regional	Key Habitat type included within BAP. A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (which have features qualifying for LWS status). Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.
Local/Site	Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context.

Evaluation Value	Example of habitat or species
	Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.

4 Site Context

4.1 Site Description

4.1.1 The application site can be found at SK 30582 38141, positioned on the northwestern outskirts of Mackworth, a suburb associated with the city of Derby. The site comprises a field of modified grassland to the north and west and hardstanding to the south. There is a small patch of broadleaved woodland to the east along with patches of dense bramble scrub located within the grassland to the west. Three native species-poor hedgerows border the site to the north and east. One outbuilding (B1) is an abandoned dine recorded in the south of the site.

4.1.2 The land surrounding the site is dominated by arable and pastoral farmland interspersed by mature hedgerows, tree lines and frequent pockets of woodland. The site is well connected to the surrounding landscape to the north, east and west via hedgerows, and woodland recorded onsite. However, barriers to terrestrial species dispersal are present within the locality, namely the A52 positioned approximately positioned adjacent to the southern boundary.

4.2 Zone of Influence

4.2.1 The Zone of Influence is used to describe the geographic extent of potential impacts of a proposed development. This is determined by the type of development proposed in relation to individual species and described within each of the species assessments within Section 5 of this report. Maps, aerial photographs, historic data records and field survey results were examined to assess the relationship of the location and its connection to the surrounding environment and habitats beyond the site boundaries.



Figure 1: OS map of the project site and surrounding area. Red line boundary depicts application site.

5 Baseline Ecological Conditions

5.1 Desk Study

Designated Sites

5.1.1 The site was subjected to a search for designated sites within a 2km radius of the site using data supplied by the Local Records Centre (DBRC) and the online desk-based resource MAGIC.

5.1.2 The data supplied by DBRC was received on the 15/05/2025 and is summarised within **Error! Reference source not found.**. The search revealed one statutory and nine non-statutory sites within a 2km radius of the site.

5.1.3 A search of the online resource Magic Maps found no additional sites with Statutory designations within the 2km radius search.

Table 5: Summary of Designated Sites within a 2km radius of the application site

Site Name	Grid Ref	Status	Reason for Designation	Distance from site
Statutory Sites				
Kedleston Park	SK 31044 39921	SSSI	The main interest of Kedleston Park is the rich and diverse deadwood invertebrate fauna. To be capable of supporting highly specialised deadwood invertebrates such as those found a Kedleston trees need to be several hundred years old and furnished with a wide range of small-scale habitats including living and dying wood together with dead wood in every type and stage of decay. Together with the wood-rotting fungi this community of organisms represents a complex system of nutrient recycling rarely found in woodlands today.	1.6km north
Non-statutory Sites				
Bowbridge Wood	SK 3022 3799	LWS	Bowbridge Wood comprises a narrow woodland shaw, running adjacent to a small stream that feeds the Mackworth Brook.	230m southwest

Site Name	Grid Ref	Status	Reason for Designation	Distance from site
Statutory Sites				
Brun Wood	SK 3018 3751	LWS	Brun Wood is a small area of old coppiced woodland with standards.	670m southwest
Meynell Langley Lake	SK 3014 3936	LWS	Meynell Langley Lake is relatively large lake with associated wetland features including several smaller ponds, islands, aquatic vegetation, marginal swamp, fringing alder and willow trees.	1.1km northeast
Lodge Farm Woods	SK 2932 3915	LWS	Lodge Farm Woods comprises Crow wood, Sandpit wood and Meynell Gorse and support both ancient and secondary woodland.	1.2km northwest
Mackworth Brook	SK 3182 3792	LWS	The stretch of the Mackworth Brook supports a fringing canopy of elder and hawthorn. The stream displays a diversity of natural features including depth and flow, a rocky stream bed and stream banks.	1.2km east
Flagshaw Brook Swamp	SK 2923 3904	LWS	The site supports species-rich tall-herb swamp and open water and unimproved neutral grassland. The site comprises a low-lying field adjacent to the Flagshaw Brook together with a steep slope to the north.	1.5km northwest
Meynell Gorse Meadow	SK 2950 3919	LWS	Supports unimproved and semi-improved neutral/marshy grassland. The site has a pond which is fed by a spring and provides wet flushes which are characterised by typical vegetation of wetter areas.	1.5km northwest
Radbourne Lane Hedge	SK 3054 3629	LWS	A species rich hedgerow with a total of 12 woody species	1.8km south
Markeaton Park	SK 3302 3744	LWS	It consists of a large area of parkland, areas of woodland and Markeaton Brook and associated watercourses and lakes.	2km east

Evaluation

5.1.4 Nearby designated sites are considered to have up to 'National Value' following evaluation. The site supports habitats of low value, namely modified grassland, scattered trees and hedgerow. With the site also being small in size, and a reasonable distance from any designated sites, it is not considered likely that the application site is functionally linked with nearby designated sites.

5.1.5 The site lies within an Impact Risk Zone (IRZ) for Kedleston Park SSSI, however, the proposed development does not meet the criteria for the IRZ, as such no further action is required.

5.2 UK Habitat Classification Survey

5.2.1 A UKHab Habitat Survey Map is presented in Appendix 1 of this report. The habitat descriptions below should be read in conjunction with the UKHab plan and the Target Notes in Appendix 2.

5.2.2 A plant species list for those plants identified during the field survey is provided in the Target Notes within Appendix 2.

5.2.3 Table 6 below provides a list of habitat types present on site along with their inclusion (or otherwise) as a National and/or Local Habitat of Principle Importance (HPI) (Previously referred to as Biodiversity Action Plan (BAP)).

Table 6: UKHAB habitat types found on site and inclusion within UK BAP/HPI

Habitat Type	N HPI	L HPI	N/A
Modified grassland (g4)		✓	
Developed land sealed surface (u1b)			✓
Native hedgerows (h2a)	✓		
Other broadleaved woodland (w1g)		✓	
Bramble scrub (h3d)			✓
Scattered trees (32)			✓
Buildings (u1b5)			✓

Modified Grassland (g3c – 32, 33)

5.2.4 The site was dominated by modified grassland to the north and west (G2),with small patches along the southern part of the site (G1, G3 and G4). In total the area of modified grassland accounted for approximately 0.3ha of the red line boundary. Abundant species included Yorkshire fog (*Holcus lanatus*) and perennial rye (*Lolium perenne*). Frequent species included teasel (*Dipsacus fullonum*), daffodils (*Narcissus sp.*) and tufted vetch (*Vicia cracca*). Common nettle (*Urtica dioica*), herb Robert (*Geranium robertianum*) and hogweed (*Heracleum mantegazzianum*) were also recorded occasionally. Rare species included wood forget me not (*Myosotis sylvatica*), prickly sow thistle (*Sonchus asper*), hairy tare (*Vicia hirsute*), rough chervil (*Chaerophyllum temulum*) and dog rose (*Rosa canina*).

5.2.5 The secondary code '32 – Scattered Trees' was applied to this habitat parcel. Scattered trees are discussed separately within paragraph 5.2.17.

5.2.6 The secondary code '33 – Line of Trees' was applied to this habitat parcel located along part of the southern elevation and consisted of Lawson cypress trees (*Chamaecyparis lawsoniana*).

5.2.7 Areas on the northern area (G1 and G2) was unmanaged and had a long sward (around 20 – 40cm in height). Areas along the southern boundary (G3 and G4) were managed and had a short sward.



Figure 2: Area of Modified grassland (G2) positioned north within the site

Developed Land Sealed Surface (u1b – 81, 815, 818)

5.2.8 Driveway and carpark based to the north and south of building B1, along with a hardstanding driveway and path leading to building B2 (Figure 3).

5.2.9 The secondary code '81 – Ruderal or Ephemeral' was applied to this habitat parcel. Species included buddleia (*Buddleja davidii*) and goat willow (*Salix caprea*) (Figure 4).

5.2.10 The secondary code '815 – Commercial Building' was also applied to this habitat parcel. Buildings are discussed separately within section 5.2.18.



Figure 3: Hardstanding carpark to the north of B1



Figure 4: Buddleia located within hardstanding

Hedgerows

5.2.11 Three intact, native, species-poor hedgerows (fewer than five species in any given 30m section) were recorded across the site, bordering the western and northern boundary. The hedgerows were in good condition, the ground undisturbed and free of any damage. Dominant species include hawthorn (*Crataegus monogyna*). Abundant species include bramble. Frequent species include goat willow. Occasional species include elder (*Sambucus nigra*) and ash (*Fraxinus excelsior*).

5.2.12 Ground flora species contained frequent common nettle and cleavers. Occasional species such as common bluebell (*Hyacinthoides non-scripta*), spear thistle (*Cirsium vulgare*), as well as rare species including hedge bindweed (*Calystegia sepium*) also occurred.

5.2.13 Descriptions, including UKHab classifications, of the hedgerows can be seen in Table 6 below. The locations of the hedgerows can be viewed in the UK Habitat Classification Plan in Appendix 1.

Table 7: Description of hedgerows onsite

Hedge Number	Type	Dimensions (Approx.) H x W x L	Description	Likely to Qualify*
H1	Native hedgerow (h2a)	4m x 2m x 9m	Uncut, intact hedgerow located along a small section of western boundary. Species included hawthorn, elder and ivy. Ground flora included nettle, bramble and cleavers.	No
H2	Native hedgerow with small trees (h2a – i1 50)	6m x 2m x 37m	Uncut, intact hedgerow located along part of the western boundary. Species within hedgerow included goat willow and hawthorn. Ground flora included cleavers, bramble and nettle.	No
H3	Native hedgerow with mature standard trees (h2a – i1 50)	6m x 2m x 82m	Uncut, intact hedgerow located along the northern boundary. Species within the hedgerow included hawthorn, elder and a small semi-mature ash tree. Ground flora included nettle, bluebell, spear thistle, hedge bindweed, bramble and cleavers.	No

*Likely to qualify as important under Hedgerow Regulations (1997)



Figure 5: Hedgerow (H3) along the northern boundary

Other Broadleaved Woodland (w1g – 30)

5.2.14 Other broadleaved woodland was present in the north-east corner of the site (Figure 6). The area covered approximately 0.085ha and the trees varied in age from young to semi-mature. Canopy species recorded included dominant goat willow frequent pedunculate oak (*Quercus robur*), hawthorn, and occasional ash. Although there was not a dense shrub layer, understory species were recorded and included hawthorn, elder and blackthorn. Ground flora species recorded included lords and ladies (*Arum maculatum*), nettle, wood anemone (*Anemone nemorosa*), curled dock (*Rumex crispus*), bluebell, fern species (*Polypodiopsida*), square stalked willowherb (*Epilobium tetragonum*), ground ivy (*Glechoma hederacea*), cleavers, perennial ryegrass, and wood forget me not.

5.2.15 The secondary code '30 – Semi-Natural Woodland' was applied to this habitat parcel.



Figure 6: Woodland to the northeast of the site

Bramble Scrub (h3a)

5.2.16 Short, dense bramble scrub is located to the west of the site within the northern grassland area (Figure 7). Species within the bramble scrub included nettle, rosebay willowherb (*Chamaenerion angustifolium*) and teasel.



Figure 7: Bramble scrub located to the west of the site

Scattered Trees (32)

5.2.17 Groups of scattered trees were recorded across the site within grassland, see paragraph 5.2.4 – 5.2.7,(Figure 8) which included four pedunculate oak and hawthorn. Scattered early mature trees were also positioned within H1 to the north and west boundary of the site.



Figure 8: Scattered trees located north of the site within the area of modified grassland

Buildings (u1b5)

5.2.18 Building B1 was a disused petrol station with café, located within the centre of the redline boundary (Figure 9). It was a single-storey building comprising of two sections; an enclosed painted brick building that housed the petrol station and café, with an attached flat roofed lean-to covering the old car fuelling forecourt. The latter comprised of a metal clad structure, with iron supports and beams. All windows and doors to the petrol station/café section of the building were boarded in a plywood for security.



Figure 9: Building B1 located within hardstanding

Invasive Weeds Assessment

5.2.19 An assessment of the site was made to establish the presence of invasive weeds included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

5.2.20 No recordings of Schedule 9 invasive weed species were found within, or adjacent to the application area.

5.2.21 Stands of buddleia (*Buddleia davidii*) were recorded throughout site, including within the areas of hardstanding carpark (SK 30572 38156). Although not listed within Schedule 9, they are still considered pernicious non-native weed species and need to be removed carefully to avoid spreading.

Site Evaluation

5.2.22 The habitats on site have been evaluated as being of low to moderate ecological value in relation to the local surroundings and assessed to have 'District Value' in a regional context (Table 2). The site was dominated modified grassland with broadleaved woodland and small areas of bramble scrub. These habitats are locally frequent and were not considered to be representative of BAP priority habitats. While the woodland habitat on site offers intrinsic value and structural diversity to the site, it is small in size and generally comprised of immature trees, a habitat type which is not uncommon in the local area. The hedgerows on site provided value to terrestrial species and despite being considered species-poor, all native hedgerows are UK BAP priority habitats and are HPI under the provisions of the NERC Act 2006.

5.3 Protected and Notable Species

Amphibians

5.3.1 The Zone of Influence for Great Crested Newts (GCN) (*Triturus cristatus*) and other amphibians was determined following the desk study. A radius of 500m was searched for the presence of suitable waterbodies to support GCN using four different methods (OS Mapping via Pro Map, Google Earth Pro, Google Maps and an on-site walkover).

5.3.2 The data search returned no records within 2km of the site for great crested newts.

5.3.3 Two waterbodies (Ponds 1 and 2) and a ditch (D1) were identified within 500m of the site. The ponds have been discounted due to significant dispersal barriers such as the A52, a busy road which separates the site from the pond. Ditch 1 was found to be largely dry, or holding just a very small amount of water and so was therefore considered unsuitable to support breeding GCN.

Table 8: Pond locations and suitability for Great Crested Newts.

Pond/Watercourse No.	Grid Ref.	Habitat Suitability	Distance from Site
D1	SK 30600 38200	Ditch was dry and shallow.	5m east

Pond/Watercourse No.	Grid Ref.	Habitat Suitability	Distance from Site
P1	SK 30703 37865	Not accessed during preliminary ecological appraisal – situated on private land.	230m southeast
P2	SK 30853 37699	Not accessed during preliminary ecological appraisal – situated on private land.	460m southeast

5.3.4 Although not a target species, during the further phase 2 protected species survey (reptile surveys) common toad were noted within the site boundary.

Evaluation

5.3.5 Suitable terrestrial habitat for GCN was present on site, although this was limited due to the distribution of ponds. D1 was deemed unsuitable for breeding GCN due to being dry for most of the year. The A52 adjacent to the southern boundary of the site was considered to provide a significant dispersal barrier between the site and both ponds. Therefore, GCN were considered likely absent from the site boundary. Any impact on GCN as a result of the proposed development are therefore considered unlikely. However, in unlikely event any evidence of GCN is found on site during clearance works, all construction activities must temporarily cease, and advice of a suitably qualified ecologist be sought.

Breeding Birds

5.3.6 The Zone of Influence for breeding birds pertains to the suitable habitats located within the application site and immediately adjacent to its boundary.

5.3.7 The desk study returned 6 records of notable birds within 2km of the site, all located beyond 1km from the site.

5.3.8 Woodland, scattered trees, hedgerows, scrub and grassland on site all provide suitable nesting habitat for birds. During the PEA, a bird's nest was found within a hawthorn tree located in the woodland block onsite, however it could not be determined which species this belonged to. Due to the regular management of G3 and G4, it was considered unlikely to support ground-nesting birds.

5.3.9 Building B1 onsite considered suitable for breeding birds. Suitable access points for bird species were recorded through the open sides of the building and potential features such as ledges providing opportunities for breeding birds. An old swallow (*Hirundo rustica*) nest was recorded within the gap in the facia on the western elevation.

5.3.10 Based on review of the habitat types on site and the list of bird species recorded within the data search, the site was considered to support opportunities for nesting birds.

Evaluation

5.3.11 The site was considered to have 'Local Value' to breeding birds. The habitats onsite are of low value and locally frequent, as such the impact of the loss of these habitats is short term and can be offset through post construction landscaping.

Bats

5.3.12 Habitats within the application boundary were considered suitable for roosting, foraging and commuting bats. The zone of influence for bats is considered to be within the red line boundary and connective adjacent habitats. The data search highlighted three records of bats within a 2km radius of the application site. All these records were located approximately 1.2km to the southeast of the site. Species recorded included common pipistrelle, soprano pipistrelle and Natterers bat (*Myotis nattereri*). The records within the data search were captured between 2017 and 2023.

5.3.13 Following Bat Conservation Trust guidance (Appendix 5), the site was assessed as providing 'Moderate' suitability habitat for commuting and foraging bats with area of grassland, woodland edge and hedgerows, located along the boundaries of the application site, offering optimal connectivity with the wider landscape.

5.3.14 One building (B1) was recorded within the application boundary. Building B1 was considered to offer roosting features of 'Low' suitability due to presence of Potential Roost Features (PRF) pertaining to a potential access point into the facia on the northern aspect, gaps behind wooden boarding on the southern aspect, and gap between the wall and cladding. A further dusk emergence survey was recommended to establish the presence/likely absence of roosting bats within these features.

5.3.15 Furthermore, scattered trees were recorded both along the boundaries of the application site and within the grassland areas surrounding Building B1 as well as within the woodland adjacent to the western boundary. Visible trees were assessed and categorised based upon Bat Conservation Trust guidance (Appendix 5). All of the assessed trees within the application site or adjacent to its boundary were considered to offer negligible suitability for roosting bats due to holding no suitable roosting features for bats.

Bat Presence/Likely Absence Survey

5.3.16 A dusk emergence survey was carried out on 18th August 2025. Bat activity commenced on site at 20:40, when a noctule was recorded as Heard Not Seen (HNS). Overall, throughout the survey, bat activity was considered low, with a low number of total bat passes observed. A myotis species was observed commuting east to west along the southern elevation of B1. A noctule was observed foraging to the south of the site north to south over the A52 towards field south of the site. One common pipistrelle was seen commuting south to north over B1. No bats were observed emerging or re-entering B1, as such, it is highly likely that roosting bats are absent from B1.

Foraging and Commuting Bats

5.3.17 The data search highlighted bat activity within the Zone of Influence. The site supported features considered suitable for commuting and foraging bats including scattered trees, woodland edge and grassland as well as native hedgerows which dissected and formed the boundaries of the site. Two walked transect routes, within the summer and autumn months were undertaken and supplemented by utilising the placement of two remote detectors on each route. The remote detectors were deployed every month during the seasons of summer and autumn in suitable separate locations.

5.3.18 The activity levels during the walked transect surveys were considered to be low, pertaining to peak counts of one pass of myotis species and two passes of common pipistrelle and noctule. This included a mixture of foraging and commuting behaviours. The passes that were commonly observed were a noctule passing over the site heading northwest, and a common pipistrelle passing through the site heading northeast towards the woodland. Myotis species were also noted but not visually observed.

5.3.19 Fifteen nights of SMZC remote bat detector data were collected in total; five nights from, August, September, and October, including the nights on which walked transect surveys were carried out. The remote detectors were positioned against two prominent vegetative features; within the woodland and hedgerow boundary.

5.3.20 Location 2 was found to support the highest levels of activity within the application boundary with a total of 1,420 bat passes recorded between the months of August and October. The number of passes at Location 1 were lower, with a total of 838 bat passes recorded throughout the suite of bat activity surveys.

5.3.21 The highest levels of bat activity at location 1 were recorded in the month of October (with a total of 298 calls) followed by September (with a total of 271 calls). The lowest level of bat activity at location 1 were recorded in August, with a total of 269 calls. However, this shows the level of bat activity was generally consistent throughout the months recorded, suggesting that consistent low to moderate commuting activity is associated with the hedgerow on the southern boundary of the site.

5.3.22 The highest levels of bat activity at location 2 were recorded in the month of October (with a total of 1,304 calls) followed by September (with a total of 101 calls). The lowest level of bat activity at location 2 were recorded in August, with a total of 15 calls. Showing less consistency between months, suggesting this section of woodland is intermittently used as a foraging resource for bats.

5.3.23 Common pipistrelle and soprano pipistrelle were found to be the most dominant species recorded using vegetive features for commuting and foraging purposes within the application boundary, being the most recorded species in every month in both locations. This was followed by noctule, myotis and brown long-eared. Occasional nathusius pipistrelle and Leislers were recorded at both locations.

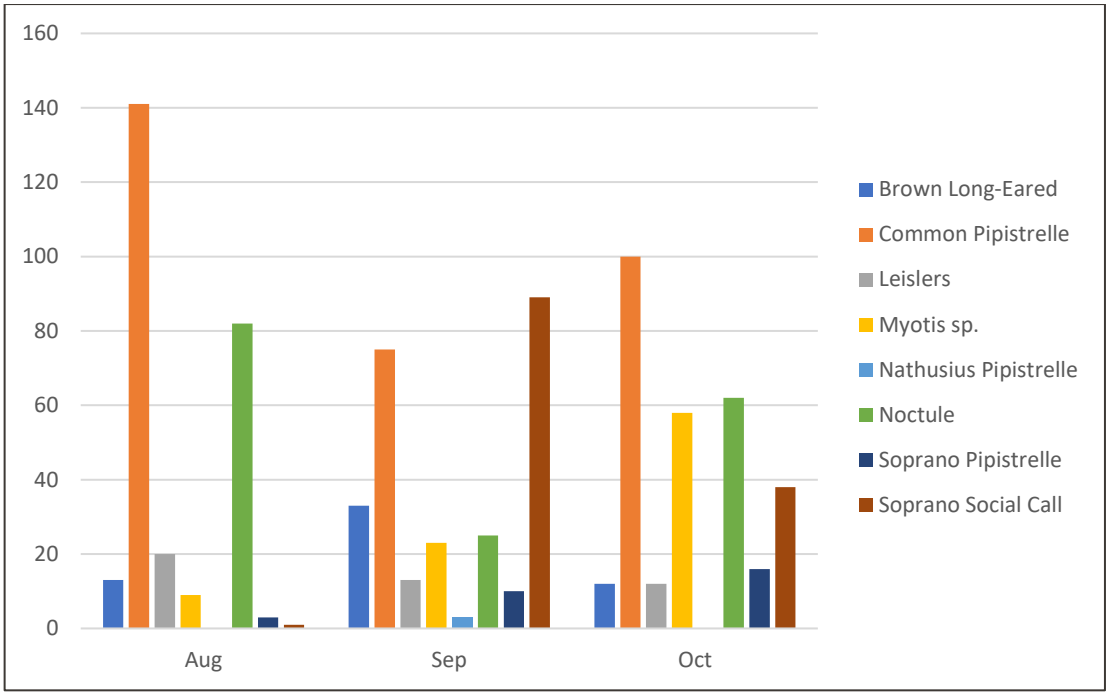


Figure 10: Bat passes recorded by SM Mini detector at Location 1

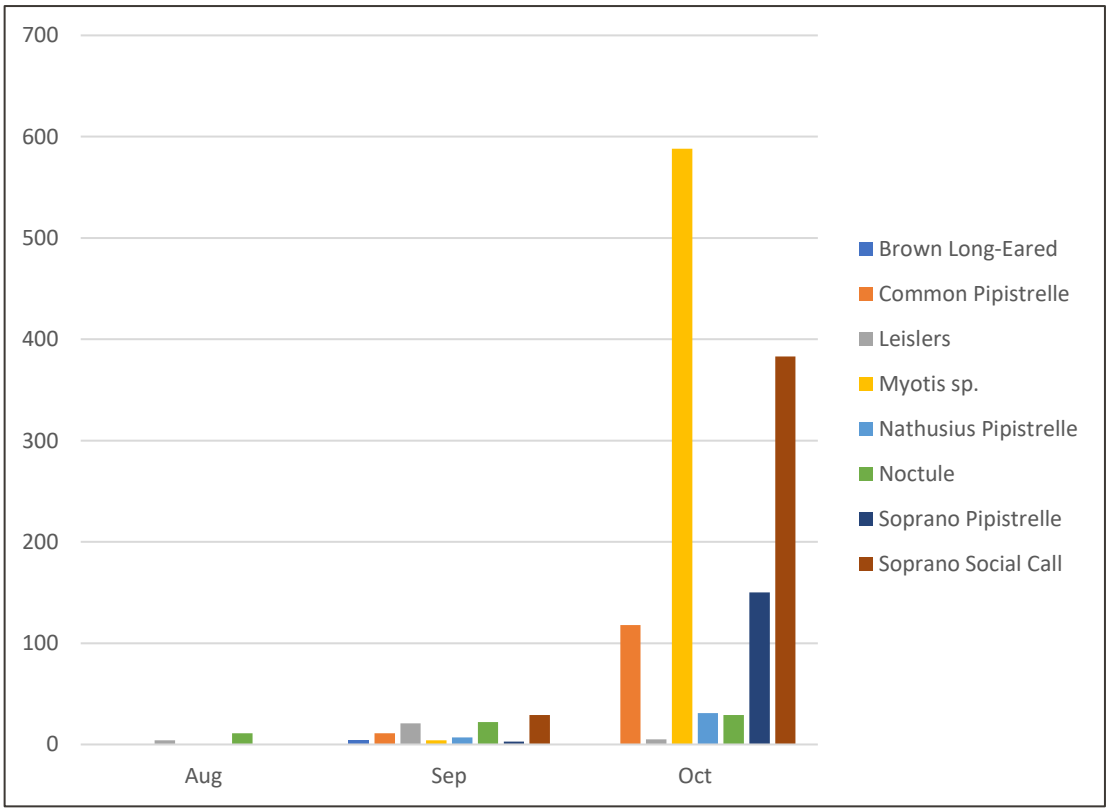


Figure 11: Bat passes recorded by SM Mini detector at Location 2

Evaluation

5.3.24 The site has been assessed as being of 'Local Value' for roosting bats following assessment (Wray *et al.*, 2010). Whilst potential roosting features (PRFs) were noted on Building B1, no roosts were found following the suite of bat dusk emergence surveys.

5.3.25 The foraging and commuting habitat within the application site was assessed to be of 'Local Value' following assessment (Wray et al 2010) with a score of 20. The activity within the application boundary pertained to very low numbers of locally frequent bat species, of low conservation concern during the walked transects. While some rarer species were recorded by the static detectors, these were in very low numbers, and it is considered that these species only use the habitats on site on an intermittent basis. It is therefore not considered that the application site is used by a low number of individual bats, largely pertaining to the boundary features, and largely pertaining to common and soprano pipistrelle.

Reptiles

5.3.26 The zone of influence for reptiles was considered to be within the site and 500m of connective habitat. The variable sward structure of the grassland, scattered trees, hedgerows and artificial refugia provided shelter to support reptiles. In addition, the site was well connected to the surrounding landscape by hedgerows and woodland, particularly to the north and the east.

5.3.27 Although no evidence of reptiles was found onsite at the time of the PEA and the data search returned no records of reptiles within 2km of the site, the extensive and variable habitats onsite had the ability to support reptile populations. Therefore, the decision was made to carry out reptile surveys to determine the presence or likely absence of these species onsite.

5.3.28 The reptile survey showed no evidence to suggest that there was a permanent population of reptiles using the site. The survey results are presented within Table 9 below:

Table 9: Results of the seven visits undertaken during September 2025 (Refugia Locations can be found within Appendix 9C)

Survey Date/Time	Temp °C	Cloud Cover (okta)	Humidity %	Wind Speed (Beaufort Scale)	Findings
02/09/2025 9:00	15	4	77	1	No reptiles.

Survey Date/Time	Temp °C	Cloud Cover (okta)	Humidity %	Wind Speed (Beaufort Scale)	Findings
05/09/2025 9:15	14	2	80	1	No Reptiles, 1 common toad.
09/09/2025 10:50	16	4	64	1	No reptiles.
11/09/2025 09:15	14	5	82	2	No reptiles.
17/09/2025 15:30	19	8	87	1	No Reptiles, 1 toad.
19/09/2025 16:00	21	3	65	2	No reptiles.
23/09/2025 9:30	13	1	76	1	No reptiles.

Evaluation

5.3.29 Following seven survey visits no reptiles were recorded within the suitable habitat onsite, confirming that the habitat on site provides 'Site Value' for this protected species group, following evaluation criteria (Table 3). The lack of survey findings suggests that it is highly unlikely that a resident population of reptiles exists within the application boundary or within connective habitat adjacent to the site.

Badger

5.3.30 Certain protected species including badger sett locations are sensitive in nature, and due to the risk of public interference are kept confidential. A discussion on impacts to badger and suggested mitigation is included within **confidential** Appendix 10.

Otter

5.3.31 The Zone of Influence was considered to be the tributary which is a runoff of Mackworth Brook, located approximately 20m to the east of the site boundary. The data search returned two records of otter within 2km of the site.

5.3.32 Habitats on-site are suboptimal for otter, largely pertaining to open grassland. However, the presence of a small woodland on the east of the site suggests that otter may utilise this on-site habitat if they are present within the adjacent tributary of Mackworth brook.

5.3.33 The tributary is a runoff Mackworth brook and is associated with agricultural land in the wider areas. The brook was generally shallow, however was found to support a population of signal crayfish (*Pacifastacus leniusculus*), and so it may be utilised by foraging otter. The areas of scrub on either side of the watercourse also offer suitable cover for otter and suitable holt making habitat.

5.3.34 During the survey in August 2025, the otter survey returned no evidence of foraging or resting otter within the tributary. No evidence of otter holts or couches were recorded during the survey.

Evaluation

5.3.35 Although the habitats onsite were considered suitable for foraging and commuting otter, no evidence of otter was observed during the survey. Therefore, the site was considered to have 'Site Value' to otter following evaluation criteria (Table 3).

Water Vole

5.3.36 The Zone of Influence was estimated to be 30m to the west of the application boundary. The desk study highlighted no observations of this species within 2km zone of influence.

5.3.37 The tributary which is a runoff Mackworth Brook located approximately 20m from the site boundary was surveyed for water vole.

5.3.38 During presence/likely absence surveys a systematic search no evidence of water vole were found and therefore were found to be absent during the survey.

5.3.39 The HSA following Harris *et al.* 2009 attributed a suitability score of between 3 and 4 for the tributary. Sections of the brook offered steep banks suitable for burrowing, alongside a berm for resting and foraging. Although the brook was very well shaded across its length, and therefore bankside vegetation was scarce and there was a lack of suitable vegetation (such as grasses, sedges and rushes) which may offer a suitable food source and shelter for water vole. Overall the brook offered suboptimal habitat for water vole.

Evaluation

5.3.40 The site is considered to have 'Local Value' to water vole following evaluation criteria (Table 4). While there was suitable habitat present within and adjacent to the site, this was considered sub-optimal and the lack of records provided by the data search and the lack of evidence of water vole found on the survey suggest that this species is likely absent from the site and surrounding watercourses.

White-Clawed Crayfish

5.3.41 Whilst the habitats onsite were not considered suitable for white-clawed crayfish, a tributary which is a runoff from Mackworth Brook is located within 30m of the boundary, and the data search returned two records of white-clawed crayfish within 2km of the application site. Given the proximity of the tributary, it was considered that any protected species such as white-clawed crayfish using this watercourse may be at risk from indirect effects resulting from the proposed development. As such this tributary located approximately 20m from the site was assessed for the presence of white-clawed crayfish.

5.3.42 The tributary was found to offer suitable habitat for white-clawed crayfish, comprising a relatively shallow brook with suitable stoney substrate and submerged tree roots for refuge. White-clawed crayfish were found to be absent from the 100m section of brook surveyed, however an abundance of the invasive signal crayfish were observed.

Evaluation

5.3.43 The site does not support suitable habitats for white-clawed crayfish, however habitats within the zone of influence (the tributary of Mackworth brook) located 20m east of the site offers suitability for white-clawed crayfish. White-clawed crayfish were found to be absent following further surveys, and the presence of signal crayfish within the brook suggests it is highly unlikely white-clawed crayfish are present within the brook, and are therefore not considered a constraint to the application.

Mammal Species of Principle Importance

5.3.44 The NERC Act 2006, Section 41 highlights 17 species of principle importance within England. Although these species were not surveyed directly as a result of their distribution and habitat preferences, evidence for activity by these species was searched for during the phase 1 survey

and phase 2 protected species surveys. The NERC Act 2006 includes several species of bat, such as common pipistrelle, soprano pipistrelle and noctule, however these have been addressed in Section 5.3.9.

5.3.45 The Zone of Influence was considered to be within ecological connective habitat along the boundaries of the site, within 30m of the boundary. The site offered habitat capable of supporting foraging and commuting West European hedgehog (*Erinaceus europaeus*) and brown hare (*Lepus europaeus*), namely the grassland, hedgerows and woodland edge. The site is well connected to the suitable farmland landscape to the north and east. However, no evidence of activity was found for both species during the initial PEA or subsequent phase 2 surveys.

Evaluation

5.3.46 The habitats considered suitable for foraging western European hedgehog pertained to areas of woodland edge, hedgerows, which were present around the site boundaries and within the grassland. Overall, the habitats within the application boundary offered 'Local Value' to this species group.

6 Assessment of effects and mitigation measures

6.1 The proposed development

6.1.1 The site is the subject of a full application seeking to facilitate the development of nine residential dwellings, two offices along with associated gardens, access roads and parking. Design plans are provided within Appendix 6 of this report.

6.2 Potential Impacts to habitats and notable species on site

6.2.1 Where evaluations within Section 5 have highlighted potential constraints to protected and notable species or habitats further assessment has been made to quantify the effect of the potential constraints. GCN and white-clawed crayfish were not considered further within this section as they are not considered a constraint to the application.

Designated sites

6.2.2 Direct impacts on nearby designated sites as a result of the proposed development are considered unlikely. The application site is positioned 1.6km from the nearest statutory site and 230m from the nearest non-statutory site. The initial proposals set out for the site (Appendix 6) show that the extent of the development proposals are restricted to the site boundary, and impacts on designated sites are considered unlikely. The application site is small in extent and no impact pathways to nearby designated sites are evident.

6.2.3 The application site lies within the IRZ for Kedleston Park SSSI which lies approximately 1.6km to the north of the site, however, the proposed development does not meet the criteria for the IRZ, as such no further action is required.

Mitigation Measures

6.2.4 No mitigation measures are required for designated sites, as both direct and indirect impacts are not anticipated to the designated sites within 2km.

Habitats

6.2.5 Ground clearance will be required within the application boundary to facilitate the construction of nine residential dwellings, one office block, along with associated parking, access and gardens.

The loss pertains to grassland, woodland, bramble scrub, hedgerows and scattered trees throughout the site. Given the scale of the proposed ground clearance within the application boundary, in the absence of mitigation, a 'Negative (Not Significant) effect' on habitat quality within the site is anticipated.

Mitigation Measures

6.2.6 Based on the current layout for the proposed development, it is not possible to retain any of the habitats present on site including the grassland, woodland, bramble scrub, scattered trees and native hedgerows to the north and west. However, to mitigate for the loss of these habitats, habitats will be created including mixed scrub and scattered trees which will be created and managed for the long-term benefits as outlined within a supporting HMMP. As detailed within the section below, a net loss of habitat units on site will be incurred as a result of the proposed development.

Biodiversity Net Gain Design Proposals

6.2.7 The site comprises habitats ranging from 'Very Low' – 'Medium' distinctiveness. The baseline habitats on site provide 1.55 'Habitat units', and 1.37 'Habitat units'. The baseline habitat types recorded on site can be seen in Appendix 1.

6.2.8 An assessment of the current layout proposals, including indicative soft landscaping as shown in Appendix 6, has been made which results in 1.48 'Habitat units' and 0.14 'Hedgerow units'. This results in a loss of **-0.07 (-4.44%) 'Habitat units' and -1.23 (-89.69%) 'Hedgerow units'**.

6.2.9 The design proposals will see a net loss for 'Habitat' and 'Hedgerow' units below the required 10%, with trading rules not satisfied. In order to achieve the required 10% net gain, and reduce the scale of effect on habitat to 'Neutral', the units will be offset by a third-party provider.

6.2.10 The proposed habitats to be created are detailed within Table 10 below, with locations of habitat creation proposals outlined in Appendix 6A.

Table 10: Created habitats for the scheme

Habitat	Area (ha)/Length (km)	Target Condition	Justification for Target Condition
Modified Grassland	0.065ha	Moderate	Verges across frontages that are not forming private residential gardens will be seeded with a flowering lawn mixture (such as Emorsgate EL1 or similar approved). The seed mix provides a higher biodiversity value sward than a typical amenity seed mix. The EL1 mix (or similar) contains enough species to target essential criterion A; required to achieve 'Moderate' condition. These areas will be managed to prevent establishment of scrub and bracken cover, free of invasive species. Any bare ground or damages areas will be reseeded.
Individual Trees	0.1018ha	Moderate	25 small individual trees (>7.5cm DBH and ≤30cm) will be planted in open spaces across the scheme. These species will comprise native specimens such as oak (*Quercus sp.*), birch (*Betula pendula*) and beech (*Fagus sylvatica*). The trees will be positioned in a way that allows for 20% of canopy cover to over sail vegetation. Management and monitoring will be targeted to address any failures to establish.
Mixed Scrub	0.084ha	Moderate	Areas of mixed scrub will be placed in areas around the site. Species will include blackthorn, hawthorn, bramble and hazel. Seedlings, saplings, young shrubs and mature shrubs will be present throughout.
Line of Trees	0.027 km	Poor	A total of 27m line of trees is proposed to the south of the site. The treeline will be established with native species such as oak, hawthorn and beech. The tree line will have a continuous canopy.
Native hedgerow	0.05 km	Poor	A total of 0.05km of native hedgerow is proposed around the open space to the south of the site. The hedgerows will be established with native species such as hawthorn and blackthorn. The understorey will be seeded with a shade tolerant seed mix such as Emorsgate EH1 (or similar approved).

Breeding Birds

6.2.11 The areas of modified grassland, hedgerows, scattered trees, woodland, bramble scrub and buildings both within the application boundary and adjacent to it have been identified as being suitable for use by breeding birds. A 'Likely Negative (Not significant) effect' is anticipated as a

result of the development through the loss of suitable nesting habitat across the site. This impact is considered to be short term and reversible with the following mitigation in place.

Mitigation Measures

6.2.12 Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September, works should be avoided during this period where possible, and developers should consider and implement the options (below) appropriate to their scheme to reduce the effect to 'Neutral (Not significant)':

- Undertake demolition works to Building B1 and any vegetation clearance between the months of October and February where possible (Outside of the breeding season);
- Any vegetation proposed for removal between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works by a suitably qualified ecologist. This should confirm whether all or some clearance is achievable.
- If the demolition of Building B1 is to be undertaken between the months of March and September, the building should be subjected to a search for active birds' nests 24 hours prior to commencement of works. If birds are found to be nesting, works will need to be delayed in those areas until it is confirmed that nesting has been completed. This should confirm whether all or some clearance is achievable.
- In addition to a pre-works check the clearance of vegetation between the months of March and September should be supervised by a suitably qualified ecologist.
- Should bird nesting activity occur within the application site during any works then activity in that area will cease until the bird(s) have vacated the site (a minimum of 4 weeks). Such measures should be adhered to so as to prevent unnecessary disturbance to breeding birds or their young.

Roosting Bats

6.2.13 No roosts were identified within Building B1 subject to further dusk emergence surveys. Low levels of commuting and foraging were recorded within the application boundary pertaining to

common pipistrelle, soprano pipistrelle, noctule and myotis species. Foraging and commuting was recorded of noctule and common pipistrelle seen commuting through the site over area of modified grassland.

6.2.14 The detailed plan suggests that the existing building within the application boundary is to be demolished to facilitate the development.

Mitigation Measures

6.2.15 It should be noted that bats are highly mobile and can change roost sites throughout the year and from season to season. If the development of the site does not begin within twelve months of the initial dusk emergence survey, it will be necessary to conduct updated surveys to determine the presence/likely absence of roosting bats within this structure.

6.2.16 If bats are encountered following these updated surveys, a Natural England Bat Mitigation Class Licence or Natural England EPS Development Licence must be secured in order to continue with development works.

Foraging and Commuting Bats

6.2.17 The linear features provided by hedgerows and woodland edge were utilised by low numbers of common species. The grassland was also noted to be utilised by commuting bats in low numbers during the survey effort. Under the current proposals the woodland and grassland are to be removed. The removal of this small section was not considered to be significantly detrimental to foraging and commuting bats within the locality given the low numbers of bats recorded utilising the site during the walked transects, and the species recorded using the features for the large part being common and widespread within the county.

6.2.18 Adverse indirect impacts to the surroundings and these commuting lines through disturbance from increased lighting during and post construction is considered to have a 'Likely Negative (Not Significant) impact' upon foraging and commuting bats.

Mitigation Measures

6.2.19 Much of the boundary features pertaining to the hedgerows in site will be not be removed to facilitate the proposed development, although it should be noted they will fall within private ownership. However, it is anticipated that the retention of these hedgerows alongside the

creation of a network of vegetated gardens, individual trees, hedgerow, lines of trees and scrub will maintain the site's connectivity and foraging suitability for the low number of common species which were found to utilise it.

6.2.20 The extent of disturbance to bat commuting lines should be reduced where possible by removing vegetation outside of the bat activity season and employing a sensitive lighting scheme during construction works, with the input from a suitably qualified ecologist. Post construction, artificial security lighting should not be installed on the elevations of buildings in close proximity to hedgerows and woodland, preventing long-term disturbance to commuting lines. If flood lighting is required, this should be directed away from notable habitat for bats and overspill into dark corridors and woodland should not exceed 1lux. If lighting is not absolutely necessary, then it shouldn't be used.

Reptiles

6.2.21 Following seven survey visits, no reptiles were recorded within the suitable habitat onsite, confirming that the optimal habitat on site. The lack of survey findings suggests that it is highly unlikely that a resident population of reptiles exists within the application boundary or within connective habitats adjacent to the site. Despite this, the site still holds suitability for reptiles in the form of the grassland and hedgerows. Given the suitability of the habitat matrix on site and the transient nature of reptiles, it remains possible that individuals may utilise the habitats within the application site on an episodic basis.

6.2.22 In the absence of mitigation, direct harm or injury could be sustained to individuals during ground clearance posing an 'Unlikely Negative (Not significant) effect'. The below recommended mitigation measures will reduce the effects to 'Neutral (Not significant)'.

Mitigation Measures

6.2.23 Given their protection, development must be sympathetic to the value of this habitat and potential impacts on reptiles. The following reasonable avoidance measures will be followed during the construction phase to prevent reptiles colonising any potential habitat incidentally created by spoil, open trenches or arisings.

- All materials to be stored off the ground (for example on pallets) to minimise the likelihood of herptiles accessing them for refugia.

- All spoil/waste materials to be removed from site at the end of each working day (or stored in a skip).

Badgers

6.2.24 Certain protected species including badger sett locations are sensitive in nature, and due to the risk of public interference are kept confidential. A discussion on impacts to badger and suggested mitigation is included within **confidential** Appendix 10.

Otter and Water Vole

6.2.25 The otter and water vole surveys returned no evidence of either species within the site or within the wider area surveyed. Both otter and water vole were found to be likely absent from the habitats within the red line boundary and 30m impact zone. However, due to the transient nature of the species, precautionary working methods will be implemented to safeguard these protected species in order to reduce the 'unlikely Negative (Not significant) effect' to a 'Neutral effect'.

Mitigation Measures

- Precautionary working measures will be implemented into the construction phase of the development in order to safeguard the stream on site, to be detailed within a Construction Ecological management Plan (CEMP).

- Any excavations left overnight are to be covered at the end of each working day, or include a means of escape, such as wood planks. In addition, any temporary exposed open pipe systems are to be capped in such a way to prevent otters gaining access.

Mammal Species of Principle Importance

6.2.26 Impacts and mitigation relating to common pipistrelle, soprano pipistrelle and noctule have been detailed within the bat sections of this report.

6.2.27 The application site is likely to support foraging western European hedgehog and brown hare particularly along the woodland edge or the hedgerows defining the site boundaries as well as within the scrub and tall ruderal herbs located within the areas of grassland. The ground clearance works necessary to prepare the site could result in injury or death of these species of principle importance, presenting a 'Negative (Not significant)'. The development proposals

suggest that the hedgerows around the periphery of the site are to be retained following the development reducing the likelihood of a significant effect to hedgehog, however further mitigation should be implemented to safeguard this species.

Mitigation Measures

6.2.28 Habitat considered suitable for supporting western European hedgehogs and brown hare should be retained around the periphery of the site (Appendix 11), and vegetative connectivity through the site should be maintained. If individuals are found during ground clearance works, works should cease until the individual has been moved into the open space within the south-western corner of the site (Appendix 11). Once removed, the area should be searched, and works can recommence. Additionally, in order to safeguard against any mammal species, the following must be implemented:

- Ramps within open excavations to avoid mammal entrapment (minimum a 45-degree angle and in place every 20-30m).
- Reduction in speed limits.
- Appropriate storage methods for potentially harmful chemicals.
- Cap any exposed pipes overnight and when contractors are off site.
- Any stockpiled soil bund must be checked for evidence of badgers each day prior to any movement onto or off the bund.
- Removal of scrub habitat should be sensitively undertaken, clearing small sections at a time. If entrances are noted works should cease and Brindle & Green ecology ream should be contacted.

6.2.29 In the unlikely event that an individual does become entrapped, or any entrances are noted during works, an ecologist should be contacted for further advice as soon as possible. **No attempt should be made to catch the animal/s and all staff should move away from the area to avoid stressing the animal further, unless in immediate danger.**

6.3 Residual effects of proposed development

6.3.1 The measures proposed within the above sections will mitigate all 'Negative effects' to a level where the constraint is not considered significant or negative in terms of EcIA. Upon completion there should be no adverse residual effects as a result of the development.

6.4 Cumulative effects

6.4.1 The mitigation and impact avoidance measures proposed for each ecological receptor should be secured through planning condition or obligation. At the time of writing there are no further consented developments within the local area, so a cumulative effect is not predicted, and upon successful implementation of these measures the site will increase the value of the site in terms of local biodiversity.

7 Compensation, Enhancement and Monitoring

7.1 Compensation

7.1.1 Compensatory measures will be required within this scheme of works to compensate the loss of habitat units on site, as well as achieve the required net gain for hedgerow units. The onsite provisions do not achieve the target net gain for habitat and hedgerow units and do not satisfy the hedgerow units. The required units will be provided by a third-party provider.

7.2 Enhancement

7.2.1 In light of the National Planning Policy Framework (NPPF) that seeks net biodiversity gain within developments and the NERC act that stipulates an authorities duty to conserve and enhance biodiversity the following enhancements are suggested (all enhancements should be overseen by an appropriate experienced ecologist):

Habitats

7.2.2 The construction of a HMMP for the site will secure enhancements and appropriate landscape treatments to enhance biodiversity within areas of open space. Landscape treatments carried out on site is to undertaken using locally abundant, native species which can tolerate a range of climatic conditions. Open space should be managed to benefit local biodiversity following an appropriate management plan and seek to compensate for loss of habitats on site. Loss of vegetative features should be compensated for by planting native scrub, the reseeding of grassland and the planting of native trees within an appropriate area identified within the site mater plan. The HMMP for the areas of created habitat should be complied and a long-term maintenance scheme should be secured for 30 years.

Bats

7.2.3 Post construction landscape treatments should be sympathetic to bat species and seek to enhance open space for bat species.

7.2.4 The proposed development should seek to provide roosting provisions within 10% of the proposed dwellings. During construction Ibstock integrated bricks (or similar approved) should be positioned on elevations facing a south – south easterly direction at a height of above 4m.

7.2.5 To provide additional roosting opportunities for common bat species and mammals of principle importance, oak Kent boxes (or similar approved). Two boxes should be integrated on mature trees around the site, in clusters facing in a southernly, easternly or westerly direction, above 5m in height. The specific location of bat mitigation should be secured within a CEMP.

Birds

7.2.6 Nine No 17A Triple Cavity swift boxes should be integrated onto the north or north-easternly elevations of created buildings. Additionally, two x 1B Schwegler bird boxes in the following sizes 2 x 26mm Hole, 1 x Oval Hole should be positioned on suitable trees throughout the site, with entrance holes directed towards the north and east to avoid strong sunlight and driving rain. The bird boxes should be positioned at a height of between 2 and 4m during the autumn.

7.2.7 The HMMP should secure the inclusion of soft landscape treatments in the form of native trees, hedgerows and shrubs planted across the site to offset any loss of vegetation and to provide supplementary habitat for breeding birds within the area. It is recommended that these species be of local provenance and contain seed- or fruit-bearing species.

Mammal Species of Principle Importance

7.2.8 The proposed development should seek to construct suitable hibernacula within the open space positioned within the easternly section of the application site. The hibernacula consist of brash piles, formed from the cuttings from the vegetation clearance. The position of the hibernacula should be secured within a CEMP.

7.3 Monitoring

7.3.1 As a result of the low impact of the proposed development, no post construction monitoring for protected species is required, however the created habitats will require monitoring to ensure they achieve the targeted conditions as set in a HMMP.

7.3.2 If works do not commence within two years of the UK Habitat Survey, and one year of the phase 2 surveys, the baseline conditions may need to be reassessed following best practice guidelines (CIEEM, 2018).

8 Conclusions

8.1.1 The application site at Bowbridge Garage, Derby has been the subject of a series of habitat and protected species surveys undertaken following best practice guidelines. The site was found to support habitats at 'Local Value' (Table 3).

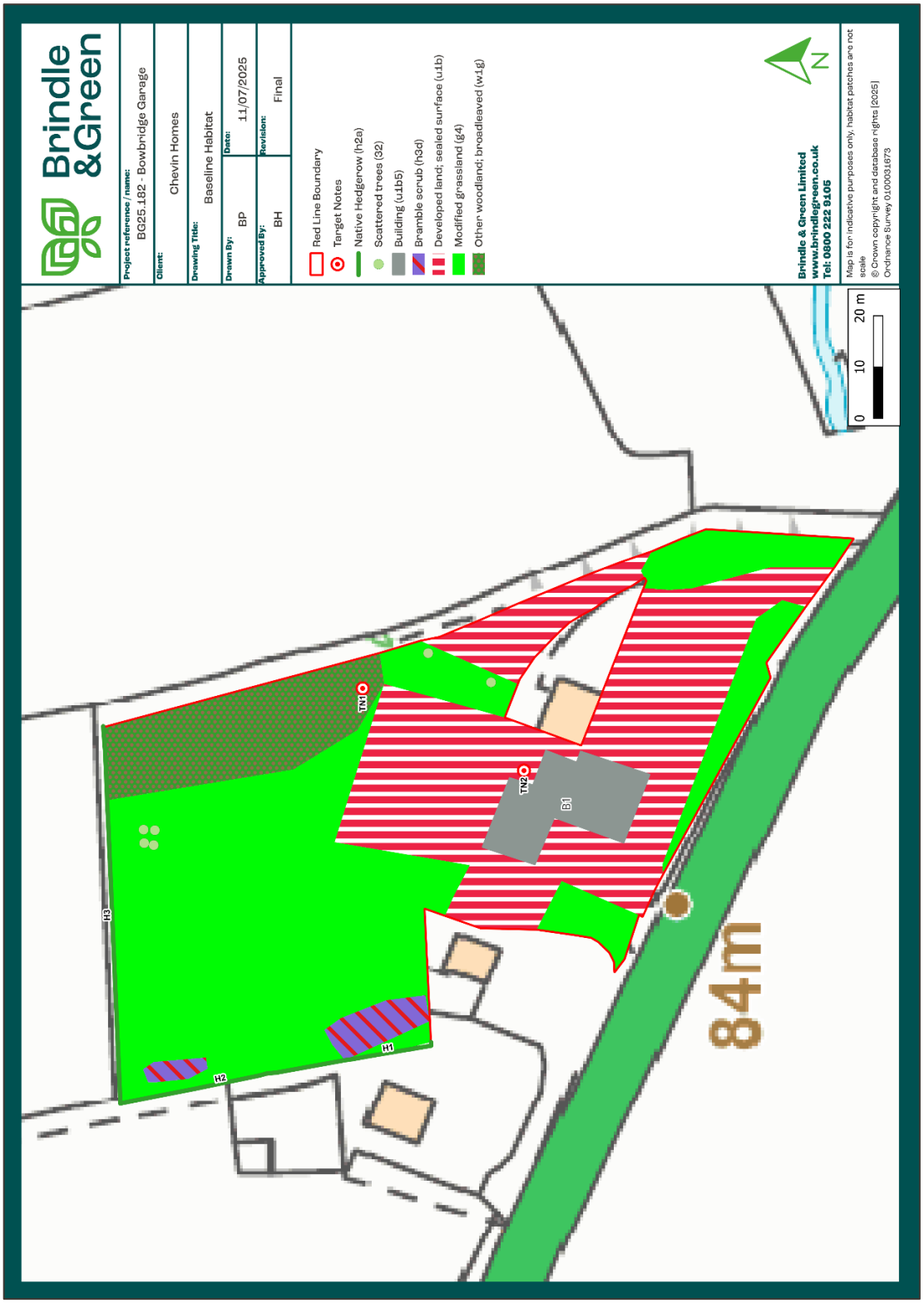
8.1.2 The UKHab survey and phase 2 surveys confirmed that retained habitats, birds, foraging and commuting bats, roosting bats, badgers, reptiles and otter had a potential to be negatively affected by the proposed development and as such mitigation measures have been created to safeguard the status of these protected and notable species, reducing the effect to neutral or a positive effect.

8.1.3 No roosts were identified within the building subjected to further survey, and as such, roosting bats are not considered to be an ecological constraint to the proposed development, as long as the works (i.e. demolition) are undertaken within a year of the initial emergence survey. If this is not possible then updated emergence survey would be required, as bats are a highly mobile species.

8.1.4 The mitigation proposals detailed in Section 6 successfully address the potential impacts from the development to comply with both wildlife legislation and policy.

8.1.5 The mitigation strategies outlined in Section 7, above, should be secured through planning condition or obligation, to ensure that a negative effect for local wildlife populations and biodiversity is avoided and potentially enhanced through the landscape plan and prevent residual effects. The habitats recorded during the baseline survey were locally frequent and of low ecological value. As a result, the loss of these habitats is not considered to be significant. The construction of nine residential dwellings and an office block, and open space onsite will improve the structural and botanical diversity on site enhancing the application site for a number of local species populations.

Appendix 1 – UK Habitat Classification Plan



Appendix 2 - Target Notes

Table 11: Target Notes

Target note number	Description
1	Concrete, tyres and fence panels, potential for amphibians and reptiles. Located at SK 30583 38192. 
2	Pile of brick with potential for reptiles, amphibians and hedgehogs. Located at SK 30570 38159. 

Target note number	Description
3	Tall ruderal herbs within grassland, alongside ditch. Located at SK 30626 38100. 

Table 12: Plant Species List with DAFOR Scale

Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.

Please note that this plant species list was generated as part of a Phase 1 Habitat survey and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Ash	*Fraxinus excelsior*	O
Bittercress	*Cardamine hirsuta*	R
Blackthorn	*Prunus spinosa*	F
English bluebell	*Hyacinthoides non-scripta*	O
Borage	*Borago officinalis*	R
Bramble	*Rubus fruticosus*	A
Bristly oxtongue	*Helminthotheca echioides*	O
Cats ear	*Hypochaeris radicata*	R
Cleavers	*Galium aparine*	F
Common nettle	*Urtica dioica*	F
Cow parsley	*Myosotis sylvatica*	O
Creeping buttercup	*Ranunculus repens*	F
Curled dock	*Rumex crispus*	O
Daffodils	*Narcissus pseudonarcissus*	F
Daisy	*Bellis perennis*	F
Dandelion	*Taraxacum officinale*	O
Dogrose	*Rosa canina*	R
Elder	*Sambucus nigra*	O
Field maple	*Acer campestre*	F
Forget-me-nots	*Myosotis sylvatica*	O
Goat willow	*Salix caprea*	F
Hairy tare	*Vicia hirsuta*	R
Hawthorn	*Crataegus monogyna*	A
Hazel	*Corylus avellana*	O
Hedge bindweed	*Calystegia sepium*	R
Herb robert	*Geranium robertianum*	O
Hogweed	*Heracleum sphondylium*	F
Horse chesnut	*Aesculus hippocastanum*	R
Ivy	*Hedera helix*	F
Lords and Ladies	*Arum maculatum*	O
Pendunculate oak	*Quercus robur*	F
Perennial rye	*Lolium perenne*	D
Prickly sowthistle	*Sonchus asper*	R
Red deadnettle	*Lamium purpureum*	R
Rosebay willowherb	*Chamaenerion angustifolium*	O
Rough chervil	Chaerophyllum temulum	A
Spear thistle	Cirsium vulgare	O
Square-stalked willowherb	Epilobium tetragonum	O
Teasle	Dipsacus fullonum	O
Tufted vetch	Vicia cracca	F
Wood anemone	Anemone nemorosa	O

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Wood spurge	Euphorbia amygdaloides	R
Yarrow	Achillea millefolium	O
Yorkshire fog	Holcus lanatus	O

Appendix 3 – General References

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Appendix 4 – Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. (2023)
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- The Protection of Badgers Act 1992
- The Natural Environment and Rural Communities Act 2006 (Including National and Local Biodiversity Action Plan (LBAP/HPI))
- Hedgerow Regulations 1997
- The Environment Act 2021
- Town and Country Planning Act 1990

Appendix 5 – Legislation, Guidance and Methodology

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February/March and continue through until September/October, however breeding birds can be found all year round depending on the given species and climatic conditions.

A sites habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:

- Gilbert G, Gibbons DW, Evans J. (1998) Bird Monitoring Methods. RSPB.

Bats

Roosting Bats

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017 (as amended). It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

Areas of concern; can be encountered in many types of structure and care should therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with:

- Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines, (4th edition). Bat Conservation Trust, London. ISBN-978-1-7395126-0-6 (Table 13,

- Table 14 and
- Table 15).

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points. The suitability of site features are also assessed because absence of bat evidence, is not confirmation of a negative result.

Within trees, features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree. If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys will be recommended.

Foraging and Commuting bats

Habitat features on site are assessed for their suitability to support foraging and commuting bat populations. This assessment is independent from the suitability of the site to support roosting bats, and provides information on the likeliness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Table 13: Guideline for assessing the suitability of a structure to support roosting habitat amended from Collins, J (2023)

Category	Description of Roosting Habitat	Number of additional presence / absence surveys required
None	No habitat features on site likely to be used by roosting bats at any time of year (complete absence of potential roosting features).	None
Negligible Suitability	Suitable cavities may exist, but these are less than ideal. Uncertainty remains as bats can use these features on occasion.	None
Low Suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. The feature and surrounding habitat do not provide enough shelter, conditions* space for larger roost types such as a maternity or hibernation roost.	One survey between May and August

Category	Description of Roosting Habitat	Number of additional presence / absence surveys required
Moderate Suitability	A structure considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed).	Two surveys between May and September (with at least one survey undertaken between May and August). Surveys should be spaced at least 3 weeks apart.
High Suitability	A structure 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.	Three surveys between May and September (with at least two surveys undertaken between May and August). Surveys should be spaced at least 3 weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	

* In this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc

Table 14: Guideline for assessing the suitability of a tree to support roosting habitat amended from Collins, J (2023)

INITIAL STAGE (Site scoping/PEA/PRA)		
Category	**Description**	**Survey effort to establish the presence/absence of bats**
NONE	Either no PRFS in the tree or unlikely to be any	None
FAR	Further assessment required to establish if PRFs are present in the tree	Ground Level Tree Assessment (GLTA) to further assess suitability
PRF	A tree with at least one PRF present	Ground Level Tree Assessment (GLTA) to further assess suitability
DETAILED STAGE (PEA/PRA/GLTA)		
PRF - I	PRF only suitable for individual bats or small numbers of bats due to size or lack of suitable surrounding habitats	None – precautionary method of works for removal and provision of roosting compensation
PRF - M	PRF suitable for multiple bats and may therefore be used by a maternity colony	Three Climbing inspection surveys for features to be undertaken May to September with at least 2 May to August. Surveys should be 3 weeks apart. If climbing and inspection not possible, 3 dusk emergence surveys with NVAs (Night Vision Aids) to be undertaken May to to September with at least 2 May to August. Surveys should be 3 weeks apart. Should a maternity colony be confirmed less invasive methods, such as dusk emergence survey with NVAs should employed.
Known roost	Known roost present through local records, evidence, sightings, etc	Three Climbing inspection surveys for features to be undertaken May to September with at least 2 May to August. Surveys should be 3 weeks apart. If climbing and inspection not possible, 3 dusk emergence surveys with NVAs (Night Vision Aids) to be undertaken May to to September with at least 2 May to August. Surveys should be 3 weeks apart. Should a maternity colony be confirmed less invasive methods, such as dusk emergence survey with NVAs should employed.

Table 15: Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins, J (2023)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Suitability	Negligible habitat features on site likely to be used by commuting or foraging bats.	None
Low Suitability	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected over a five-night period, per season. (Spring – April/May, Summer (June/July/August) – autumn – September/October).
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected over a five-night period, per month (April to October)
High Suitability	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses, and grazed parkland. Site is close to and connected to known roosts.	Nighttime bat walk (NBW) survey: One survey visit per active season (Spring – April/May, Summer (June/July/August) – autumn – September/October). AND Static automated surveys: Data to be collected over a five-night period, per month (April to October)

** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis

Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:

- Harris S, Cresswell P and Jefferies D (1989). Surveying Badgers.

During the PEA, the site and the 30-metre zone of Influence considered for this species are searched for evidence of badger activity. The surveyor will identify evidence of activity, or habitat suitability for this protected species. Even If no evidence of badger activity is found, if local conditions suggest that the habitat may be suitable for badger, further surveys will be recommended.

Amphibians

The great crested newt and natterjack toad are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt, is fully protected under the Conservation of Habitat Regulations 2017 (as amended), making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond. Sites should be considered suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500m of the development or the development site includes suitable terrestrial habitat refuges.

Great crested newt site assessments are undertaken in accordance with:

- English Nature. (2001) Great Crested Newt Mitigation Guidelines. English Nature, Peterborough. And
- Langton T, Beckett C and Foster J (2001) Great Crested Newt Conservation Handbook. Froglife, Halesworth.

Prior to a site visit, a desk study pond search is undertaken. When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location. The following online sources are used:

OS MAPPING VIA EMAPSITE

GOOGLE EARTH PRO,

GOOGLE MAPS and

MAGIC MAPS

Each identified pond (Access permitting) is subjected to a Habitat Suitability Index (HSI) assessment providing a score for each pond. This survey should be undertaken during the summer period to be fully accurate, however assumptions can be made out of season to guide survey recommendations.

Reptiles

Two species of reptile, the sand lizard and smooth snake, and their habitats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed, undisturbed areas, such as areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. If these types of suitable features are found then further reptile surveys are recommended.

- Edgar P, Foster J and Baker J (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.
- Gent T and Gibson S (2003) Herpetofauna Workers Manual. JNCC, Peterborough.

Otter (*Lutra lutra*)

Otters are fully protected as a European Protected Species (EPS) under the Habitat Regulations 2017 (as amended) and are also listed under Schedule 5 and 6 of the Wildlife & Countryside Act 1981 (as amended). Their legal protections make it an offence to, recklessly or intentionally, capture, kill disturb or injure otters, to damage or destroy a breeding or resting place (holt), to obstruct access to a place of rest or shelter and to possess, sell, control or transport live or dead otters or parts thereof.

Habitat assessments for otters were informed by:

- Chanin P (2003b) Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No 10

Otters have been recorded utilising almost every type of waterbody and watercourse in the UK including rivers, streams, canals, lakes and ponds and although most populations in England and Wales are usually restricted to freshwater, coastal populations are present in Scotland. They will also use small streams and ditches (including dry ditches) as regular commuting routes and are found in a range of situations from rural to heavily urban sites.

Surveys are recommended where the proposals have the potential to result in a breach of protective legislation listed above. Surveys can be undertaken at any time of year (however optimal timing in spring when water levels fall and prints can be readily observed in soft mud). Surveys focus on searching for evidence of otter presence including spraints, prints, feeding remains and otter slides. They also include searching for resting places such as holts, couches and natal dens.

Water Vole (*Arvicola amphibius*)

The water vole receives full protection Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Legal protection makes it an offence to intentionally kill, injure or take (capture) a water vole. It is also an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place.

Water vole site assessments were undertaken in accordance with:

- Strachan R. Moorhouse T, and Gelling M (2011) Water Vole Conservation Handbook.(3rd Edition) Wildlife Conservation Research Unit.

Water vole are usually found along water bodies that have still or slow flowing deep water with an abundance of bankside herbaceous vegetation. Such areas include dykes, rivers, streams and drains, but they can also be found on isolated large ponds.

If these types of suitable features are found during a PEA, then water vole surveys are recommended.

White-Clawed Crayfish (*Austropotamobius pallipes*)

White clawed crayfish are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Section 9 of the Act prohibits the intentional killing, injuring or taking of species listed under Schedule 5 and also prohibits the possession or trading of species listed under the act, dead or alive.

White clawed crayfish habitat includes streams, canals, rivers and quarry pools, typically those areas with hard mineral-rich water on calcareous or rapidly-weathering rocks. Suitable habitats usually provide refuges which they can use for shelter from predation or from strong currents. These can be natural or artificial and include rocks, tree roots, overhanging banks and rock baskets. Crayfish populations tend to avoid watercourses with uniform clay channels, areas of deep silting, watercourses which lack refuge opportunity.

Habitat assessments for white clawed crayfish were informed by:

- Holdich D (2003). Ecology of the White-clawed Crayfish. Conserving Natura 2000 Rivers Ecology Series No. 1. English Nature, Peterborough
- Peay, S (2000). Guidance on works affecting white-clawed crayfish. English Nature, Peterborough.

Surveys are recommended where the proposals have the potential to result in a breach of protective legislation listed above. Optimal timing for surveys is mid-July to mid-September, and methods include night-time surveys by torchlight, or manual searching in clear watercourse where water levels are low and turbidity is low enough to enable surveyors to identify crayfish to species-level without the need for handling.

Invasive non-native weeds

Plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) are examples of invasive non-native weeds classified under Part II of Schedule 9 of the Wildlife and Countryside act 1981. Any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. The plant and the soil these species are found growing in are classified as waste material and should be treated as such.

A simple walk over survey of the site to determine if these species are present was carried out during the PEA. A full list of Schedule 9 species can be found at Plantlife.org

Invertebrates

The following invertebrates are European protected species and it is considered an offence if you capture, kill, disturb or injure, on purpose or by not taking enough care. It is also against the law to damage or destroy a breeding or resting place, obstruct access to their resting or sheltering places, possess, sell, control or transport live or dead protected invertebrates, or parts of them.

- Large blue butterflies (eggs, caterpillars, chrysalises and adults)
- Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults)
- Little ramshorn whirlpool snails

Approximately 400 additional species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981 and S41 of NERC Act 2006.

If suitable habitat for invertebrates is identified during the PEA further surveys will be recommended.

Ecological Enhancement

In March 2023 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - opportunities to incorporate biodiversity in and around developments should be encouraged.

For new buildings guidance such as in the following will be used:

- Williams, C. (2010) Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build. Riba Publishing.

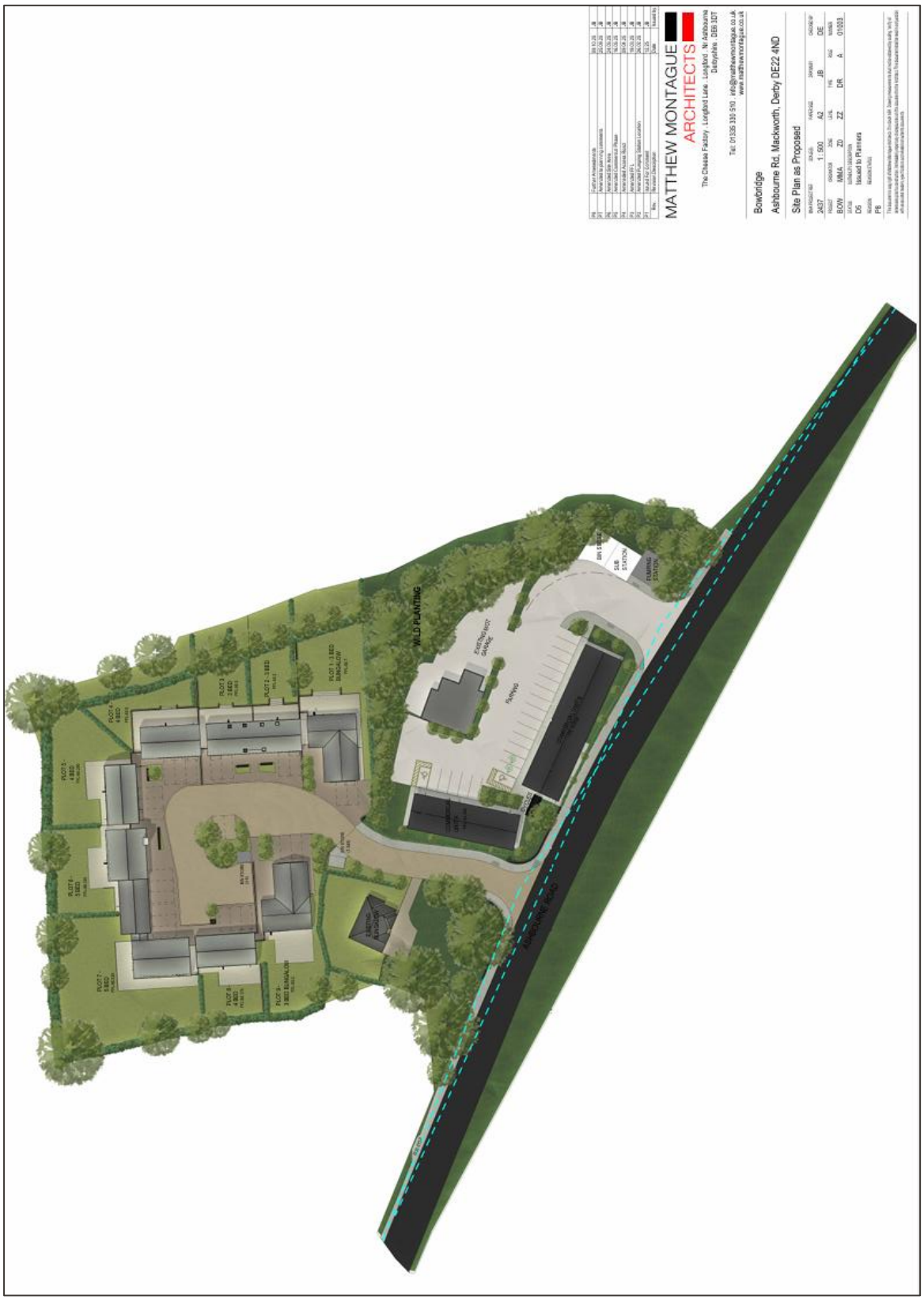
Designated Sites

Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats support.

Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

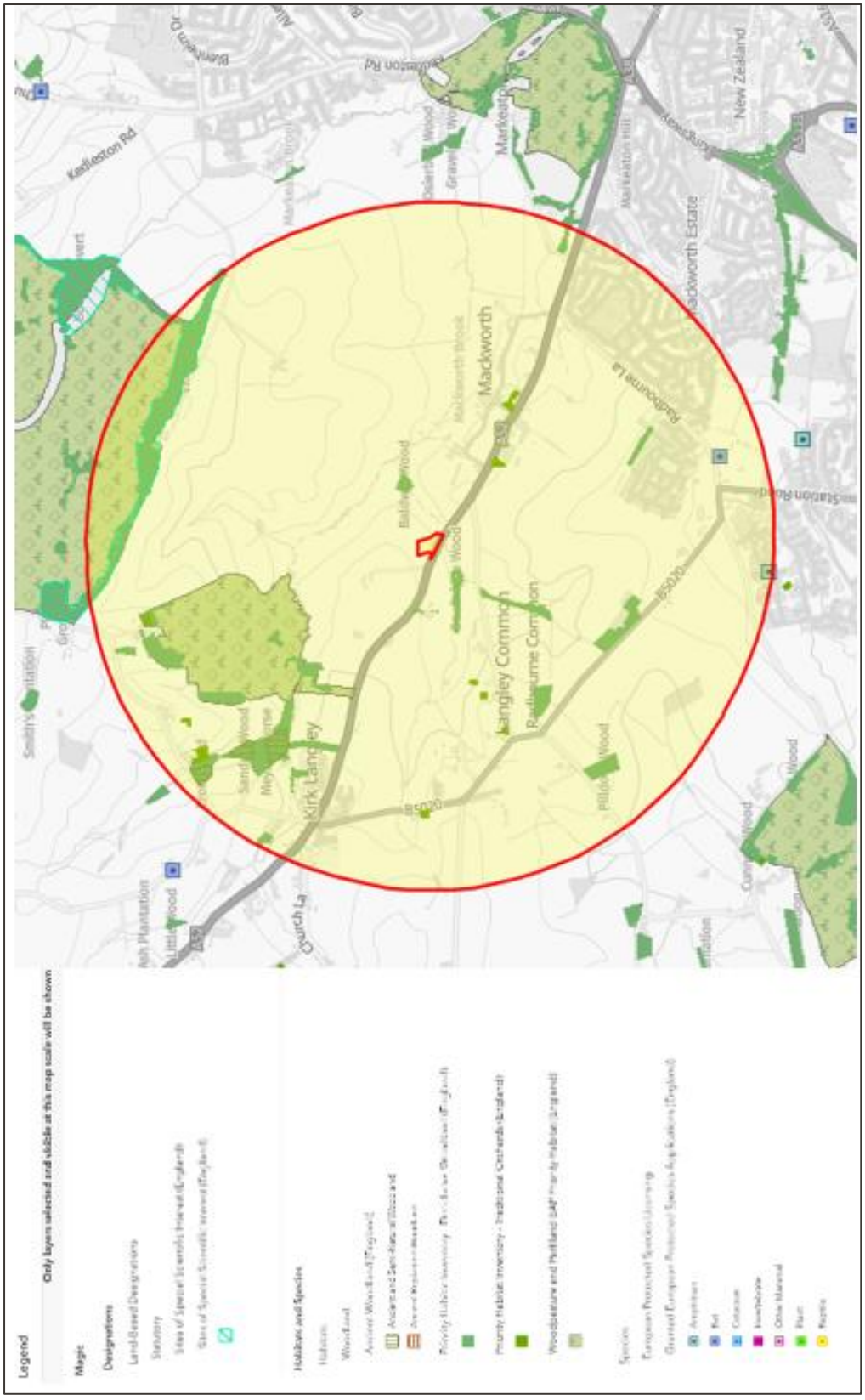
Appendix 6 – Proposed Plans



Appendix 6A – Post Development Habitat Map



Appendix 7 – MAGIC data



Site Check Results

Site Check Report generated on Tue May 20 2025

The following features have been found in your search area:

You selected the location: Centroid Grid Ref: SK30553814

Sites of Special Scientific Interest (England)

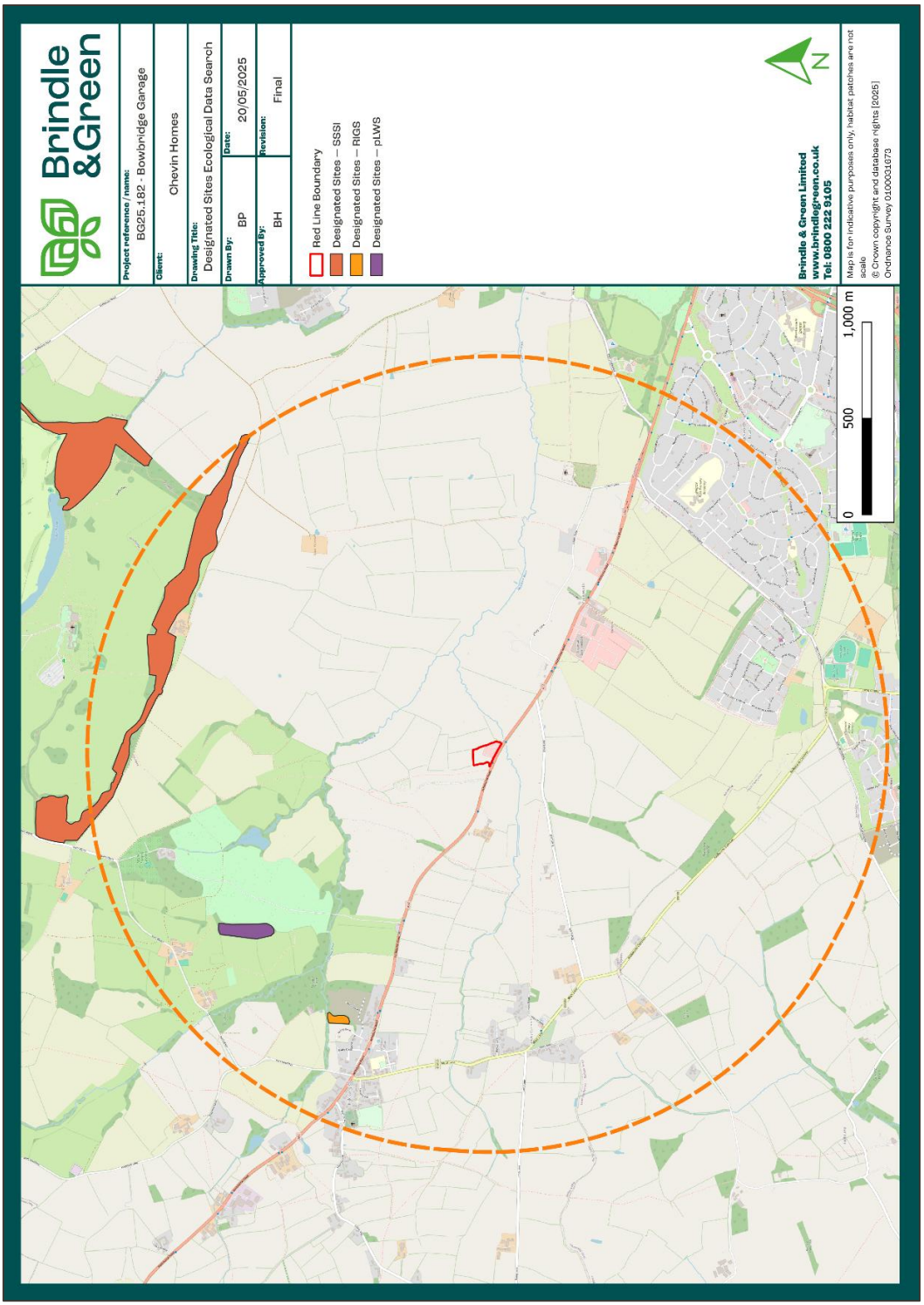
NAME	Kedleston Park SSSI
REF_CODE	1002037
STAFF	Area Delivery, (East Midlands)
CONTACT_NO	0845 600 3078
MEASURE	93.53
HYPERLINK	2000180
HOTLINK	http://designatedsites.naturalengland.org.uk/SiteDetail.aspx?SiteCode=s2000180
Site_Feature_Condition_Hyperlink	https://designatedsites.naturalengland.org.uk/SiteFeatureConditior SiteCode=s2000180&SiteName=Kedleston Park SSSI

Granted European Protected Species Applications (England)

CASE_REF	EPSM2013-6346
SPECIES_GR	Bat
SPECIES_DE	C-PIP
SITE_COUNT	Derbyshire
LICENCE_ST	03/10/2013
LICENCE_EN	30/09/2014
AFFECTS_BR	N
DAMAGE_BRE	
DAMAGE_RES	
DESTROY_BR	N
DESTROY_RE	Y
AFFECTS_HI	Unknown
NERC_AGREE	Unknown

SPECIES_GR	Amphibian
SPECIES_DE	Great crested newt
SITE_COUNT	Derbyshire
LICENCE_ST	08/09/2017
LICENCE_EN	30/06/2025
AFFECTS_BR	N
DAMAGE_BRE	N
DAMAGE_RES	Y
DESTROY_BR	N
DESTROY_RE	Y
AFFECTS_HI	Unknown
NERC_AGREE	Unknown
CASE_REF	2017-30635-EPS-MIT-1
SPECIES_GR	Amphibian
SPECIES_DE	Great crested newt
SITE_COUNT	Derbyshire
LICENCE_ST	20/11/2017
LICENCE_EN	31/12/2026
AFFECTS_BR	N
DAMAGE_BRE	N
DAMAGE_RES	Y
DESTROY_BR	N
DESTROY_RE	Y
AFFECTS_HI	Unknown
NERC_AGREE	Unknown
CASE_REF	2017-30635-EPS-MIT-2
SPECIES_GR	Amphibian
SPECIES_DE	Great crested newt
SITE_COUNT	Derbyshire
LICENCE_ST	23/10/2019
LICENCE_EN	31/12/2026
AFFECTS_BR	N
DAMAGE_BRE	N
DAMAGE_RES	Y
DESTROY_BR	N
DESTROY_RE	Y
AFFECTS_HI	Unknown
NERC_AGREE	Unknown

Appendix 8 – Ecological Data Search Information



Appendix 9 – Protected Species Surveys

Appendix 9A Bat Activity Surveys

Survey Conditions

Table 16: Weather conditions for bat activity surveys

Survey No.	Date	Start time	End time	Sunset time	Weather details
Summer	26/08/2025	20:08	22:22	20:08	Temperature started at 17°C and was 17°C by the end of the survey. Humidity starting at 68% increasing to 78%, 0/8 rain, BF1 wind, and 3/8 cloud cover.
Autumn	02/10/2025	18:40	20:50	18:40	Temperature started at 17°C dropping to 16°C by the end of the survey. Humidity starting at 70% increasing to 76%. 1/8 rain, BF3 wind, and 8/8 cloud cover.

Table 17: Assessment score for commuting bats (Wray et al, 2010)

Species	Rarity	Number of bats	Roost nearby?	Complexity of linear features	Total
Soprano pipistrelle	2	5	4	3	14 - District
Common pipistrelle	2	5	4	3	14 – District
Noctule	5	5	4	3	14 – District
Myotis sp.	5	5	4	3	14 - District

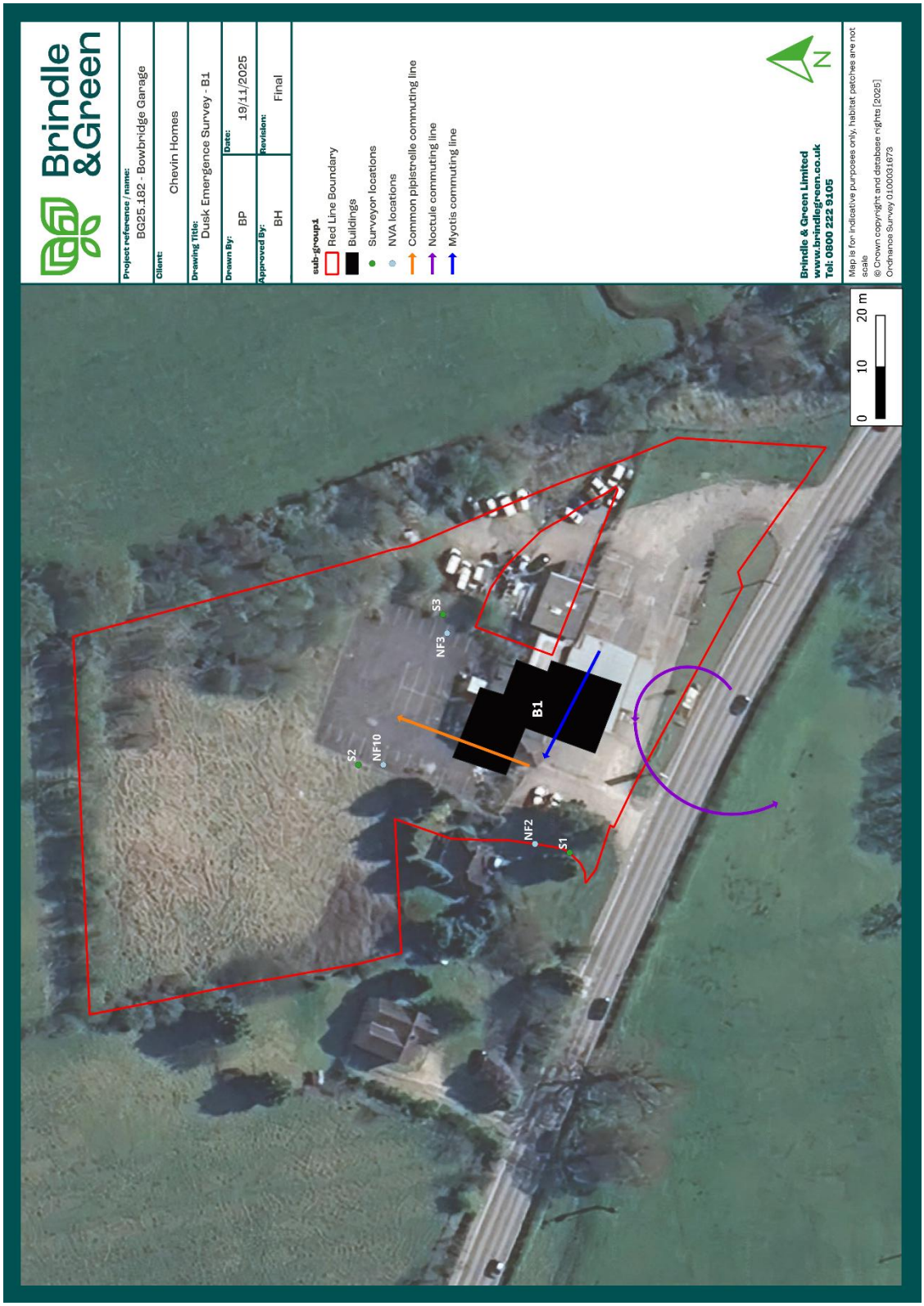
Table 18: Assessment score for foraging bats (Wray et al, 2010)

Species	Rarity	Number of bats	Roost nearby?	Foraging habitat characteristics	Total
Soprano pipistrelle	2	5	4	3	14 - District
Common pipistrelle	2	5	4	3	14 – District
Noctule	5	5	4	3	14 – District
Myotis sp.	5	5	4	3	14 - District


LP4
LP5
LP6
S2
LP7
LP3
LP1
LP10
LP9
LP8
LP2
S1
Start
0
10
20 m
Brindle &Green
Project reference / name:
BG25.182 - Bowbridge Garage
Client:
Chevin Homes
Drawing Title:
Night time Bat Walkover - Summer
Drawn By:
BP
Date:
19/11/2025
Approved By:
BH
Revision:
Final
Red Line Boundary
Common Pipistrelle commuting route
Point Counts
Static Locations
Transect Route
N
Brindle & Green Limited
www.brindlegreen.co.uk
Tel: 0800 222 9105
Map is for indicative purposes only, habitat patches are not scale
© Crown copyright and database rights [2025]
Ordnance Survey 0100031673


LP7
LP6
LP5
LP4
LP8
LP10
LP1
LP2
LP3
LP9
Start
0
10
20 m
Brindle &Green
Project reference / name:
BG25.182 - Bowbridge Garage
Client:
Chevin Homes
Drawing Title:
Night time Bat Walkover - Autumn
Drawn By:
BP
Date:
19/11/2025
Approved By:
BH
Revision:
Final
Red Line Boundary
Noctule commuting route
Point Counts
Transect Route
Brindle & Green Limited
www.brindlegreen.co.uk
Tel: 0800 222 9105
N
Map is for indicative purposes only, habitat patches are not scale
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Ordnance Survey 0100031673

Appendix 9B – Bat Emergence Survey Results



Appendix 9C – Reptile Survey Results



Appendix 9D Otter and Water Vole Survey

Table 19: Weather data for otter and water vole surveys

Survey No.	Date	Temperature (°C)	Wind (0-8)	Rain (0-8)	Cloud (0-8)
1	22/08/2025	17	BF1	0	1

Table 20: HSA of tributary completed on 22/08/2025

Habitat Suitability Feature	Visit 2 - 12/08/2025 Fowle Brook				
	Score (1 if present)				
	1	2	3	4	5
Well-developed (>60%) bank side and emergent vegetation to provide cover	0	0	0	0	1
Year-round availability of food sources	0	0	0	0	0
Suitable refuge areas above extremes in water levels	1	1	1	1	1
Steep banks suitable for burrowing	1	1	0	1	1
Permanent open water	1	1	1	1	1
Presence of berm (ledge at water level)	0	1	1	1	1
Lack of disturbance through poaching, grazing and/or recent management	0	0	0	0	0
Nest building opportunities in vegetation above water level	0	0	0	0	0
Total Score:	**3**	**4**	**3**	**4**	**5**

Appendix 10 – Confidential Badger Records

Desk Study

The desk study returned two records of badgers within 2km of the site as show in Table 21 below.

Table 21: Confidential badger records

Species	Grid Ref.	Date	Description
Badger	SK2938	2017	Present Sett, 16 entrances main sett, outliner within grassland. Record located 1.6km from the site.
Badger	SK3039	2017	Present Sett, located 1.7km from the site.

Results

The Zone of Influence relating to badgers was considered to be within the application site and the immediate connective habitat.

The application site supported habitat features such as hedgerows and modified grassland which provide suitable commuting habitat for this transient species, which are highlighted as present in the wider environment following a review of the data search. A single day-time walkover survey was undertaken on the 22nd August 2025 found no evidence of badger setts, or activity such as mammal runs, snuffle holes or latrines were found during the ecological appraisal of the site or the zone of influence. However, a mammal entrance was observed off-site located c.13m east of the site boundary.

Table 22: Confidential supporting photographs of recorded badger activity

Image	Description
Photograph 1	
	Mammal hole, suspected to comprise an inactive partially collapsed rabbit hole due to its size and shape, and due to the presence of vegetation covering the entrance.

Evaluation

Under the Protection of Badgers Act 1992, in England and Wales it is an offence to wilfully kill, injure, disturb or take any badger, or intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

As a result of the site extent and the location within an agricultural dominated landscape it is considered that badgers could use the site for foraging and commuting purposes on an episodic basis but are not dependant on the site. The site supports suitable connective and foraging habitat for badgers of 'Site Value'. Badgers are considered to be absent from the site, however the transient nature of this species could result in individuals foraging or commuting through the zone of influence of the proposed development.

No evidence that could be directly attributed to badger, setts, snuffle holes and latrines were found within the site. The site supported some features considered conducive to this species, however given the scale of the habitat and connectivity to more expansive areas of suitable habitat, it is considered the site may be used by individuals on an intermittent basis. As such, it is considered that the proposed development had the potential to result in a 'Negative (not significant) effect' on badgers that may utilise the habitats on site on an episodic basis. Therefore, recommended mitigation measures will reduce the effects to 'Neutral (Not significant)' and primarily invoice adhering to safe working practices and reasonable avoidance measures during the construction phase.

Mitigation Measures

The following appropriate precautions should be employed during construction works to prevent harm to this protected species.

- A walkover survey should be conducted within the Zone of Influence (the site and 30m perimeter of boundary) prior to the commencement of works to identify if badgers have become active within the proposed development.

- An ecological 'toolbox talk' should be provided to all site personnel prior to development works commencing. The 'toolbox talk' should include information pertaining to the ecology and protection of badgers, a brief description of field signs and who to contact should badgers be encountered during development works.

- Any excavations left overnight are to be covered at the end of each working day, or include a means of escape, such as wood planks. In addition, any temporarily exposed open pipe systems are to be capped in such a way as to prevent badgers gaining access.

- Do not store spoil heaps or brash piles on site. These should be removed to prevent the opportunistic use by badgers.

- Should badgers or any evidence of badgers be encountered during the walkover or construction phase, all works should cease, and the advice of an ecologist sought. **No attempt should be made to catch the animal/s and all staff should move away from the area to avoid stressing the animal further.**

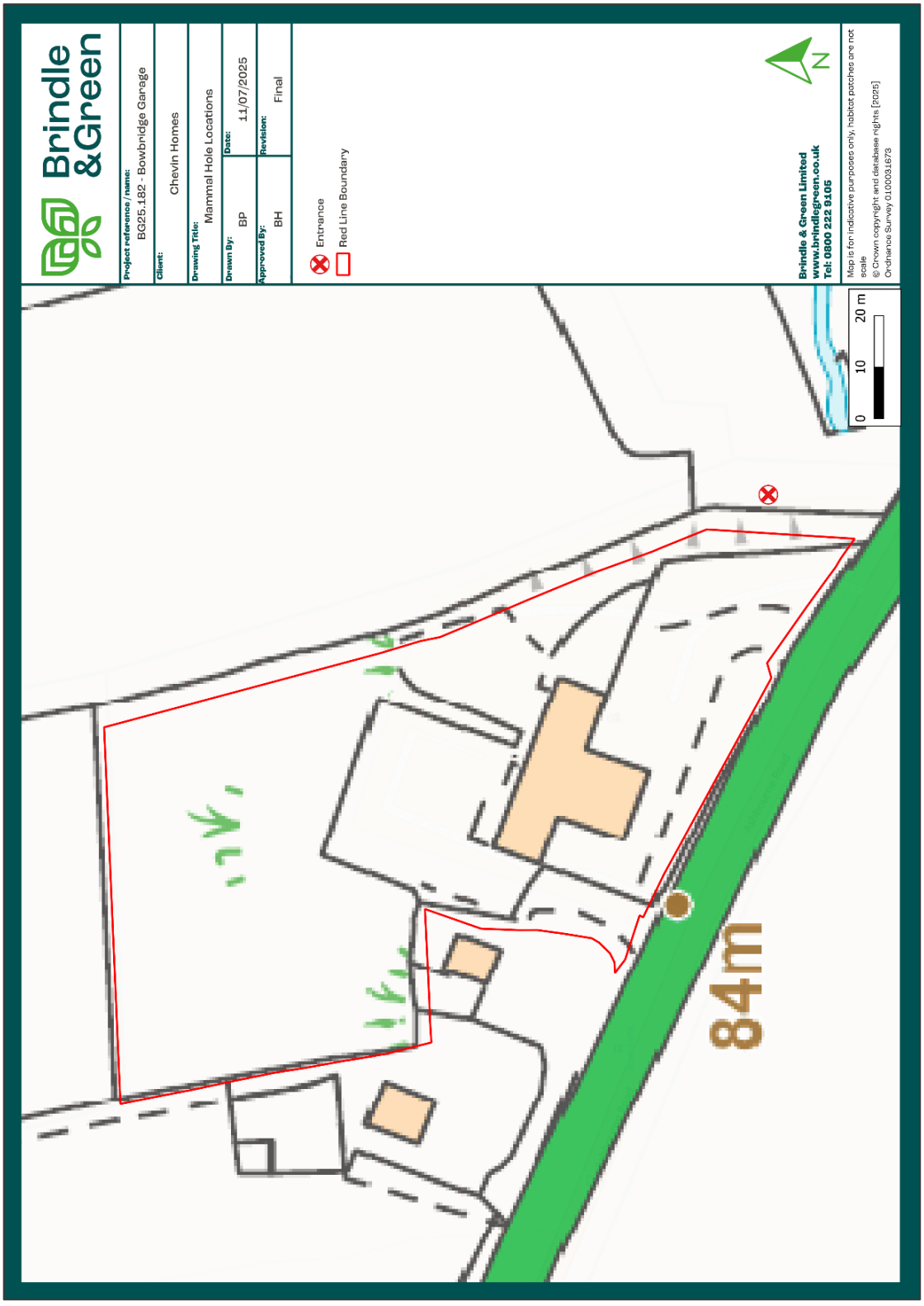


Figure 12: Mammal Entrance Location Plan