



ECOLOGICAL IMPACT ASSESSMENT

**Basin Bridge Bungalow, Stoke Golding,
Leicestershire**

**Report
31st March 2023**

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Report reference:
C3045-1

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QUALITY ASSURANCE

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The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Every reasonable attempt has been made to comply with BS 42020 (Biodiversity: Code of practice for planning and development); the CIEEM Guidelines for Ecological Report Writing (CIEEM, 2017); the CIEEM Guidelines for Ecological Impact Assessment 2018 and Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good practice guidelines 3rd edition (Collins, 2016). If compliance has not been achieved, justification/explanation has been given.

VALIDITY OF REPORT

The results of this assessment are only valid for a maximum of one year from the date the site visit was carried out (March 2023). Should the works be delayed beyond this date, the survey should be updated to determine any changes to the status of the site and the assessment of effects. It should also be noted that local planning authorities may require updated surveys within a shorter timescale than two years.

The proposed development details provided by the client (see Section 4 of this report) were used to determine the assessment of effects. If the proposed development changes, the report will need to be reviewed to determine if there will be any changes to the assessment of effects and the overall outcome of the development.

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SUMMARY

- A Preliminary Ecological Appraisal (including a habitat survey and protected species assessment) was carried out at Basin Bridge Bungalow near Stoke Golding, Leicestershire (approximate central OS grid reference SP 3958 9550) on 13th March 2023. The survey was completed in relation to proposals to demolish the existing bungalow and construct a new, larger dwelling, move the site access, and create a turning circle for off-site agricultural buildings. As a part of the survey a Preliminary bat Roost Assessment was undertaken of the bungalow.
- The purpose of this report is to identify and describe all potentially significant ecological effects associated with the proposed development in order to assess the impacts of the development; set out the mitigation, compensation and enhancement measures required to ensure compliance with nature conservation legislation and planning policy; and address any potentially significant ecological effects.
- The site, as defined by the red line boundary, is roughly 0.72 ha in size and includes a small wooden bungalow (uninhabited) at the north-western end, accessed via a concrete access track (shared with off-site agricultural buildings). The bungalow is set within a large area of green space, which comprises rough, unmanaged grassland and ephemeral vegetation on disturbed ground. There are also some shipping containers stored on a gravelled area, parallel to the access road. The site's south-western corner is a small corner of the adjacent pasture field. Boundary vegetation includes a defunct hedge with trees and a ditch (to south-west) and a line of trees with a parallel line of new hedge planting (to north-east, by the Ashby Canal). The southern boundary by Hinckley Road is mostly formed by a small secondary woodland, with a short section of species-poor hedge in the south-western corner.
- The site is located within the Site of Special Scientific Interest (SSSI) Impact Risk Zone for one or more nearby statutory sites (the nearest is Kendall's Meadow SSSI); due to the number of sites in the locality it is difficult to tell which site/s it refers to. The Impact Risk Zone states that discharge of water or liquid waste of >5m³/day may represent a risk to the relevant SSSI. Discharge rates for the proposed development must be calculated by a suitably qualified professional to determine if the proposals will adversely impact the SSSI; and if necessary, discussions will be required with Natural England to determine if mitigation is required.
- The site abuts Ashby Canal Potential Local Wildlife Site (PLWS). The proposal will not result in any direct losses; however, in the absence of mitigation, adverse indirect impacts may affect water quality and any new lighting may impact on its ecological functionality. Measures to avoid impacts on the PLWS are detailed within this report.
- The proposals will result in the loss of roughly 17 m of native hedgerow and small areas of species-poor grassland, hardstanding and gravel. Native hedgerows qualify as a priority habitat and thus mitigation is required to avoid adverse impacts. Whilst the loss of the other habitats will have no significant adverse impact on the biodiversity of the local area, to ensure the development results in a biodiversity net gain, in accordance with legislation and planning policy, sensitive soft landscaping design will be incorporated into the scheme. Appropriate measures are required to prevent harm to retained habitats during site clearance and construction.

- The survey area has some suitability to support protected and priority species. Evidence indicates there is a very low likelihood of bats using the bungalow on site, and thus a very low risk of impacts upon bats arising as a result of its demolition. A precautionary Bat Method Statement is provided to ensure bats are not harmed in the very unlikely event that they are present during demolition (Appendix 6). There are unlikely to be any significant impacts on other protected or priority species. However, precautionary methods and measures for biodiversity mitigation will be required to prevent harm or disturbance to otter, water vole, badger, nesting birds, reptiles, great crested newt, common amphibians and hedgehog.
- No legally controlled invasive non-native plant species were recorded on site; precautionary measures are detailed in this report. Recommendations to eradicate any invasive non-native plant species without legal controls are provided.
- Legislation and planning policy requires that development projects incorporate biodiversity enhancement. In addition to the habitat creation/enhancement measures, a number of species-specific measures will be incorporated into the scheme to provide opportunities for a variety of species, including bats, birds, hedgehog and invertebrates.

1 INTRODUCTION

1.1 *Background*

A Preliminary Ecological Appraisal, comprising a habitat survey and assessment for protected, priority and invasive non-native species was carried out at Basin Bridge Bungalow near Stoke Golding, Leicestershire (approximate central OS grid reference SP 3958 9550) on 13th March 2023. As a part of the protected species assessment a Preliminary bat Roost Assessment was completed.

The surveys and assessments were required in connection with proposals to demolish the existing bungalow and construct a new, larger dwelling on site; move the site access; and create a turning circle for off-site agricultural buildings (just north of the site).

The client has confirmed that they have not commissioned any previous ecological surveys of the site, and that they are not aware of any surveys undertaken by the previous occupant/owner.

1.2 *Personnel*

The survey and reporting were carried out by Anna Dudley MCIEEM of Swift Ecology Ltd. Anna is employed as a Principal Ecologist with Swift Ecology Ltd and is an experienced habitat surveyor and holder of Natural England survey licences for bats (Class Licence reference 2017-32147-CLS-CLS) and great crested newt (Class Licence reference 2015-16315-CLS-CLS). Anna graduated from Aberystwyth University in 2005 and has over 15 years' experience working as a consultant ecologist. Anna has undertaken numerous preliminary ecological appraisals, preliminary roost assessments (bats), botanical surveys (FISC Level 4), and surveys for protected species including great crested newt and otter, and has prepared subsequent reports with appropriate recommendations. Anna is experienced in the use of UK Habitat Classification and biodiversity net gain metrics, and has attended several courses on biodiversity net gain and the use of different biodiversity metrics, run by CIEEM and UK HAB.

1.3 *Ecological Context*

The site, roughly 0.72 ha, is located within a rural landscape between the villages of Stoke Golding, approximately 1.6 km to the north and Higham on the Hill, approximately 1.2 km to the south-west. The existing built edge of Hinckley town is located roughly 1.3 km to the south-east, although there is a new, large development on the edge of Hinckley within c.900 m of the site. Ashby de la Zouch canal and towpath abut the site's north-eastern boundary. Hinckley Lane abuts the site to the south. To the north-west there is a farmyard and associated modern metal-frame barns, and to the south-west there is open pasture.

In the wider area, the landscape is dominated by mixed farmland (with boundary hedgerows and standard trees) and scattered villages along with some isolated dwellings. A dismantled railway line, which runs roughly north to south, is present roughly 120 m to the west; this provides a linear tree-lined corridor through the landscape, although in places the railway line is reduced in width from two to one line of trees. There are very few woodlands within the local area and most examples are small. Field ponds are infrequent to the west of the canal, but to the east there is a cluster of waterbodies, including some fishing lakes, with the closest roughly 385 m from the site.

Other features of note within the landscape include a solar farm, roughly 450 m to the north, and the MIRA vehicle proving ground roughly 1.6 km to the west. The landscape context of the site and its immediate surroundings are illustrated in Figures 1.1 and 1.2, respectively.



Figure 1.1: The location of the site (outlined in red) within the wider area.



Figure 1.2: Aerial photo of the site, with the approximate boundary of the survey area outlined in red.

1.4 Purpose of Report

The purpose of this report is to identify all important ecological features that could be affected by the development; identify, describe and evaluate all the potential impacts associated with the proposed development, and identify likely significant ecological effects of the development.

This report also sets out the mitigation, compensation and enhancement measures required to address significant ecological effects and to ensure compliance with nature conservation legislation and planning policy.

The legal protection/controls and planning policies relevant to the designated sites, habitats or species mentioned in this report are detailed in Appendix 1.

The report format follows the 2018 CIEEM guidance, modified to reflect the small size of the site and the limited impact of the development.

2 METHODS

2.1 *Scope of Assessment*

The scope of the assessment reflects the relatively small size and the likely limited impacts of the proposed development. The zone of influence is considered to be: the habitats within the red line boundary within which the development will occur; its boundary features and immediately adjoining features of biodiversity interest; and the Local Wildlife Sites and other designated sites within a 1 km radius. The important ecological features considered as part of this assessment are designated sites¹, protected/priority habitats and species², and legally controlled invasive non-native species³.

2.2 *Background Data Search*

A background data search was undertaken in February 2023 by Leicestershire & Rutland Environmental Records Centre (LRERC) for records of designated sites and protected, priority and invasive non-native species within a 1 km radius.

Reference was also made to Natural England's MAGIC website⁴ for:

- Site of Special Scientific Interest (SSSI) Impact Risk Zones (IRZ) within the site;
- records of granted Natural England protected species licences within a 1 km radius (great crested newt and bats);
- records from great crested newt class survey licence returns within a 1 km radius; and,
- pond surveys (Habitat Suitability Index and eDNA) carried out by Natural England between 2017 and 2019 within a 1 km radius.

2.3 *Field Survey*

2.3.1 General

A Preliminary Ecological Appraisal, comprising a habitat survey and assessment for protected, priority and invasive non-native species, was undertaken following standard methods as described in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). As a part of the protected species assessment, a Preliminary bat Roost Assessment was undertaken of the bungalow, in accordance with the standard methods in Collins (2016).

¹ Designated sites are taken to mean statutory sites designated under international conventions or European legislation, statutory sites designated under national legislation, and locally designated sites. Impact zones (e.g. SSSI) are also included.

² Priority habitats and species are taken to mean habitats and species of principal importance for the conservation of biodiversity in England, local biodiversity action plan habitats and species, and red-listed, rare and legally protected species, and species endemic to a country or geographic location (as defined within *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017)).

³ Invasive non-native animal and plant species that are listed on Schedule 9, Parts I and II respectively, of the Wildlife and Countryside Act 1981 (as amended), and EU Regulation 1143/2014 on Invasive Alien Species (as amended).

⁴ <https://magic.defra.gov.uk/MagicMap.aspx>

The surveys were undertaken on 13th March 2023 by Anna Dudley of Swift Ecology Ltd. Weather conditions at the time of the surveys are shown in Table 2.1. The surveys covered all land within the red line boundary (see Figure 3.1, Section 3). Adjacent habitats were also briefly assessed.

Table 2.1: Survey conditions

Date	Approximate start time	Weather conditions
13.03.23	10:30	A fairly mild morning, with some light rain showers at first and a strong breeze (F4-6). Cloud cover was mostly 100%, but the sun shone through the clouds on brief occasions.

2.3.2 Habitat Survey

The habitat survey was carried out broadly in accordance with the UK Habitat Classification System Professional edition (Butcher *et al.*, 2020) and the Hedgerow Survey Handbook (DEFRA, 2007), adapted to align with the DEFRA 3.1 Metric where appropriate. This comprised the following elements:

- Habitat map (locations of all habitat/site boundaries, trees etc. are approximate).
- Habitat descriptions for each separate habitat type.
- Target notes to identify particular areas of interest or concern.

The fine-scale minimum mapping unit (25 m² area and 5 m length) was used for this survey, and habitats were mapped to Level 4 Primary Habitats where possible.

Only the mandatory secondary habitat codes were used for this survey because a detailed description of each habitat and its features is provided within the report.

2.3.3 Protected Species Assessment

The suitability of habitats for protected animal species was assessed at the same time as the habitat survey and incidental evidence of such species was recorded if encountered. Species that might be expected to be present in the geographic location include bats, otter *Lutra lutra*, badger *Meles meles*, water vole *Arvicola amphibius*, nesting birds, reptiles, great crested newt *Triturus cristatus* and white-clawed crayfish *Austropotamobius pallipes*.

Dormouse *Muscardinus avellanarius* were scoped out of this assessment due to an absence of suitable habitat within the site or zone of influence, a lack of connectivity to suitable habitats within the wider area and an absence of records within the data search.

Bats

Habitat on site was assessed for its bat roosting, foraging and commuting potential. The buildings were subject to a Preliminary Roost Assessment to determine their potential to support roosting bats and to check for evidence of bats. The trees on site were briefly assessed from ground level for their potential to support roosting bats. Full survey methodology is provided in Appendix 3.

Otter, water vole and white-clawed crayfish

Habitat on the site was assessed for its suitability to support otter, water vole and white-clawed crayfish. Any incidental signs were recorded if they were encountered. A full survey for these species was not undertaken.

Badger

Habitat was assessed for its suitability for badger foraging and sett digging. Any incidental signs of badgers, such as setts, latrines, foraging signs, or footprints, were recorded if they were encountered. A full badger survey was not undertaken.

Nesting birds

Habitats on site were assessed for their suitability for nesting birds. Any incidental sightings, or active/old nests were recorded.

Reptiles

The suitability of habitats on site for common reptiles (adder *Vipera berus*, grass snake *Natrix helvetica*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*) was assessed, based on factors such as the quality of the foraging resource, the presence of suitable sites for basking, and the presence of refugia for shelter and hibernation. Detailed reptile surveys were not undertaken.

Great crested newt

Great crested newts use terrestrial habitat within 500 m of breeding ponds; if used by the species for resting, such habitat is protected. Terrestrial habitats on site were therefore assessed for their potential to support the species, based on factors including vegetation structure and composition, the availability of shelter and foraging resources. The proximity of ponds and intervening habitats are also an important factor in determining the likelihood of this species being present on site.

2.3.4 Other Priority Species

General habitat suitability and incidental sightings of other priority species, including species of principal importance for the purpose of conserving biodiversity in England (NERC Act 2006) and Local Biodiversity Action Plan species, were noted. However, the presence of many priority species cannot be confirmed without targeted surveys (e.g. lower plants, insects) and thus the type and quality of habitats present (e.g. freshwater) were used to help assess the likelihood of such species being present. Species particularly considered as part of this assessment were mostly limited to mammals, reptiles, amphibians, birds and more easily visible/identifiable plants and insects likely to be present in the geographical region, and which could potentially occur on the site.

2.3.5 Invasive Non-Native Species

Any incidental sightings of relevant invasive non-native species with legal controls were recorded. A full survey was not undertaken.

2.4 Limitations**Preliminary Ecological Appraisal**

March is not an optimal time of year for habitat survey because many plants are not in flower and/or leaf and so may not be easily identified. This is not considered to be a significant constraint to this report due to the nature of the habitats on site, where the basic habitat types can still be distinguished.

It should be noted that any survey based on a single site visit will miss a significant proportion of the species present on or using the site. As such this report includes an assessment only of the likely presence of protected, priority and invasive species.

Preliminary bat Roost Assessment

The Preliminary bat Roost Assessment was undertaken in good light and weather conditions. No recent sweeping or other cleaning had been undertaken inside the building.

All elevations of the building and the roof could be fully viewed and accessed.

There are no accessible roof voids within the bungalow; however, a few gaps in the ceilings allowed partial views of the small voids present; this is further discussed in Appendix 4.

A Preliminary bat Roost Assessment cannot rule out bat presence, as bats may roost in areas that are not accessible other than by a destructive search. Overall, due to the type of construction of the building and its condition, there were not considered to be any significant limitations to this survey.

3 BASELINE ECOLOGICAL CONDITIONS

3.1 Designated Sites

Statutory designated sites

There are no statutory sites within the 1 km search radius. The site is located within a Site of Species Scientific Interest (SSSI) Impact Risk Zone for one or more nearby statutory sites; due to the number of sites in the locality it is difficult to tell which site or sites it refers to. The nearest statutory sites are Kendall's Meadow SSSI 2.5 km to the north, and Burbage Wood and Aston Firs SSSI 5.3 km to the south-east.

Non-statutory site

The site abuts Ashby Canal Potential Local Wildlife Site (PLWS) along its north-eastern boundary. Further sections of the Ashby Canal are located 30 m to the south (Candidate Local Wildlife Site) and 630 m to the north-east (PLWS).

All other non-statutory sites within the search area are over 250 m from the site.

The locations of all sites within a 1 km radius are shown in Figure A2.1, Appendix 2, and details are provided in Table A2.1, Appendix 2. The full data search is available on request.

3.2 Habitats

3.2.1 General

There is a small wooden bungalow in the north-western corner of the site, reached by a concrete access road (shared with the farm buildings located just to the north) from Hinckley Lane. Adjacent to the access track is an area of gravel with ephemeral/ruderal vegetation and some shipping containers. At the south end of the site there is a small secondary woodland, whilst a line of trees forms the north-eastern boundary between the site and the Ashby-de-le-Zouch Canal towpath. The south-western boundary comprises a defunct hedge with trees and an associated ditch. The rest of the site comprises areas of unmanaged grassland (to the west) and sparse grassland vegetation recolonising ground disturbed in 2022 (to the east). The south-western corner of the site comprises a small corner of the adjacent pasture field, with a short section of the roadside hedge on the southern edge.

The habitats on site are illustrated in Figure 3.1 and Target Notes are listed in Table 3.1.

3.2.2 Other neutral grassland

The site is dominated by other neutral grassland. The western portion of the site comprises tussocky, unmanaged grassland. The sward includes frequent common couch *Elymus repens* and Yorkshire-fog *Holcus lanatus*, as well as occasional bent grass *Agrostis* sp., and meadow-grass *Poa* sp., and rarely occurring tufted hair-grass *Deschampsia cespitosa*. There are occasional tussocks of hard rush *Juncus inflexus*, mostly towards the western edge of the site. Herbs are scattered and infrequent throughout the sward, and include occasional spear thistle *Cirsium vulgare*, red dead nettle *Lamium purpureum*, cleavers *Galium aparine*, broad-leaved dock *Rumex obtusifolius* and a crane's-bill *Geranium* sp.

Immediately south of the bungalow is an area of damp grassland, with occasional shallow puddles of standing water noted (Target Note 13). Vegetation here includes a patch of reed canary-grass *Phalaris arundinacea* with abundant willowherbs *Epilobium* spp. and bittercress *Cardamine* sp., occasional teasel *Dipsacus fullonum* and hard rush, and a single large tussock of sedge *Carex* sp.

The eastern and southern edges of the other neutral grassland area appears to have been disturbed within approximately the last 12 months. Bare ground comprises roughly 25% of the ground, with vegetation cover patchy and comprising a mixture of species, mostly also present in the adjacent grassland area, including Yorkshire-fog, creeping bent *Agrostis stolonifera*, spear thistle, broad-leaved dock, garlic mustard *Alliaria petiolata*, creeping buttercup *Ranunculus repens*, cleavers *Galium aparine*, dandelion *Taraxacum officinale* agg. and bristly ox-tongue *Helminthotheca echioides*. Mosses, including *Brachythecium rutabulum*, make up a large proportion of ground cover in places. Close to the line of trees by the north-eastern site boundary there is scrub regrowth, including blackthorn *Prunus spinosa*, rose *Rosa* sp., bramble *Rubus fruticosus* agg. and pyracantha *Pyracantha* sp.

3.2.3 Modified grassland

A corner of the adjacent pasture field forms the south-western corner of the site. This sward is short and uniform, comprising perennial ryegrass *Lolium perenne* with occasional clover *Trifolium* sp.

3.2.4 Hedgerows and lines of trees

H1: Along the south-western boundary there is a defunct hedgerow with standard trees and a ditch. The trees are predominantly oak *Quercus* sp. The early-mature oak at the northern end of the hedge (roughly 14 m high) is in poor condition with some dead wood within its crown (Target Note 10). There is a cluster of five further oaks (roughly 14-16 m tall) towards the southern end of the hedge, including one potentially dead tree. The shrub component of this hedge includes hawthorn *Crataegus monogyna*, elm *Ulmus* sp. (including both alive and dead specimens), ash *Fraxinus excelsior* saplings, rose and blackthorn. At the northern end the hedge has been cut to roughly 1.5 m high and is relatively intact, but at the southern end gaps are developing in between shrubs and it is less intensively managed (at least 3 m high). Some willow *Salix* sp. and poplar *Populus* sp. saplings are also present at this end. Bramble and ivy *Hedera helix* grow through the hedge, and the ground flora includes cuckoo pint *Arum maculatum* and cleavers. The associated ditch is roughly 1 m wide and contains some shallow water in places, especially at the southern end where there is some sweet-grass *Glyceria* sp. (Target Note 14). On the other side of the ditch, outside of the site, scrub has started to develop, leading to the creation of something resembling a double-hedge in places.

H2: There is a further native hedge in the south-western corner of the site along Hinckley Road, with a standard width gate in the corner providing access to the field. The hedge is cut to roughly 1.5 m high by 1 m wide (its width increases to the west, outside of the survey area). The hedge has been flailed and so identification of species was difficult, but blackthorn and cherry *Prunus* sp. were noted within the hedge and honeysuckle *Lonicera periclymenum* and ivy were recorded growing through the hedge. There is a ditch parallel to this hedge; at the eastern end within the site it holds water (depth unknown due to water turbidity, probably a result of recent heavy rain), whilst outside of the survey area the ditch was dry for much of its length. There are occasional willow saplings and soft rush *Juncus effusus* at the eastern end of the ditch.

Line of trees: Along the north-eastern boundary, adjacent to the canal, there is a line of trees. It is understood the former overgrown vegetation along this boundary was cut back roughly one year before the survey. Remaining trees in the hedge include early-mature and young ash and poplar to 14 m tall. Some ash are growing from coppiced bases, and it is likely they are remnants from the former boundary hedgerow, which was historically laid. A number of stumps are also present, possibly representing dead trees. There are occasional hawthorn shrubs in between the scattered trees, also likely to be remnants of the former hedge, and some pyracantha. Parallel to the line of trees, roughly 1 m inside of the site, there is a newly planted hedgerow in a staggered double row and trees guards (Target Note 16). This newly planted hedge extends northwards out of the site. The hedge comprises a mixture of native species, including hawthorn, hazel *Corylus avellana* and guelder-rose *Viburnum opulus*. It is understood it was planted roughly one year ago. A few dead whips were noted.

3.2.5 Other woodland – broadleaved

A small area of broad-leaved woodland, comprising young and early-mature trees to roughly 16 m tall, is present at the southern end of the site. A ditch runs through the woodland, parallel to Hinckley Lane; it is predominantly dry but damp towards the western end. The trees are mostly quite crowded together, and have a leggy growth form, suggesting most are self-set. Ivy is frequent on the trunks of these trees. The canopy is predominantly formed by a poplar, resembling aspen *Populus tremula*, although there are occasional ash, especially on the southern edge by the road. At least two dead trees were noted.

The ground in the northern edge of the wood appears to have been disturbed in the recent past and there is little to no scrub or ground flora here, except for some poplar suckers. The southern part of the wood is less disturbed and the shrub layer includes scattered elder *Sambucus nigra*, common privet *Ligustrum vulgare*, hazel *Corylus avellana* and a rose resembling field rose *Rosa arvensis*. In places, bramble is frequent.

Ground flora includes frequent nettle *Urtica dioica* and cleavers, and occasional cuckoo pint and cow parsley *Anthriscus sylvestris*. There are a number of piles of dumped materials (including tyres) within the woodland; vegetation growing over these piles suggests they have been present for a few years.

Where the wood abuts the canal, a young cherry laurel *Prunus laurocerasus* hedge has been planted in staggered double rows (roughly one year ago); a high proportion of dead plants were noted.

3.2.6 Built structures and artificial surfaces

There is a small bungalow, with a shallow asymmetric pitched roof and walls constructed from wooden cladding; it is further described in Section 3.3.1 and Appendix 4. Four shipping containers are present on the gravelled surface adjacent to the concrete access track. The gravel area supports some occasional plants associated with disturbed ground, including perennial ryegrass, creeping bent and an indeterminate mayweed species (Asteraceae sp.), along with frequent mosses, including frequent acrocarpous mosses (indeterminate species) and rarely occurring *Brachythecium rutabulum*.

At the north-western end of the site there is a yard associated with the adjacent farm buildings. This yard comprises unmade ground and where it is subject to regular disturbance by vehicles it is devoid of vegetation and supports some water puddles. Where the ground has not been disturbed, some ephemeral vegetation is present.



Plate 3.1: Rough, tussocky grassland.



Plate 3.2: Example of grassland vegetation colonising disturbed ground along north-western edge of site.



Plate 3.3: Longer grassland and damp vegetation to south of bungalow (Target Note 13).



Plate 3.4: Modified grassland in pasture field, and defunct hedge along south-western edge of site.



Plate 3.5: Defunct hedgerow along south-western site boundary.



Plate 3.6: Group of early-mature oaks towards southern end of defunct hedge.



Plate 3.7: Line of trees along canal, with new native hedge planting in front.



Plate 3.8: Tree guards with cherry laurel along canal within woodland.



Plate 3.9: Hedge along Hinckley Road, with associated wet ditch (Target Note 15).



Plate 3.10: Woodland at southern end of site (west end).



Plate 3.11: Woodland (east end).



Plate 3.12: Damp ditch at southern end of wood.



Plate 3.13: Dumped tyres in wood.



Plate 3.14: Small bungalow, with end of concrete access track visible.



Plate 3.15: Yard to north of bungalow.



Plate 3.16: Large pile of scrap metal (Target Note 1).



Plate 3.17: Pile of soil (Target Note 5).



Plate 3.18: Stored bricks, some on pallets (Target Note 3).



Plate 3.19: Brash pile with some soil (Target Note 6).



Plate 3.20: Brash pile (Target Note 7) with shipping containers visible behind.



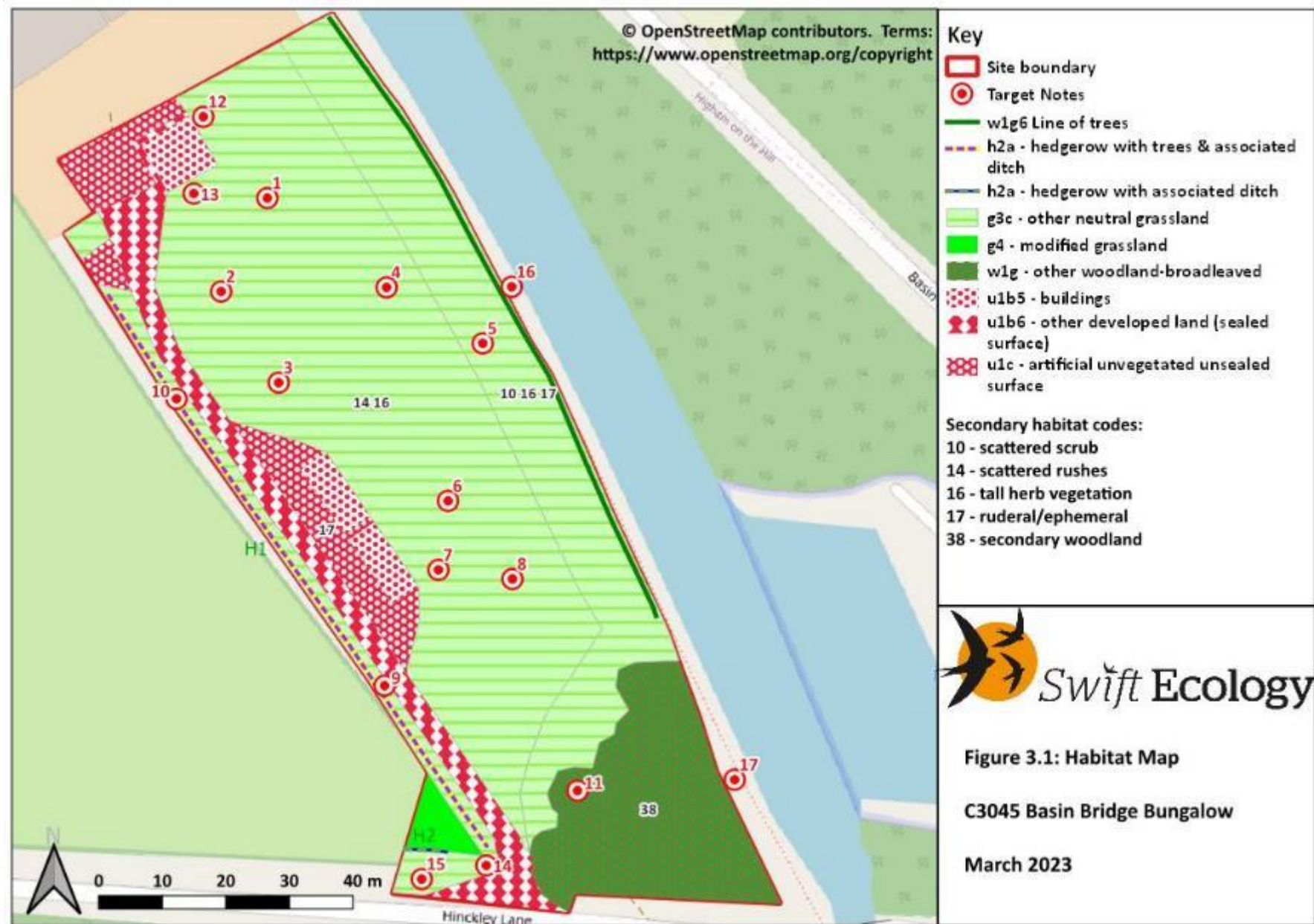
Plate 3.21: Brash pile (Target Note 8).



Plate 3.22: Trench to east of bungalow.

Table 3.1: Target notes (all relate to Figure 3.1)

Target note	Description
1	Large pile of scrap metal, approximately 10 m long by 4 m wide.
2	Several metal beams dumped on grass.
3	Several pallets of bricks, and a few piles of brick/blockwork and other rubble, in area roughly 6 m long by 3 m wide.
4	Trailer parked on grass.
5	Soil heap, which incorporates brash and other random items, roughly 3 m long by 2 m wide by 1 m high. Some vegetation has colonised this heap, indicating it is not of very recent origin.
6	Large brash pile, which incorporates some large tree branches, roughly 7 m by 7 m. Some soil present at base of pile.
7	Small brash pile, roughly 2 m by 2 m.
8	Large brash pile, roughly 7 m by 5 m.
9	Probable dead tree. Some minor peeling bark noted.
10	Oak tree in poor condition, with dead branches in crown. No potential roosting features noted.
11	Three trees with damage to trunk that may provide potential roosting locations for bats.
12	Trench with visible pipework, roughly 6 m long by 0.5 m deep and 0.3 m wide, by bungalow. Trench contains some shallow water. It does not appear to be of very recent origin.
13	Wet/damp area by house, including some areas of shallow standing water, likely to be ephemeral. Species here include reed canary grass, willowherb spp. and a large tussocky sedge.
14	Short section of wet ditch by road with sweet-grass growing in the water (indicating wet or damp conditions for much of year). This is continuous with the ditch along hedge H1, and is linked to the ditch along H1 and within the woodland, via culverts under the access roads.
15	Flailed hedgerow with roadside ditch parallel to road; only c.5-6 m within red line boundary. Ditch is wet at east end (depth unknown as water turbid); the presence of rushes and willow saplings indicate wet or damp conditions for much of year.
16	Native hedgerow planting, in two staggered rows, parallel to old line of trees by canal. Roughly one year old, in tree guards. Some whips have failed.
17	Cherry laurel hedge planting, roughly one year old, in two parallel staggered rows; many failed plants. Hedge is planted along boundary with canal, and is under the woodland canopy.



3.3 Protected and Priority Species

Relevant protected and priority species records within 1 km of the site are given below and a map is provided in Appendix 3. None of the records provided relate directly to the study site. The full data search is available on request.

An absence of records does not mean that a species is not present, merely that it has not been recorded. Some species records are not obtainable from the sources utilised and there may be further undetected records for such species on the study site or in the local area.

3.3.1 Bats

Data search

LRERC holds 14 records of at least six bat species within the 1 km search radius, with records made between 2010 and 2021. Species comprised serotine *Eptesicus serotinus*, Natterer's bat *Myotis nattereri*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, and brown long-eared bat *Plecotus auritus*, as well as records of indeterminate species. The closest records (for serotine, common pipistrelle and brown long-eared bat) were made at a location roughly 620 m to the north-east; no further details are provided. The nearest roost, recorded in 2011, was made at a location roughly 820 m east of the site. This roost supported 12 brown long-eared bat, two Natterer's bat and a single common pipistrelle.

Reference to Natural England's MAGIC website, which holds records of granted protected species licences, identified one Natural England bat licence granted within a 1 km radius. This licence was obtained in 2011 for the destruction of breeding sites and resting places for common pipistrelle, brown long-eared bat and Natterer's bat at a location roughly 810 m east of the site; this is likely to be the same roost described above.

Habitat assessment

The field boundary features, woodland and unmanaged grassland on site provide a variety of foraging habitats suitable for bats, and are located adjacent to the Ashby Canal, which provides highly suitable foraging opportunities, as well as a commuting feature for bats to move through the landscape.

A dismantled railway, roughly 120 m west of the site, also provides suitable foraging and commuting opportunities for bats, and has connectivity to the site via field hedgerows. The site is surrounded by farmland, which is generally considered to have low suitability for foraging bats, although the field boundaries will provide some foraging opportunities.

The site is currently unlit at night and Hinckley Lane is an unlit rural lane. It is understood that there is some lighting on the marina located on the eastern side of the canal, roughly 20 m from the site. It is not known what sort of lighting is present and if any light spills out from the marina onto adjacent habitats. Apart from the marina, there is unlikely to be any significant artificial nocturnal lighting within the immediate area, making the habitats suitable for use by a variety of bat species, including light-averse species (like brown long-eared bat).

Roost suitability

The Preliminary Roost Assessment of the buildings and trees was conducted, as described in

Section A4.1, Appendix 4. Full results of the assessment and photos are provided in Section A4.2, Appendix 4. The main findings are summarised below.

Bungalow

The bungalow is small, with an asymmetric shallow pitched roof clad with roofing felt and wooden clad walls. There is a low void within the pitched roof (<1 m high). The structure is in relatively good condition, with a few missing boards and some holes in the cladding that may provide some limited roosting and access opportunities. Minor gaps at the eaves may be large enough to allow bats access to the roost space.

No evidence of bat use was recorded during the external and internal inspections of the building. The visible portion of the roof void is filled with thick cobwebs, indicating no recent use by bats.

No evidence of bat use was noted during the external and internal surveys, and a detailed inspection of most features was possible. Whilst the building is considered to have limited suitability for bats, the bungalow is considered to have 'low' suitability for roosting bats, in accordance with Collins (2016), due to the presence of features that individual bats could roost in opportunistically.

Trees

A number of trees within the woodland have damage on their trunks (Target Note 11); most of these features do not appear to support crevices or cavities in which bats could roost. Where these features could be inspected with an endoscope, a single cavity potentially large enough for individual bats was noted in one tree on the western edge of the wood. No evidence of bat use was recorded and this tree is considered to have 'low' suitability for roosting bats. Two trees along the south-western hedge (Target Notes 9 and 10) were in poor condition (with one potentially dead); no potential roost features were visible from ground level and these trees are considered to have 'low' suitability for roosting bats.

3.3.2 Otter

LRERC holds two records of otter from within the 1 km search radius, made in 2000 and 2009. Both records are from the same grid reference on the Ashby Canal, which abuts the site's north-eastern boundary. No evidence of otter presence was recorded on site and as the site is relatively open it provides limited cover for otters to use as a resting place. The absence of aquatic habitats means that foraging opportunities on site are limited.

3.3.3 Water Vole

LRERC holds ten records of water vole from within the 1 km search radius made between 1997 and 2018. All records relate to locations along the Ashby Canal, with the closest record made in 2016 at a location roughly 310 m to the north. The site sits adjacent to the canal towpath, and the north-eastern boundary is roughly 3-4 m from the top of the canal's bank. The site itself offers negligible foraging opportunities and the ditches are considered sub-optimal for this species, as they are generally shallow, contain little suitable food resources, and do not connect directly to the canal.

3.3.4 Badger

LRERC holds one record of badger from the 1 km search radius, dated 2016. No setts or evidence of badgers were recorded on site. The rough grassland and woodland habitats present provide suitable foraging habitat for badger. The site is generally flat and lacks areas of dense vegetation suitable for sett building.

3.3.5 Birds

LRERC holds three records of protected birds within the 1 km search radius. The records of barn owl *Tyto alba*, hobby *Falco subbuteo* and red kite *Milvus milvus* were made between 2009 and 2019. The rough grassland on site may provide some foraging habitat for barn owl, although this area is small and is isolated from other areas of tussocky grassland in the wider area, with the adjacent field all either pasture (with uniform swards) or arable fields with narrow field margins. Hobby and red kite may occasionally forage on or over the site.

LRERC also holds 17 records of 13 priority bird species within the search radius made between 2008 and 2019. Of these records, the following species may nest on, or forage on/over the site: swift *Apus apus*, yellowhammer *Emberiza citrinella*, reed bunting *Emberiza schoeniclus*, swallow *Hirundo rustica*, linnet *Linaria cannabina*, house sparrow *Passer domesticus*, dunnoek *Prunella modularis*, bullfinch *Pyrrhula pyrrhula*, starling *Sturnus vulgaris*, wren *Troglodytes troglodytes* and song thrush *Turdus philomelos*.

The following species were recorded on or adjacent to the site during the survey: jackdaw *Corvus monedula*, long-tailed tit *Aegithalos caudatus*, mallard *Anas platyrhynchos* and woodpigeon *Columba palumbus*. The vegetation on site include foraging and nesting opportunities for a variety of bird species. No old nests were recorded in the bungalow, and it supports limited nesting opportunities.

3.3.6 Reptiles

LRERC holds no records of reptiles within the 1 km search radius. The tussocky vegetation on site and the base of hedges and trees provide cover, foraging and potential refuge/hibernation opportunities for common reptiles.

3.3.7 Great Crested Newt

LRERC holds seven records of great crested newt within the 1 km search radius, with records dating from 2014 to 2016. The closest record was made at a pond roughly 510 m to the north-east; this record comes from 'great crested newt pond surveys 2017-2019'; see below for further details. The next nearest record is from a pond roughly 640 m to the east in 2014; the record confirms breeding at this pond, with a maximum count of 22 individuals.

Reference to Natural England's MAGIC website identified the following additional information regarding great crested newt within a 1 km radius of the site:

- No records of granted great crested newt protected species licences within a 1 km radius of the site.
- Five records of great crested newts from survey returns – dated 2014 to 2016. These records appear to relate to two ponds located roughly 640-660 m east of the site.

- One record of a pond surveyed as part of the 'great crested newt pond surveys 2017-2019'. This pond, located roughly 510 m to the north-east of the site, was surveyed in April 2019, with a HSI score of 'below average' (0.53); great crested newt presence was confirmed in this pond using eDNA water sampling.

There are no ponds on site and the wet ditches present are shallow and highly unlikely to hold water long enough to support successful breeding. The nearest mapped waterbody is a fishing lake located roughly 390 m to the east. Canals are generally considered to provide sub-optimal breeding habitat for great crested newts due to the presence of predators such as fish and waterfowl. The rough grassland, woodland habitats and hedgerows on site provide suitable foraging habitat for this species, whilst the piles of brash/spoil and other stored materials, and hedges may provide refuge and hibernation locations.

3.3.8 White-clawed Crayfish

LRERC holds one record of a white-clawed crayfish within the 1 km search radius from 2000. The grid reference provided relates to a location roughly 350 m east of the site; however, the record location is given as 'River Itchen, Deppers Bridge' and there is no River Itchen at or near this grid reference. It is thought likely there is a typographical error in the grid reference and this record does not relate to a location within 1 km of the site. LRERC also holds two records of signal crayfish *Pacifastacus leniusculus* (an invasive non-native species) within Ashby Canal (dated 2015 and 2018), with the closest record made roughly 150 m to the south-east in 2018. The presence of signal crayfish in the canal significantly reduces the likelihood that white-clawed crayfish will be present. The site supports no suitable habitat for white-clawed crayfish.

3.3.9 Other Priority Animals

Priority mammals

LRERC holds one record of hedgehog *Erinaceus europaeus* made roughly 1 km to the north-east of the site in 2020. The hedgerows, wooded area and rough grassland will provide foraging and refuge habitat for this species.

Priority amphibians

LRERC holds two records of common toad *Bufo bufo* within the search radius, with the records made from waterbodies roughly 640-660 m east of the site in 2014. No suitable breeding habitat is present on site, but the site offers some terrestrial foraging and refuge opportunities.

Priority invertebrates

LRERC holds no records of priority invertebrate species within the 1 km search radius. The site is small and habitat/species diversity is relatively limited, but it is likely to provide opportunities for a variety of common invertebrates.

3.3.10 Priority Plants and Fungi

Plants

LRERC holds two records of a protected plant species (bluebell *Hyacinthoides non-scripta*) within the search radius. These records are provided at tetrad level only (i.e. with an accuracy of 2 x 2 km) and so their distance from the site is not known. No bluebells were noted during the survey, although a detailed survey was not completed.

LRERC holds 14 records of seven plants listed as priority species on Section 41 of the NERC Act (2006), or on the Local Rare Plant Register; most of these records are provided as tetrad records and thus the distance of these records from these sites cannot be confirmed. The nearest record with a more accurate record is hemlock water-dropwort *Oenanthe crocata* at a location on the Ashby Canal roughly 240 m to the south; this species is listed on the Local Rare Plant Register. No priority plants were recorded on site during the survey, although a detailed survey was not completed.

Fungi

LRERC holds one record of a priority fungi within a 1 km radius of the site. This record, of coral tooth *Hericium coralloides*, was made in 2021 at a location roughly 650 m to the north-east. No fungi were noted on site during the survey, although a detailed survey was not completed.

3.4 Invasive Non-Native Species

LRERC holds seven records of four invasive non-native plant species with legal controls within the 1 km search radius: Japanese knotweed *Reynoutria japonica*, montbretia *Crocasmia x crocosmiiflora*, variegated yellow archangel *Lamium galeobdolon* subsp. *argentatum* and wall cotoneaster *Cotoneaster horizontalis*. The closest record was Japanese knotweed, recorded at a location roughly 100 m to the east in 2020.

In addition, they hold records of a number of invasive non-native plant species without legal controls. These include orange balsam *Impatiens capensis*, which is recorded along the Ashby Canal, with the closest record made roughly 160 m north of the site.

LRERC also hold records of the following invasive animals with legal controls: signal crayfish (discussed in Section 3.3.8) and Canada goose *Branta canadensis*.

An absence of records does not mean that a species is not present, merely that it has not been recorded. Species records are not always obtainable and the presence of such a species in the study site or in the local area may not have been detected.

No invasive non-native species with legal controls were recorded on site during the survey. However, there are young cherry laurel plants along the east edge of the woodland; this non-native species is considered to be ecologically undesirable and invasive in woodland habitats.

4 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposal comprises the following elements, with the final plan illustrated in Figure 4.1.

- Demolition of the existing dwelling, construction of a new larger dwelling with associated parking area and garden.
- The gravelled area parallel to the access track will become garden, and the shipping containers will be removed.
- Creation of a turning circle for vehicles accessing the farm buildings to the immediate north of the site. This will incorporate the footprint of the bungalow but will require the loss of some grassland.
- Relocation of the site access to a location roughly 15 m to the west (to improve visibility and access to the site). This will require the removal of roughly 12 m of defunct hedgerow along the south-western boundary. Along Hinckley Road, there is an existing field gate within the hedge (c.4 m wide). The new access road will exit the site here, but will be roughly twice as wide as the existing gate, requiring the removal of roughly 5 m of hedge.
- The existing site access gate will be removed and planted up with new native hedgerow and the new boundary line along the access track will be planted with new hedgerow to mitigate for the proposed hedge losses.
- All other boundary vegetation will be retained.



Figure 4.1: Proposed site layout, based on Brown & Co Drawing 'Site Plan As Proposed', 22 106 K0001 Rev B, dated 15.11.22.

5 ASSESSMENT OF EFFECTS

5.1 Designated Sites

Potential Impacts

Statutory sites

There are no statutory sites within the 1 km search radius and so there will be no direct impacts on such sites. The site is located within the Impact Risk Zone for a nearby SSSI, possibly Kendall's Meadow 2.5 km to the north, which states that a development resulting in "*any discharge of water or liquid waste of more than 5m³/day to ground (ie to seep away) or to surface water, such as a beck or stream*" will represent a likely risk to this site.

The discharge rates for the proposed development must be calculated by a suitably qualified professional to determine if the proposals are likely to adversely impact the statutory site.

Non-statutory sites

The site abuts Ashby Canal PLWS. No loss of habitat or direct impacts on this PLWS are anticipated, and the proposed new dwelling will be located in the western side of the site, roughly 20 m from the site boundary and the canal towpath. Siting the house away from the canal will help to minimise impacts of the development; however, in the absence of appropriate mitigation measures, there is potential for accidental incursions into the PLWS by machinery and site personnel during site clearance, demolition and construction, which has the potential to lead to damage. Furthermore, the possibility of indirect impacts cannot be ruled out, such as run-off or pollution incidents affecting the canal's water quality, or intrusive light spill from the development deterring nocturnal wildlife from using parts of the LWS, or severing commuting routes.

All other non-statutory designated sites are located over 250 m from the proposed development site. Due to the small size, location and nature of the proposals no impacts upon these sites are predicted.

Mitigation Measures

Statutory sites

- If analysis of the development determines that it will result in a discharge of water or liquid waste to ground or surface water of more than 5m³/day, it will be necessary to consult with Natural England regarding the impact of the development on the nearby SSSI, and determine appropriate mitigation measures.

Non-statutory sites

Pollution control

To avoid indirect impacts on the water quality of the Ashby Canal the following recommendations are made:

- Appropriate pollution control measures will be implemented during the site clearance and construction phases, and a pollution incident response plan will be prepared in case of emergencies, e.g. fuel spills and site run-off, in accordance with standard government guidance⁵.

⁵ <https://www.gov.uk/guidance/prevent-groundwater-pollution-from-solvents#prepare-for-emergencies-create-a-pollution-incident-response-plan>

- Design the drainage systems for the house to include appropriate pollution control measures throughout its lifetime, e.g. a sustainable drainage system⁶.

Lighting

To avoid intrusive lighting impacting the PLWS the following recommendations are made:

- There should be no nocturnal illumination of the site during the site clearance and construction phases of the project.
- Any new lighting of the final development will be designed to minimise light spill on the PLWS and retained habitats within the site boundary (especially the boundary hedgerows/woodland) which form ecological corridors along which fauna may commute to the PLWS from nearby. This will be beneficial to a variety of nocturnal fauna, including bats and invertebrates. Mitigation measures should be agreed with a suitably qualified ecologist and may include at least some of the following:
 - additional tree planting along the north-eastern boundary to provide a buffer to the canal;
 - careful placement of luminaires so that they illuminate only the required areas e.g. the car parking area and front door;
 - installation of directional lighting, specialist bollard or low-level downward directional luminaires;
 - use of appropriate luminaires, with no UV component, warmer colours (i.e. more yellow/orange, ideally <2700 Kelvin (and 3000 Kelvin as a maximum)) and peak wavelengths higher than 550 nm;
 - use of LED luminaires due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - use of luminaires with an upward light ratio of 0 % and with good optical control;
 - use of security lighting with motion sensors and short (1 minute) timers; and/or
 - use of dimming or part-night lighting.

Further information can be found in '*Bats and artificial lighting in the UK; Guidance Note 08/18*' (Miles *et al.*, 2018) and '*Guidance Note 9/19 Domestic exterior lighting: getting it right!*' (ILP, 2019).

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.2 Habitats

Potential Impacts

The proposed development will result in the loss of roughly 17 m of species-poor hedge and associated ditch to allow for the creation of a new site access point. All standard trees within the hedges will be retained. Native hedgerows qualify as priority habitat and thus mitigation is required to avoid adverse impacts on this important ecological resource. The hedges on site have associated wet ditches and mitigation measures are required to ensure the proposed

⁶ <https://www.rspb.org.uk/globalassets/downloads/documents/positions/planning/sustainable-drainage-systems.pdf>

development does not impact on water quality of these ditches and the watercourses they feed into.

None of the other habitats on site are considered to qualify as priority habitats; however, the woodland has some landscape and intrinsic value due to the time which it would take to recreate such a feature. The woodland will be retained unchanged within the proposals and no direct impact is predicted.

The loss of small areas of species-poor grassland to allow the construction of the new dwelling, altered access road and turning circle will not significantly impact upon the biodiversity of the local area given their ubiquitous and species-poor nature. Much of the rest of the site will be converted to garden, which may result in some loss of biodiversity value, depending the management. Appropriate mitigation measures are required.

In the absence of mitigation, indirect impacts on retained habitats may occur, through accidental damage during site clearance of construction, or adverse impacts on their ecological function as a result of an increase in the levels of artificial lighting at night.

Mitigation and Compensation Measures

Mitigation measures regarding pollution avoidance and artificial lighting (Section 5.1), if fully implemented, will minimise or avoid impacts on habitats. The following additional measures will be implemented:

Retention

- Hedgerow removal to create the new access road will be kept to a minimum. All other boundary vegetation and the woodland will be retained in their entirety to retain connectivity around the site.

Protection

The following measure is recommended to protect all retained hedges, woodland and trees:

- All retained hedges, trees and woodland will be protected in accordance with British Standard *BS 5837:2012: Trees in relation to design, demolition and construction. Recommendations*. Protection will be installed prior to the commencement of any works, including site clearance.

New Planting

- As a part of the development, new native species-rich hedgerow⁷ will be planted along the new access road and to infill the existing site access point, which will become redundant. Approximately 19 m of new hedge will be required to fill the gaps created, resulting in no significant change in the hedgerow resource on site, once the new planting is established.
- To mitigate/compensate for habitat loss, any soft landscaping within the garden will be designed to incorporate a range of native planting and wildlife-friendly species, aiming to provide a continuous sequence of flowers suitable for pollinators from March until

⁷ With at least five woody species per 30 m.

October^{8,9}, as well as fruit- and nut-bearing trees and shrubs to provide foraging opportunities for birds and mammals.

Further information, to include lists of appropriate species, is provided in Appendix 5.

Significance of Residual Effects

It is considered there will be no residual effects provided all the measures outlined above are implemented.

The final development must demonstrate that it has achieved biodiversity net gain, in accordance with the Environment Act (2021) and planning policy; this is further discussed in Section 5.5.

5.3 Protected and Priority Species

5.3.1 Bats

Potential Impacts

Habitats

The site has little to no nocturnal illumination at present, with the nearest artificial lights understood to be at the marina, roughly 20 m to the east. It is assumed that some artificial lighting will be installed as a part of the project, and any increase in night-time illumination has potential to adversely impact upon bat foraging or commuting activity on site (especially for species which are light-averse, such as brown long-eared bat) and on the adjacent Ashby Canal PLWS).

Hedgerow loss will be limited, and will be replaced by new planting. No significant impact on habitat connectivity is likely to occur as a result of the proposals.

Bungalow

There is no evidence of bats in the bungalow, which is assessed as being of 'Low' suitability for roosting bats on account of the very limited potential access opportunities and roost locations present. In the absence of mitigation, there is a very low risk bats will be harmed in the unlikely event they are roosting within the bungalow at the time of demolition. To ensure compliance with legislation, precautionary mitigation measures are proposed.

Trees

The majority of trees on site have 'negligible' suitability for roosting bats, but a few along hedge H1 and within the woodland have potential roosting features with 'low' suitability for roosting bats. These trees will be retained within the proposals and therefore there will be no loss of this potential roost resource as a result of the development. However, in the absence of mitigation, they could be accidentally damaged or removed during site clearance and construction.

Mitigation Measures

Mitigation measures regarding sensitive lighting design (Section 5.1), if fully implemented, will minimise or avoid impacts on bat commuting and foraging behaviour on site and in the wider area.

⁸ <https://www.rhs.org.uk/science/pdf/conservation-and-biodiversity/wildlife/rhs-perfect-for-pollinators-garden-plants>

⁹ <https://www.bumblebeeconservation.org/gardeningadvice/>

Measures in Section 5.2 to protect retained vegetation, if fully implemented, will prevent accidental damage to any trees with potential roosting features. The following additional measures will be implemented.

Bungalow

For structures of 'low' roost suitability, industry standard guidance (Collins, 2016) states that at least one dusk emergence or dawn re-entry survey should be conducted to give confidence in a negative result; however, it also states that the number of surveys may be adjusted up or down to take account of site specific circumstances (section 7.1.8); and that if a structure has 'low' suitability for bats, then the ecologist should make a professional judgement on how to proceed based on all the evidence available (section 5.2.9).

Most areas of the building could be inspected and no evidence of bat usage was recorded; and the features present are considered to have limited suitability for bats. Thus, no further surveys are considered necessary in this case. However, because the risk of a bat being present at the time of the proposed demolition works cannot be ruled out entirely, precautionary working measures must be implemented, to include:

- Timing of commencement of works;
- Contractor briefing;
- Pre-work check by a suitably qualified ecologist;
- Supervision of destructive works; and
- Safe methods of working.

These measures are further detailed in a Method Statement in Appendix 6. A copy of the Method Statement will be available to site workers and displayed on site at all times during site clearance and demolition.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.2 Otter

Potential Impacts

There are records of otter from the canal adjacent to the site. The site is relatively open and offers limited refuge opportunities for otter; however, the site's proximity to the canal means that the possibility of individuals occasionally pass through the site cannot be ruled out, and in the absence of mitigation these individuals may be harmed by site clearance and construction activities. In addition, any unmitigated development has the potential to indirectly impact upon otters using the adjacent canal via pollution or sedimentation incidents, or an increase in light pollution.

Mitigation Measures

Appropriate mitigation to avoid impacts upon designated sites (Section 5.1) and bats (Section 5.3.1) will help to ensure that no adverse impacts occur. The following additional precautionary measures will also be implemented:

- Any excavations, including deep trenches or holes that will be left overnight, must be covered, or fitted with suitable ramps to allow otters a means of escape. Open pipework

will be blocked off at the end of each day to ensure that animals do not enter and become trapped. This will also prevent harm to other species, such as badger and hedgehog.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.3 Water Vole

Potential Impacts

Records from LRERC indicate that water voles have been recorded along the Ashby Canal. The existing bungalow is located roughly 30 m from the canal bank and the proposed new property will be located roughly 25 m from the site. The development is highly unlikely to result in harm to individuals and both the demolition and construction works are likely to be far enough away from the canal bank to avoid damage to water vole burrows; however, the chances of accidental damage as a result of an unmitigated development cannot be ruled out.

The proposals will result in the construction of a single dwelling and it is possible that any new or subsequent owners will have cats, which can predate water voles. Any increase in the number of cats is likely to be very small, and the local area is likely to have relatively few cats due to the low density of residential properties, and thus the impact of any additional cats is likely to be low and the risk is unlikely to have significantly changed when compared to the existing.

Mitigation Measures

To avoid impacts on this species the following additional mitigation measures will be implemented during demolition, site clearance and construction:

- In accordance with best practice (Dean *et al.*, 2016) no development (to include storage of materials and plant, parking of vehicles/plant and movement of plant) will occur within 5 m buffer zone of the canal bank to avoid damage or disturbance to any water vole burrows that may be present along the canal adjacent to the site.
- The zone will be clearly demarcated with fencing, or similar, through which vehicles or personnel cannot easily pass through. It is likely that measures to protect existing hedgerow and line of trees along the canal (detailed in Section 5.2) will provide sufficient protection, if implemented correctly.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.4 Badger

Potential Impacts

There was no evidence of badger activity or badger setts on site. As this species is known to occur in the local area, it is possible that individuals may occasionally pass through, or forage on the site. The development will result in the loss of small areas of suitable foraging habitat, but this loss will be negligible when compared to the amount of suitable habitat that will remain available in the wider area. There is a lack of dense, undisturbed vegetation on site suitable for badgers to excavate setts, and it is considered unlikely that a badger sett would be established here in the near future, although the possibility cannot be entirely ruled out. Whilst the potential for any

adverse impact upon badgers is low, some precautionary measures are required to prevent breaches in legislation.

Mitigation Measures

Proposed measures outlined in Section 5.1 (control of lighting) and Section 5.3.2 (precautionary working methods) will avoid impacts on badger activity and harm to individual badgers during construction. The following additional measure will be implemented:

- If a badger sett is discovered on site prior to, or following the commencement of works, all work must stop immediately, and the advice of a suitably qualified ecologist must be sought. Telephone numbers of such will be held on site.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.5 Birds

Potential Impacts

Without mitigation, site clearance/preparation works (to include the demolition of the bungalow and removal of existing sections of hedge and clearance of brash piles) could result in the following, especially if undertaken during the nesting season:

- Loss of nesting and foraging habitat for a range of bird species;
- Potential damage or destruction of the nest of any wild bird while it is in use or being built;
- Potential destruction of the egg of any wild bird;
- Potential death or injury of a bird.

The proposed development may lead to legal offences upon birds and their nests. Due to the nature of the proposals, the loss of foraging and nesting habitat will be negligible when compared to the amount of habitat that will remain available in the wider area.

Mitigation Measures

Proposed replacement planting in Section 5.2 will mitigate for the loss of nesting habitat. The following additional mitigation and compensation measures will be implemented to ensure compliance with legislation and planning policy:

- To avoid committing an offence, site clearance (to include removal of hedges and piles of brash/stored materials which may provide nesting opportunities) should be undertaken outside the bird breeding season (March to August inclusive). All cut material (e.g. branches, brash) will be removed from the site to prevent it from being used as nesting sites, or relocated to an area which will be left undisturbed during the breeding season.
- If this is not possible, the area to be cleared should be checked immediately prior to works commencing by a suitably qualified ecologist. If there are breeding birds present, works that may disturb the nest/s cannot continue until the chicks have fledged and left the nest.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.6 Reptiles

Potential Impacts

There are no records of any reptile species within the local area; however, the habitats on site to be impacted by the proposals have some suitability for reptile foraging, refuge and hibernation. The site has direct connectivity to more suitable habitat along the canal. It is considered that reptiles are unlikely to use the site regularly (due to its small size); however, the possibility that grass snake (a highly mobile species) will occasionally pass through the site cannot be ruled out. In the absence of mitigation, there is a low risk that individuals passing through the site during clearance and construction could be harmed. Precautionary measures are required to ensure no breaches in legislation occur.

Mitigation Measures

If implemented in full, measures outlined in Section 5.3.2 would prevent harm to reptiles that might use or pass through the site during clearance and construction. The following additional precautionary measures specific to reptiles are provided:

- Prior to development, existing short vegetation on site should be kept short (c.50 mm) to ensure these areas remain unsuitable for reptiles and other species.
- Clear vegetation and piles of stored materials and brash prior to works commencing using sensitive working measures, e.g. by dismantling the piles carefully, and periodically stopping to check for reptiles and other animals. Ideally, this should not be undertaken over winter when reptiles hibernate (November to February inclusive, weather dependent); however, note restrictions regarding nesting birds above. If this is not possible, extra care must be taken to check for hibernating animals.
- Where vegetation is longer (including tussocky grass and hedge), it will be cleared in a sensitive manner (e.g. using a staged cutting approach and clearing vegetation in a directional manner). Timing restrictions as above.
- Building materials to be imported onto the site could be used by reptiles for shelter. Any such materials must therefore be stored on land that is of low suitability for these species (i.e. upon areas of hardstanding); all materials should be stored above ground level (e.g. on pallets), so they are less accessible to reptiles; and dense vegetation will not be allowed to develop within these areas.
- If at any point during work on site, a reptile is discovered, all work must stop and a suitably qualified ecologist must be consulted. Telephone numbers of such will be held on site.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.7 Great Crested Newt

Potential Impacts

Records indicate that great crested newts are present within 1 km of the site, with the closest pond with great crested newts roughly 510 m to the north-east. There is no suitable breeding habitat on site or nearby, with the closest waterbody roughly 390 m to the east; it is noted that this waterbody is a fishing lake, and the presence of fish significantly reduces the likelihood that great crested newts could successfully breed there. The habitats on site provide some foraging and refuge opportunities for great crested newts, with field hedgerows providing connectivity to other suitable habitats in the area, e.g. along the dismantled railway.

The proposals will not result in the loss of any potential breeding habitat; however, the loss of terrestrial habitat and refuge habitats could lead to injury or killing of individuals.

Natural England's great crested newt method statement risk assessment was used to assess the risk of impacts on great crested newts as a result of the proposed development based on the total site area of c.0.72 ha (i.e. worst-case scenario), assuming that great crested newts are present within the nearest mapped waterbody. The result of these assessments are given in Table 5.1.

Table 5.1: Natural England's Great Crested Newt Risk Assessment Results

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.5 - 1 ha lost or damaged	0.03
Individual great crested newts	No effect	0
Maximum:		0.03
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

It can be seen from the above assessments that an offence is 'highly unlikely' if great crested newts are present in the nearest waterbody. However, in the absence of mitigation the possibility of great crested newts occasionally passing through the site and thus being harmed as a result of the works cannot be ruled out.

Mitigation Measures

If implemented in full, measures outlined in Sections 5.3.2 and 5.3.6 would prevent harm to great crested newts that might use or pass through the site during clearance and construction. The following additional precautionary measure will be implemented:

- If at any point during work on site, a great crested newt is discovered, all work must stop and a suitably qualified ecologist must be consulted. Telephone numbers of such will be held on site.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.8 White-clawed Crayfish

Potential Impacts

The LRERC hold one record of this species from 2000, although the record is possibly incorrect. Non-native signal crayfish have been recorded in the Ashby Canal in 2015 and 2018 and it is considered highly unlikely that a population of the native white-clawed crayfish will remain in the canal, as they are outcompeted by signal crayfish, which also carry crayfish plague to which white-clawed crayfish are highly susceptible. No impacts on white-clawed crayfish are therefore predicted as a result of the proposals.

Mitigation and Compensation Measures & Significance of Residual Effects

No impacts are predicted and no mitigation or compensation measures are required. No residual impacts are predicted.

5.3.9 Other Priority Animals

Potential Impacts

The site supports suitable habitat for hedgehog and common toad and so any proposed development may impact on these species, if present. Harm to individuals may occur during site clearance or construction. Once completed the proposed development may result in the loss of foraging habitat and may sever habitat connectivity if boundary features are not sensitively designed. Precautionary measures are required to avoid impacts on these species.

The habitats on the site will have some value for common and widespread invertebrates but are unlikely to support rare or priority species, due to the small area and limited botanical diversity. Artificial lighting can have a significant adverse impact on nocturnal invertebrates, and in the absence of mitigation, insensitively designed lighting could cause issues for species in the local area. No other significant impacts on protected or priority invertebrates are anticipated, and this species group is considered further only with regard to potential enhancement measures.

Mitigation Measures

The measures outlined in Section 5.1 (control of lighting) and Sections 5.3.2 and 5.3.6 (precautionary working methods) will help to avoid impacts. The following additional measures will provide further mitigation to ensure that the site remains accessible to these species upon completion of the development:

- If a hedgehog or common toad is discovered during the works it will be moved to a place of safety nearby. If a hibernating hedgehog is discovered, it will be put in a safe place and an appropriately qualified ecologist will be immediately contacted for advice.
- To prevent habitat severance, the inclusion of impermeable walls/fencing will be avoided within the proposals. Where it is necessary to include such features, they will contain gaps at the base (13 cm x 13 cm is sufficient) to allow hedgehogs and other animals to pass through¹⁰.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.3.10 Priority Plants and Fungi

Potential Impacts

No priority plants were recorded on site during the survey and reference to historical aerial imagery on Google Earth indicates that the site has previously been used as a storage area for farm equipment, materials and silage/haylage bales, and most areas have been disturbed at various times over the past 20 years. It is not considered that this development will significantly impact on such species and thus they are afforded no further consideration within the report.

¹⁰ See <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/> for further details.

No fungi were recorded on site during the survey. LRERC provided on record of coral tooth (a priority species), which lives on fallen beech and occasionally elm but maybe also on other broad-leaved trees (Phillips, 2006). This species is found from late summer to autumn and thus would not have been visible at the time of survey. A number of dead trees are present on site and the presence of this species cannot be ruled out. All trees, including dead trees will be retained and thus no impact on this species is anticipated.

Mitigation and Compensation Measures and Residual Effects

No impacts are predicted and thus no such measures are required, and no residual impacts are predicted.

5.4 Invasive Non-Native Species

Potential Impacts

Records of invasive species were provided by the local record centre. No invasive non-native plant species with legal controls were recorded on site during the survey. The history of past disturbance of site means the presence of invasive plant species with legal controls cannot be ruled out and in the absence of mitigation, it is possible that redevelopment of the site could result in breaches of legislation. Cherry laurel, an ecologically undesirable species, was recorded within the woodland; this species is not covered by legislation, and so no mitigation measures are provided; however, this and other plant species without legal controls are considered further with regard to enhancing the site.

Mitigation Measures

- If at any point during the works on site, invasive alien species with legal controls are discovered (such as Japanese knotweed), a suitably qualified ecologist should be consulted on how to proceed without any breaches of legislation.

Significance of Residual Effects

It is considered that there will be no residual effects provided all the measures outlined above are implemented.

5.5 Biodiversity Net Gain

The Environment Act (2021), Natural Environment White Paper (2011) and National Planning Policy Framework (2021) require that development results in net gains for biodiversity, with the Environment Act requiring a minimum of a 10% net gain in biodiversity value of the site post-development (as calculated in accordance with a recognised biodiversity metric). Mandatory biodiversity net gain (as set out in the Environment Act 2021) will be implemented fully through amendment of the Town & Country Planning Act and is likely to become law from November 2023, with small sites exempt until April 2024¹¹. Therefore current biodiversity net gain requirements may vary according to local planning policy.

¹¹ <https://www.gov.uk/guidance/understanding-biodiversity-net-gain>

Currently, the requirement for 10% biodiversity net gain has not been incorporated into local planning policy¹². Therefore, measures to achieve biodiversity net gain which are relevant to the small size and character of the site, nature of the development, and to the species/taxa most likely to occur locally and on site post development, are outlined below.

The mitigation and compensation measures detailed above in Sections 5.2 and 5.3 will help to avoid the development resulting in net biodiversity loss. The following habitat enhancement/creation measures could be implemented at the site to achieve a biodiversity net gain:

- Infill gaps within defunct hedgerow along south-western boundary with appropriate locally native species, and appropriately manage to create a dense and continuous hedge at least 2 m high by 1.5 m wide.
- Implement sensitive woodland management to improve the value of this habitat. Measures could include fencing the woodland off to prevent disturbance of the ground by machinery, removing undesirable species (cherry laurel) and retaining dead wood.
- Create a wildflower meadow or wildflower border within the garden, to provide foraging opportunities for a wide variety of invertebrates. Alternatively, a species-rich lawn area can be created with a special mix to provide similar opportunities.

Ecological enhancement measure for species cannot be captured within the biodiversity net gain metric, and are detailed in Section 6.

5.6 Cumulative Effects

Due to the nature and small scale of the proposals it is considered unlikely that there will be any cumulative effects associated with the proposed development that would have an adverse impact on designated sites, priority habitats, or protected or priority species.

5.7 Summary of Mitigation and Compensation Measures

A summary of mitigation and compensation measures is given below in Table 5.2; these measures must be provided to contractors at the start of works and are fully detailed within the sections above.

These measures could be detailed in full within a Construction Ecology Management Plan (CEMP), Ecological Mitigation and Enhancement Plan (EMEP) or similar.

¹² Hinckley and Bosworth Borough Council Local Plan 2006-2026, policy DM6:-Enhancement of Biodiversity and Geological Interest. Available at: https://www.hinckley-bosworth.gov.uk/downloads/file/5295/site_allocations_and_development_management_policies_dpd_-_adopted_july_2016

Table 5.2: Summary of Mitigation and Compensation Measures

Feature	Mitigation and Compensation Measures	How will Measure be Secured?
Statutory sites (Kendall's Meadow SSSI)	Determine whether development will result in levels of water or liquid waste that will be a risk to nearby SSSIs. If necessary, to consult with Natural England to determine mitigation measures required.	Planning Condition
Ashby Canal PLWS	- Standard measures to limit pollution and run-off must be implemented during the construction and operational phases. - Design scheme lighting during and after construction to avoid increase in illumination of the PLWS, to avoid impacts on its ecological functionality. In addition, lighting will also avoid illumination of all site boundary vegetation, which form part of the ecological corridors which link the PLWS to the wider area.	Planning Condition
Hedgerow – retention	Remove minimum length of hedgerows possible to create new access road.	Planning Condition/ Part of Project Design
Hedges, trees, woodland - protection	Protect retained habitats in accordance with British Standard BS 5837:2012: Trees in relation to design, demolition and construction. Recommendations.	Planning Condition
New planting	- Plant new species-rich hedgerow along new access road and to infill redundant entrance (c.19 m) to replace lost hedgerow. - New soft landscaping within the garden will be designed to incorporate a range of native planting and wildlife-friendly species to provide year-round foraging for a variety of fauna.	Planning Condition/ Part of Project Design
Bats - roost	Precautionary mitigation measures will be implemented during demolition of the bungalow to ensure bats are not harmed (in unlikely event they are present).	Planning Condition
Otter, badger, hedgehog	Precautionary measures to be installed during construction period (cover holes/pipework at night or install ramps).	Planning Condition
Water vole	Implement 5 m buffer from edge of canal bank where no work (to include storage of materials, vehicle parking and movement), to avoid disturbance/damage of water vole burrows along the adjacent canal.	Planning Condition
Badger	If a badger sett is discovered on site prior to, or following start of works, all work must stop immediately, and the advice of a suitably qualified ecologist must be sought.	Planning Condition
Nesting birds	Remove nesting habitat (including hedges and piles of brash) outside of nesting season. If this is not possible, potential nesting habitat will be checked immediately prior to works commencing by a suitably qualified ecologist. If nesting birds are found, works cannot continue until the chicks fledge and leave the nest.	Planning Condition

Feature	Mitigation and Compensation Measures	How will Measure be Secured?
Reptiles, amphibians and hedgehogs	• Precautionary measures during site clearance (vegetation cut and maintained in short condition, sensitive clearance of potential refuge features) and during construction (avoid creation of suitable refuge features). • If at any time a great crested newt or reptile is discovered, all work must stop and an ecologist must be consulted. • If a hedgehog or common toad is discovered it will be moved to a place of safety nearby. • Proposals to avoid inclusion of impermeable boundary features. If unavoidable, they must contain gaps at the base to allow hedgehogs free passage through the development.	Planning Condition
Invasive plants (legally controlled)	• If at any point any such species is discovered, all work must stop and a suitably qualified ecologist must be consulted.	Planning Condition
Measures for biodiversity net gain	• Infill gaps within defunct hedgerow along south-western boundary and appropriately manage to create a dense and continuous hedge. • Implement sensitive woodland management to minimise disturbance, retain dead wood and remove non-native species. • Create a wildflower meadow or border within the garden, or a species-rich lawn.	Planning Condition

6 RECOMMENDATIONS FOR ECOLOGICAL ENHANCEMENT

The Environment Act (2021), Natural Environment White Paper (2011) and National Planning Policy Framework (2021) require that development results in net gains for biodiversity. Many species-specific enhancement measures cannot be captured within biodiversity net gain metrics, but despite this they remain a vital part of the overall enhancement measures for the site. A variety of species measures could be implemented at the site, including:

- Install at least two features for use by roosting bats. Various boxes are available, including designs that can be integrated into the walls of the new building, placed on external walls or on suitable retained trees.
- Install at least two bird boxes on site. Boxes can be incorporated into the new building, or installed on retained early-mature trees. The boxes installed should provide nesting opportunities for species of conservation concern known to occur in the local area, such as swift, swallow, house sparrow and starling.
- Incorporate invertebrate chamber boxes/bricks into the proposed new development, to provide refuge opportunities for invertebrates. Such features should be sited in close proximity to suitable nectar- and pollen-rich foraging areas.
- Create log piles for use by small mammals (including hedgehog), reptiles, amphibians and invertebrates; such features could be sited within an undisturbed area close to the site boundary, to ensure it has good connectivity to the wider area.
- Sensitive garden management will help enhance the garden, to include avoidance of herbicides and pesticides, and use of peat-free alternatives.
- Sensitive management of trees on site, to retain any dead trees as standing deadwood (an important resource for invertebrates and fungi) where it is safe to do so. Felled trees and any branches removed should be retained on site where possible as a deadwood resource, e.g. they could be used to create/renew log piles.
- If at any point during the works on site, a plant species without legal controls are discovered, e.g. orange balsam, a suitably qualified ecologist should be consulted on how to sensitively eradicate it from site.

Further information is provided in Appendix 5.

7 RELEVANT LITERATURE

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APPENDIX 1 – LEGISLATION AND PLANNING POLICY

A1.1 Introduction

This section briefly lists legal protection/planning policy applying to designated sites, species or habitats mentioned in this report. It does not comprehensively reflect the text of the legislation/policy and it should not be relied upon in place of it. The following documents are relevant:

- The Local Government Act 1985;
- The Wildlife and Countryside Act 1981 (as amended);
- The Environmental Protection Act 1990;
- The Countryside and Rights of Way (CROW) Act 2000 (in England and Wales);
- The Natural Environment and Rural Communities (NERC) Act 2006;
- The Conservation of Habitats and Species Regulations 2017, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019;
- EU Regulation 1143/2014 on Invasive Alien Species, as amended by The Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019;
- Environment Act 2021;
- The Natural Environment White Paper (England) (DEFRA, 2011);
- Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011), which underpins the UK Post-2010 Biodiversity Framework (JNCC and DEFRA, 2012);
- National Planning Policy Framework (MHCLG, 2021); and
- Hinckley & Bosworth Borough Council Local Plan 2006 to 2026.

A1.2 Habitats of Principal Importance

Habitats designated as being “*of principal importance for the purpose of conserving biodiversity in England*” as listed under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006 are priority habitats for the UK Post-2010 Biodiversity Framework and form a key component of the Biodiversity Strategy for England. They are material considerations in the planning process.

A1.3 Protected Species

A1.3.1 Dormouse, great crested newt, otter, and all species of British bat

The dormouse *Muscardinus avellanarius*, great crested newt *Triturus cristatus*, otter *Lutra lutra*, and all species of British bat (*Vespertilionidae* and *Rhinolophidae*) are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receive some limited protection under Section 9. These species are also all listed as protected species in Schedule 2 of The Conservation of Habitats and Species Regulations 2017, as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, which gives them full protection under Regulation 43.

It is also an offence to set and use articles capable of catching, injuring or killing such species (for example a trap or poison), or knowingly cause or permit such an action.

The dormouse, great crested newt, otter and seven species of British bat are listed as species of principal importance for the purpose of conserving biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A1.3.2 White-clawed crayfish

The white-clawed crayfish *Austropotamobius pallipes* is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receives protection under Section 9 Part 1, from killing, taking or injury, and Part 5, which prevents their sale. They are also listed under Annexes II and V of The Habitats Directive (Council Directive 92/43/EEC); Annex II listing requires that Special Areas of Conservation (SACs) be established specifically to conserve the species.

The white-clawed crayfish is listed as a species of principal importance for the purpose of conserving biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A1.3.3 Water vole

Water vole *Arvicola amphibius* is listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and receives full protection under Section 9. Water vole is listed as a species of principal importance for the purpose of conserving biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A1.3.4 Common reptiles

Common lizard *Zootoca vivipara*, grass snake *Natrix helvetica*, slow worm *Anguis fragilis*, and adder *Vipera berus* are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), in respect of Section 9(5) and part of Section 9(1). These species are included as species of principal importance for the purpose of conserving biodiversity in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A1.3.5 Birds

All species of bird are protected under Section 1 (1) of the Wildlife and Countryside Act 1981 (as amended). Certain species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and receive protection under Section 1(5). There are special penalties where offences are committed for any Schedule 1 species.

Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 includes 49 bird species which are of principal importance for the purpose of conserving biodiversity in England.

A1.3.6 Badger

The badger *Meles meles* is protected in Britain under the Protection of Badgers Act 1992. The legislation protects badgers and their setts.

The badger is also protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit.

A1.4 Species of Principal Importance

Various vertebrate, invertebrate, plant and fungal species potentially present in the area are listed as species “*of principal importance for the purpose of conserving biodiversity in England*” under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and form a key component of the Biodiversity Strategy for England. They are a material consideration in the planning process.

A1.5 Invasive Non-Native Species

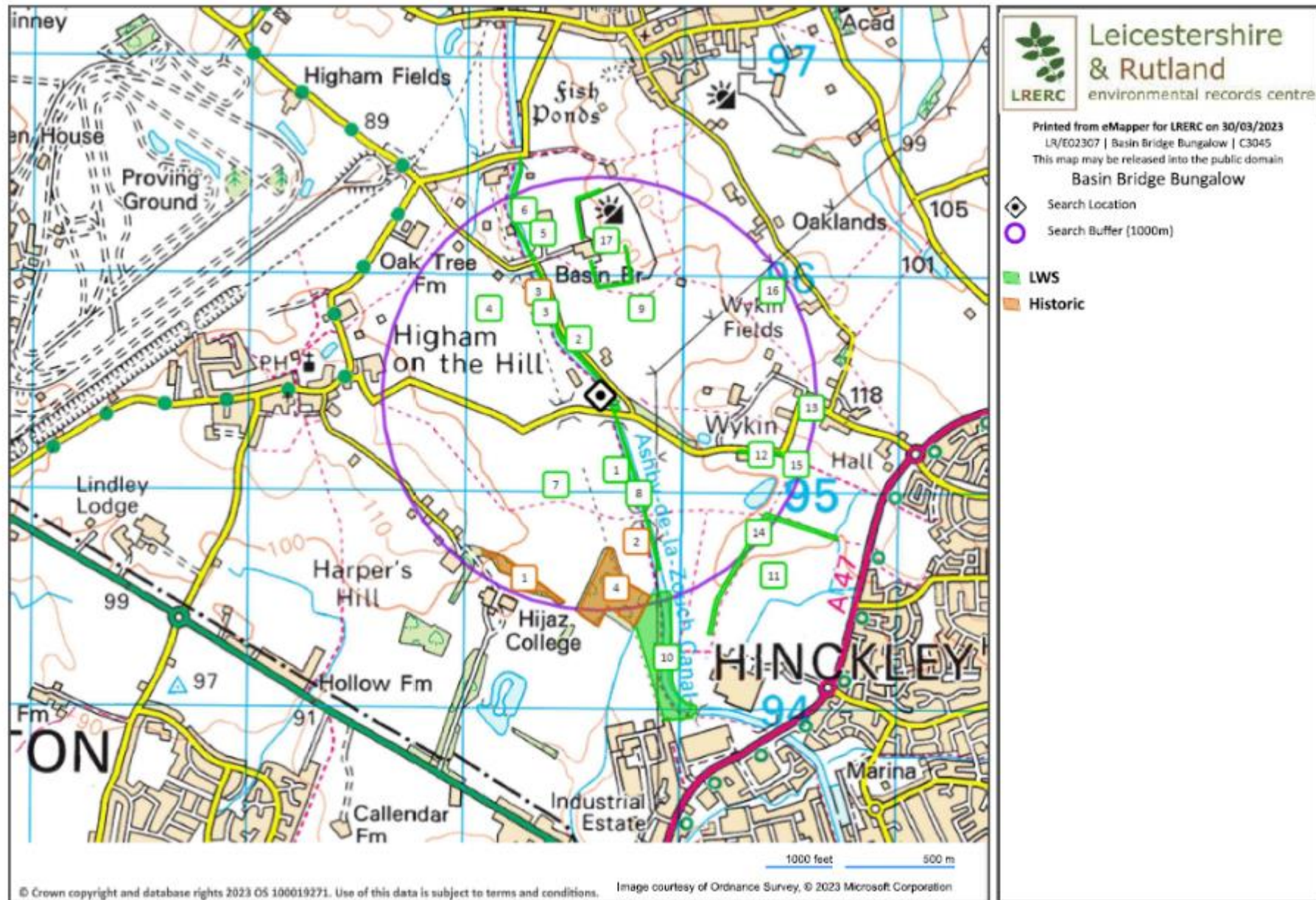
Several invasive non-native animal and plant species are listed on Schedule 9, Parts I and II respectively, of the Wildlife and Countryside Act 1981 (as amended). Schedule 14 (1 and 2) makes it illegal to release or allow to escape (animals) into the wild, or to plant or cause to grow (plants) in the wild, any animal or plant species listed on schedule 9 (parts 1 and 2).

EU Regulation (1143/2014) on invasive (alien) non-native species, as amended by The Invasive Non-native Species (Amendment etc.) (EU Exit) Regulations 2019, imposes restrictions on 49 animal and plant species. Strict restrictions (subject to certain exemptions) mean that these species cannot be imported, kept, bred, sold, used or exchanged, allowed to reproduce, grown or cultivated, or released into the environment. The Invasive Alien Species (Enforcement and Permitting) Order 2019 provides enforcement provisions, prescribes offences and penalties to comply with the requirements of the regulations.

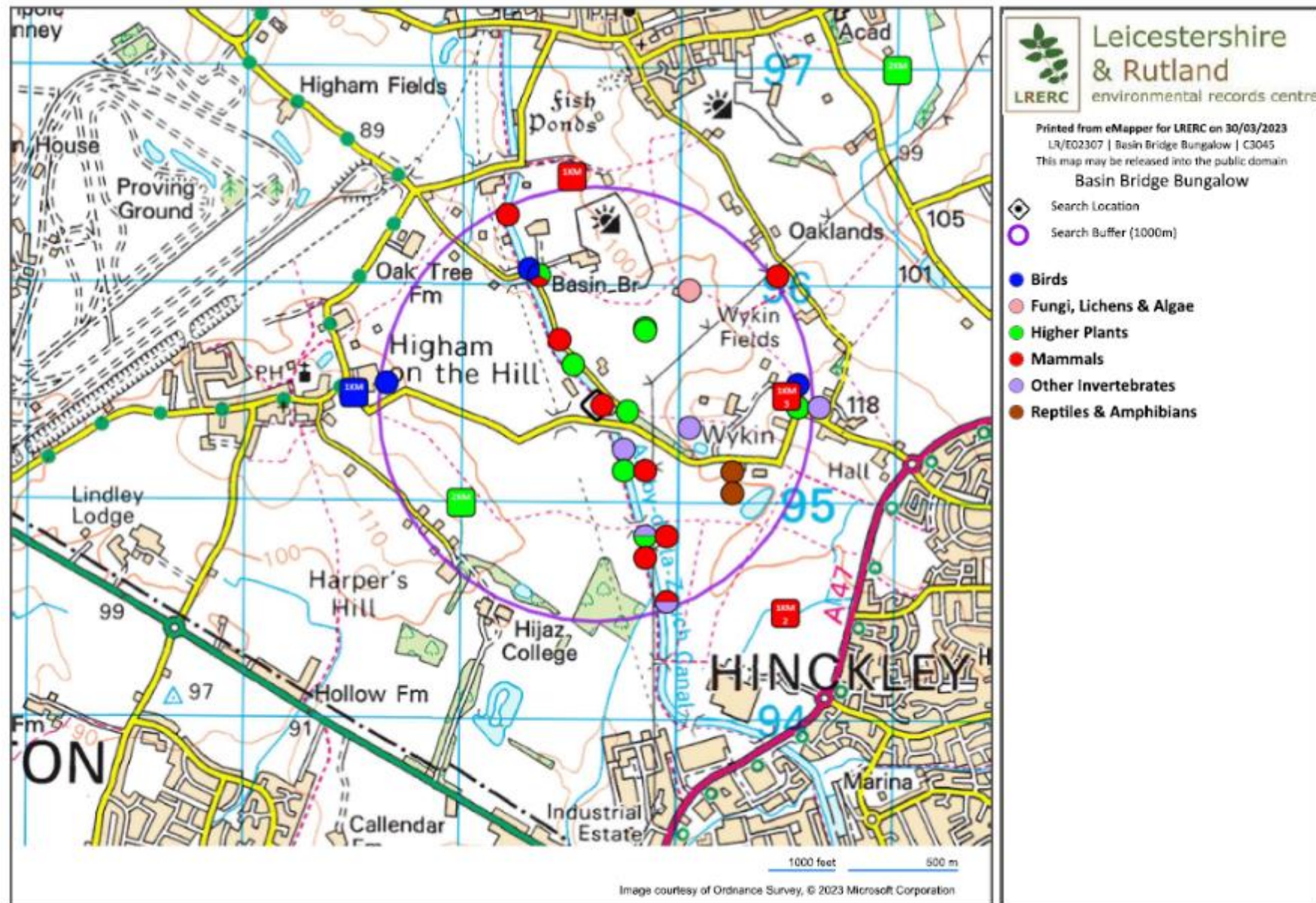
Table A2.1: Designated sites within 1 km of study site.

Table A2.2: Historic sites within 1 km of study site.

Map Code/Name	Distance from site	Status
3. Marsh, brook and lake	440 m north-west	Historic
1. Higham on the Hill, woodland and pond N of Hijaz College	610 m south	Historic
2. Pond	620 m south	Historic
4. Mixed woodland	640 m south	Historic



APPENDIX 3 – PROTECTED AND PRIORITY SPECIES WITHIN 1 KM (PUBLIC RECORDS ONLY)



APPENDIX 4 – BAT SURVEY

A4.1 Survey Methodology

Preliminary site assessment

Habitat on site was assessed for its bat roosting, foraging and commuting potential. The trees on site were briefly assessed from ground level for their potential to support roosting bats.

Preliminary roost assessment of buildings

The building on site was assessed for its potential to support bat roosts. This involves a consideration of various factors including:

- Light levels
- Temperature regime and protection from weather
- Access to the interior of the building or to other suitable roost sites
- Potential roost sites
- Building construction
- Habitat context

Based on these factors, an assessment was made of whether the building might support bats, and the type and number of roosts that might be present. The building was assigned a roost potential category (Collins, 2016) according to the criteria outlined in Table A4.1, based on the results of the assessment.

A detailed inspection was made of the building for any evidence of bat use, such as live or dead bats, droppings, scratch-marks, staining and prey remains, and in some cases the absence of cobwebs. Within buildings, large quantities of cobwebs in roof voids or at access points tend to be suggestive of no bat use, although this evidence is not conclusive.

Features identified as possible bat access points or potential roosting locations were thoroughly searched where possible, using powerful torches, ladders and binoculars to facilitate the process.

Table A4.1: Guidelines for assessing the potential suitability of buildings for roosting bats (based on Collins, 2016).

Category	Category description
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A building or structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A building or structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only).
High	A building or 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.
Known roost	Building or structure currently supporting bats (based on presence of bats, or evidence of use such as droppings, carcasses etc.).

A4.2 Preliminary Roost Assessment Survey results

A4.2.1 Bungalow

Building description

External

The bungalow is a small structure with an asymmetric pitched roof clad with Type 1F roofing felt (Plates A4.1-A4.2). The roof has a shallow pitch over the living room, on the southern side of the property, the line of which continues as a shallow half-pitch over the rooms on the northern side. There is a see-through corrugated plastic roof, supported by wooden posts, which creates a veranda area, on the southern elevation.

The walls are constructed from wooden cladding, behind which there is a foil-backed felt lining. The base of the wall is blockwork. The metal-framed windows are single-glazed and well fitted within the walls. The door is wooden and well-fitted within a wooden frame. A wood burning stove is present within the property and the flue exits through the western elevation, with a large wooden board present at the point where the flue exits.

Internal

The bungalow is empty, although the bathroom and kitchen appear to be occasionally used as facilities for the adjacent farm buildings.

There are no accessible roof spaces within the bungalow. There are occasional damaged, sagging or missing ceiling boards in all rooms (damage likely to result from damp or water leaks), some of which allow a visual inspection of the small voids present (Plates A4.3-A4.7). Over the living room there is a small, pitched roof space less than 1 m high. In the sloping roof section over the northern side of the bungalow, there are small, voids (roughly 0.1 m high) in between rafters, which extend from the eaves (to the north) and into pitched roof space. The roof is supported by square-cut beams, with chipboard forming the roof slopes. No insulation is present.



Plate A4.1: Bungalow – south and west elevations.



Plate A4.2: Bungalow – north and east elevations.



Plate A4.3: View of living area on south side of bungalow.



Plate A4.4: Sloping roof within kitchen on north side of the building.



Plate A4.5: Example of missing ceiling panel.



Plate A4.6: View into shallow void in sloping roof section.



Plate A4.7: View into void in pitched roof space.

Assessment of bat roost potential and survey for signs of bats

External assessment

The building is generally in good condition. The felt covering the roof appears to be in good condition, with no gaps or lifted areas that may provide bats with potential access points into the building.

There is a small gap at the wall apex on the west elevation; this gap may provide sufficient space for bats to enter the building, although the presence of an internal roof beam just behind this gap may block this route (Plate A4.8). There are minor gaps at the eaves on the south elevation (towards the west end) that may be just big enough to provide potential access points for bats to enter the roof void (Plate A4.9). No evidence of bat use was noted at either of these features. No other potential access points that may allow bats access into the roof space were noted.

At the eaves on the eastern elevation there is a small crevice between the roof edge and the wooden boarding that may provide sufficient space and cover for use by an individual bat occasionally as a day roost. No evidence of bat use was recorded here. A further potential roosting location was recorded on the southern elevation, where a short section of wooden beam is affixed onto the wall at the eaves (Plate A4.10). This beam is roughly 0.3 m long and gaps at either end would provide bats with access into the small void present which may be suitable for very occasional use as a day roost by low numbers of bats, or individual bats. No evidence of bat use was noted at either end or within the small void.

The wooden cladding is generally in good condition, and where there are gaps between the boards, these gaps are generally very small and likely too small for bats to be able to enter, and are filled with thick cobwebs (Plate A4.11). There are a few missing boards on the south and west elevations (Plate A4.12); the gaps created are generally small and at least partly filled with stems from climbing vegetation and also thick cobwebs; no evidence of bat use was found at either location. On the northern elevation there are a few holes in the cladding where pipework extends through the walls and into the bungalow (Plate A4.13). These gaps may provide bats with access into the building; however, no evidence of bat use was found here.



Plate A4.8: Gap at apex on west elevation – a possible access point for bats to enter the roof void.



Plate A4.9: Small gap at eaves on south elevation (indicated with arrow).



Plate A4.10: Wooden block with access at either end, that may provide a sheltered roost location for individual bats.



Plate A4.11: Example of minor peeling wooden cladding.



Plate A4.12: Missing boards on western elevation.



Plate A4.13: Example of hole in boards for pipes to enter building.

Internal assessment

It is unlikely that there is a space between the outer roofing felt and the chipboard in which bats might roost. The inside of the small voids within the bungalow could only be partially viewed; but where visible the spaces were filled with thick cobwebs, indicating no recent use by bats, and no external light was visible, suggesting that the roof void is relatively well-sealed. Within the living room there is a single hole in the ceiling; however, it is blocked by a bee nest (Plate A4.14). There are more areas of sagging and missing ceiling in the rooms on the north side of the building, which would provide bats with a way to move between the ground floor rooms and the roof voids. However, inspection of the accessible areas of roof void found all to be filled with thick cobwebs, indicating no recent use by bats (Plate A4.7). No evidence of bat use was recorded; although the roof voids could not be fully viewed.

No evidence of bat use was recorded within the living space; however, the floors in all rooms were covered with debris and dirt, which may have obscured evidence of bat use.



Plate A4.14: Hole in living room ceiling blocked by bees nest.

Summary

The bungalow is considered to have 'low' suitability for roosting bats, as although the roosting opportunities present are very limited, the location of the building (i.e. adjacent to high quality habitat, with few suitable buildings nearby) means that the possibility of individual or low numbers of bats using the building opportunistically cannot be entirely ruled out.

A4.2.2 Trees

Woodland

The woodland supports a number of young to early mature trees, predominantly a poplar species, but also some ash. Many of the trees are in good condition; however, there is at least one dead tree and one severely damaged tree (with a snapped trunk), and a small number of other trees have minor damage on their trunks (Plates A4.15-A4.16). Many of the damage features do not provide a potential roosting location, but a few on the north-western edge of the wood appear to lead into crevices that may provide a suitable roosting location for bats (Plate A4.15; Target Note 11, Figure 3.1). A check of features accessible from ground level determined that these features have 'negligible' to 'low' suitability for roosting bats at this time. No evidence of bat use was recorded within the accessible features.

Boundary trees

Two trees along the south-western boundary were in poor condition, as follows:

- Target Note 9: probable dead tree with peeling bark (Plate A4.17).
- Target Note 10: early-mature oak with dead wood in crown (Plate A4.18).

From ground level neither tree appears to provide any suitable roosting opportunities for bat and they are considered to have 'low' suitability for roosting bats.

All other trees along the site boundaries are in good condition and offer no potential roosting features for bats.



Plate A4.15: Damage on trunk of poplar at edge of woodland. Cavity at base of damage feature (entrance indicated by arrow) leads into cavity potentially large enough for use by individual bats.



Plate A4.16: Damage on trunk of poplar at edge of woodland. Rot does not lead into cavity large enough for roosting bats at this time.



Plate A4.17: Early-mature oak in hedge, with dead wood in crown.



Plate A4.18: Probable dead tree (indicated with arrow).

APPENDIX 5 – MITIGATION, COMPENSATION AND ENHANCEMENT

A5.1 Habitat Measures

Native hedgerow planting

Suitable hedgerow species are listed below. Plants should be of local provenance; if this is not possible, as a minimum plants will be from a British nursery and be of British provenance. Size of hedgerow whips should ideally be 60-90 cm, but minimum size of 40-60 cm.

- Blackthorn *Prunus spinosa*
- Crab apple *Malus sylvestris*
- Dog rose *Rosa canina* agg.
- Dogwood *Cornus sanguinea*
- Elder *Sambucus nigra*
- English elm *Ulmus procera*
- Field maple *Acer campestre*
- Field rose *Rosa arvensis*
- Goat willow *Salix caprea*
- Grey willow *Salix cinerea*
- Hawthorn *Crataegus monogyna*
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Honeysuckle *Lonicera periclymenum*
- Pedunculate oak *Quercus robur*

Wildlife-friendly garden planting

The incorporation of an appropriate mix of native trees/shrubs, ornamental species and cultivated fruit within the scheme would provide a range of foraging and nesting opportunities for wildlife. Plants ideally should be of local provenance. If this is not possible, as a minimum plants will be from a British nursery and be of British provenance.

Suitable small trees species include:

- Goat willow *Salix caprea*
- Crab apple *Malus sylvestris*
- Other apple species *Malus* spp. varieties
- Pear *Pyrus* spp.
- Bullace/damson *Prunus domestica* ssp. *insititia*
- Plum *Prunus domestica*
- Birch *Betula* spp.
- Rowan *Sorbus aucuparia*
- Ornamental sorbus *Sorbus* spp. varieties
- Ornamental cherry *Prunus* spp. varieties
- Strawberry tree *Arbutus unedo*
- Snowy mespil *Amelanchier lamarckii*

Suitable garden plants for pollinators include:

- Rosemary *Rosmarinus officinalis*

- Catmint *Nepeta racemose*
- Comfrey *Symphytum officinale* ('Bocking 14')
- Dahlia *Dahlia* (open varieties only such as 'Bishop of Llandaff')
- Giant hyssop *Agastache foeniculum* ('Blackadder', 'Blue Fortune' and 'Blue Boa')
- Lavenders *Lavandula* spp. including *Lavandula x intermedia* 'Gros bleu'
- Lungwort *Pulmonaria* sp. ('Blue Ensign' or 'Trevi Fountain')
- Marjoram *Origanum vulgare*
- Sicilian honey garlic *Allium siculum* (many Alliums are attractive to pollinators)
- Sneezewort *Helenium* ('Moerheim beauty')
- Wild thyme *Thymus drucei*

Wildflower meadows or borders

Planting wildflower borders will enhance the site for pollinating insects by providing a rich source of pollen and nectar. An appropriate species-rich wildflower seed mix, with native species appropriate to the local area, should be selected. Ground preparation, sowing and ongoing management should follow the manufacturer's instruction for the seed mix in question. Briefly, seed mix for small areas can be applied by hand broadcasting followed by light rolling or trampling to bed in the seed; sowing is normally undertaken in late summer or early autumn (early-August to mid-September). Useful advice is provided at:

- <https://meadows.plantlife.org.uk/making-meadows/sowing-seed/buying-wild-flower-seed/>
- <https://www.rhs.org.uk/lawns/wildflower-meadow-establishment>

Suitable mixes include:

- Drier areas
 - Emorsgate Standard General Purpose Meadow Mixture EM2
<https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/standard-general-purpose-meadow-mixture/>
 - John Chambers Meadow Maker
<https://shop.plantlife.org.uk/collections/wildflower-seeds/products/meadow-maker-wild-flower-seed-mixture-by-john-chambers-seeds>
- Wetter areas
 - John Chambers Damp, Wet Feet Mix
<https://shop.plantlife.org.uk/collections/wildflower-seeds/products/damp-wet-feet-wild-flower-seed-mixture-by-john-chambers-seeds>
- Lawns
 - Emorsgate Flowering Lawn Mix
<https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/flowering-lawn-mixture/>

A5.2 Species Measures

Bat boxes

Bat boxes can be integrated into the new dwelling or installed on existing early-mature trees. Any roosting features must be installed in areas that are dark and not subject to illumination by any lighting on site. Features must be installed in accordance with manufacturers' instructions.

Suitable bat box products to be installed integral to walling include:

- Ibstock enclosed bat box B
- Habibat 001 Bat Box Bespoke Facing
- Wildcare cavity bat box
- Schwegler 2FR bat tube



Figure A5.1: Ibstock enclosed bat box B (left) and Habibat 001 Bat Box Bespoke Facing (right)



Figure A5.2: Wildcare cavity bat box (left) and Schwegler 2FR bat tube (right)

Suitable bat boxes products to be installed on trees include:

- Schwegler 2F-DFP bat box
- Schwegler 1FF bat box
- Schwegler 2FN bat box
- Bark Boxes Kent-type twin crevice box



Figure A5.3 – from left to right: Schwegler 2F-DFP, Schwegler 1FF bat box and Schwegler 2FN bat box



Figure A5.4: Bark Boxes Kent-type twin crevice box

Bird boxes

Boxes can be integrated into the new dwelling buildings or be installed on retained trees or hedges. Nest boxes must be installed in suitable locations for the species intended in accordance with manufacturers' instructions. Advice can be found at: <https://www.bto.org/how-you-can-help/providing-birds/putting-nest-boxes-birds/putting-nest-box>.

Suitable bird box products to be integrated into the new building include:

- Schwegler triple swift box no. 17 or Habibat swift box (these boxes may also be used by other species such as house sparrow and tits)¹³
- Schwegler 1SP sparrow terrace or Habibat terraced sparrow box
- Habibat starling box

Suitable boxes for covered porches, car ports or open garages:

- Schwegler 10 swallow nest box (with optional droppings board)

Suitable bird box products to be installed on the retained boundary hedge and trees:

- Schwegler 1B nest box with 32 mm or 28 mm entrance – suitable for tits, house sparrow

¹³ Boxes must be installed at a minimum height of 5 m above ground level, with clear flight access.

- Schwegler 2GR nest box with oval entrance hole – suitable for tits, house sparrow, nuthatch and bats
- Bark Boxes Open-fronted nest box – suitable for robin and wrens
- Bark Boxes Starling Box



Figure A5.5 – from left to right: Schwegler Triple Swift Box No. 17, Schwegler 1SP sparrow terrace and Habitat starling box



Figure A5.6: No. 10 Schwegler swallow nest (left) and Schwegler droppings board (right)



Figure A5.7 – from left to right: Schwegler 1B nest box, Schwegler 2GR nest box and Bark Boxes open-fronted nest box



Figure A5.8: Bark Boxes starling box

Habitat piles

Habitat piles can be created in various ways using logs, brash and other materials arising from site clearance, to benefit a range of species and species groups, including amphibians, reptiles, hedgehog and invertebrates. Further information and design can be found at:

<https://www.froglife.org/wp-content/uploads/2019/07/Hibernaculum.pdf>

Hedgehog

To retain connectivity within the site and between the surrounding area, long sections of impermeable fencing should be avoided as this would lead to fragmentation of suitable garden habitat for hedgehogs. Areas of such impermeable fencing/walls should be minimised, and if their use is unavoidable, they must contain gaps at ground level measuring 13 cm by 13 cm¹⁴. Labelling gaps with signs will help to prevent them from being blocked in the future.

In preference, boundaries should be created using hedgerows, which allow free movement of hedgehog at all times.



Figure A5.9: Example of hedgehog hole (left) and hedgehog 'highway' sign (right)

Invertebrates

Suitable insect chamber box products to be installed on the site include:

- Schwegler insect nesting aid, Woodcrete
- Schwegler clay and reed insect nest
- Mini insect house

¹⁴ <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

- Bee Bricks
- Bee Blocks

All insect chamber boxes should be installed according to manufacturer's instruction.



Figure A5.10: Schwegler Woodcrete insect nesting aid (left), Schwegler clay and reed insect nest (middle) and Mini Insect House(right)



Figure A5.11: Bee Bricks (left) and Bee Block (right)

APPENDIX 6 – BAT METHOD STATEMENT

A6.1 Introduction

In order to ensure that bats are not harmed during demolition of the bungalow, in the unlikely event they are present, the following mitigation strategy will be followed. It is the responsibility of the site owner/project manager to ensure that this method statement is complied with during works.

This document contains the following elements:

- Timing of commencement of works;
- Contractor briefing;
- Pre-work check by a suitably qualified ecologist;
- Supervision of destructive works;
- Safe methods of working.

A6.2 Timing

The bungalow has 'low' suitability for roosting bats and the chances of there being hibernating bats or maternity roosts present is 'negligible'. Therefore there are no timing restrictions proposed.

A6.3 Contractor Briefing

This document will be available on site throughout the works and will be made available to all contractors to ensure that the requirements and mitigation measures are communicated effectively. All site workers/contractors will be briefed by a suitably qualified ecologist (hereafter referred to as 'the ecologist') prior to the start of demolition.

The "toolbox talk" by the ecologist will make site workers/contractors aware of the particular issues relating to this site and their responsibilities in the event of a bat being found in the absence of the ecologist (see below).

The toolbox talk will cover the following topics:

- that there is a very low risk bats could be present;
- the legislation relating to bats;
- the measures that will be used to protect them;
- good working practices; and
- what to do should bats be found in the absence of an ecologist.

This information will be provided before any works commence on site and a written record that this has been undertaken will be kept.

A copy of this method statement will be available to site workers and displayed on site.

A6.4 Working Methods

Immediately prior to the commencement of works the ecologist will check the potential roost features externally and internally to look for any roosting bats, so far as it is safe/possible to do so.

If no evidence of bat use is found, the potential roosting features (e.g. loose wooden cladding) will be removed carefully by hand, with site workers briefly inspecting any potential roosting spaces so revealed for the presence of bats. The ecologist will be present during this process in order to check for bats, recover any bats that are revealed and to advise on the most appropriate way to proceed.

No works will be undertaken at night and the site will remain unlit during the construction period.

A6.5 Procedures in the event of discovering a bat

All site workers will be made aware of the possibilities of finding bats and the procedure to follow should they be found when the ecologist is not on site. If at any point a bat is discovered, works will stop immediately and an ecological professional qualified to deal with bats will be contacted for advice on how to proceed. Telephone numbers of such will be held on site (Swift Ecology numbers: 07825 329028 or 01926 642541).

Should any bats fall out of structures or be injured, they will be gently placed in a secure ventilated box (e.g. a cardboard box) by the site worker and left in a cool dark place, until appropriate advice can be sought. Bats must not be handled without gloves.