Stanton 2

Rev1 Preliminary Ecological Appraisal, Daytime Bat Walkover and Baseline Biodiversity Impact Assessment DRAFT

August 2025

For:

Allison Homes East Midlands Ltd.

7 Boundary Court
Willow Farm Business Farm
Castle Donnington
DE74 2UD

Control sheet

EMEC Ecology
The Old Ragged School, Brook Street, Nottingham, NG1 1EA.
0115 964 4828
www.emec-ecology.co.uk

Client:	Allison Homes East Midlands Ltd.
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Author	Laura McClelland MSc, BSc (Hons), ACIEEM, Ecologist
1st QA	Edd Cullen BSc (Hons) MSc, Ecologist
2nd QA	Alice Palmer MSc BSc (Hons) ACIEEM, Senior Ecologist
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Rev1	20/08/2025	Laura McClelland	Athina Constantinou	Vicky Philpott	Amended to discuss baseline BIA only at this stage, DLL added to GCN recommendations and suitability assessment added to water vole recommendations.

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Summary

A Preliminary Ecological Appraisal (PEA), Daytime Bat Walkover (DBW) and Baseline Biodiversity Impact Assessment (BIA) of Stanton 2, Land East of Meadow Lane, Stanton under Bardon, Markfield, Leicestershire (NGR: SK 46726 10010, hereafter referred to as 'the Site') were undertaken during July 2025 to inform proposals for a planning application for a proposed residential development of 27 properties. This report was amended in August 2025 following comments from the Client.

The Site consisted of modified grassland with a fenced area containing an artificial sand and rubber surface, and a small wooden stable block and associated hardstanding. The Site was situated within a semi-rural context with agricultural land being the dominant habitat in the wider landscape.

Important ecological features, impacts, recommendations, further survey requirements and survey timings are detailed in Table 1 below.

Table 1 – Summary of important ecological features, impacts, recommendations and further survey requirements.

Ecological feature	Potential impacts	Recommendations, including any further surveys	Recommendations sections
Designated sites	Potential damage to the adjacent historical LWS via increased footfall. Indirect impacts to LWS's within 100 m of the Site via pollution. Any of the LWS's within 2 km of the Site may be affected by pollutants entering the watercourse adjacent to the eastern boundary.	All footpaths leading out of the Site to be directed away from the historical LWS. Signs used to encourage members of the public to exclusively use marked paths. Pollution prevention measures must be following during works, ensuring that specific guidance in relation to working near water also followed.	4.2.4-4.2.6
Invasive plants	Spread of snowberry (*Symphoricarpos albus*) and field horsetail (*Equisetum arvense*) to the wider environment.	Care taken to ensure that plants are removed and disposed of in such a way that prevents their spread to further areas of the Site and off Site.	4.5.4
Swallows (*Hirundo rustica*)	Destruction of swallow nests, as well as disturbance, injury or death of swallows and their young/eggs. Likely impacts to the future breeding success of the swallows on Site as result of losing established nest sites.	Demolition of B1 completed between September and February inclusive, outside of the main bird nesting period. Should this not be possible, then a nesting bird check of the building should be undertaken immediately (within 24 hours) prior to the demolition by a suitably experienced Ecologist. If swallow nest cups are considered to be active or active nests of other building nesting birds are identified, works should immediately cease and, if not present, the Ecologist contacted. Mitigation for the loss of nesting sites for swallow must be provided. This should be in the form of a specialised structure.	4.5.7-4.5.9

Ecological feature	Potential impacts	Recommendations, including any further surveys	Recommendations sections
Other birds	Potential for disturbance or destruction of bird nests as well as disturbance, injury or death of birds and/or their young/eggs.	Vegetation clearance undertaken between September and February inclusive, outside of the main bird nesting period. If not possible, then a nesting bird check should be undertaken immediately (within 24 hours) prior to the clearance by a suitably experienced Ecologist.	4.5.7, 4.5.10
Great crested newt (*Triturus cristatus*)	Works highly likely to result in an offence due to the removal of terrestrial habitat within 100 m of a potential GCN breeding pond.	All waterbodies within 500 m of the Site that are not considered to lie beyond significant barriers to dispersal will be subject to environmental DNA (eDNA) surveys for GCN. eDNA surveys can only be undertaken between 15th April and 30th June. Should these waterbodies test positive for GCN, then a full suite of traditional surveys should be undertaken if the European Protected Species licensing route is to be taken. These can only be undertaken between mid-March and mid-June with at least two undertaken mid-April to mid-May. Should GCN presence be confirmed, District Level Licensing (DLL) could be explored as an alternative licensing route. eDNA surveys are still recommended if applying for DLL to confirm presence/likely absence and avoid unnecessarily applying for DLL.	4.5.12-4.5.15
Reptiles	Potential to disturb, injure or kill reptiles on Site.	Precautionary Methods of Working (PMW) will be implemented.	4.5.17-4.5.18
Roosting bats	Potential for the works to result in the damage or destruction of bat roosts and the killing or injury of bats within B1, T1 and T2.	Demolition of B1 to take place in the winter months (December-February). If the demolition must take place outside of December to February, then a pre-commencement survey is required prior to demolition by a suitably licensed and qualified ecologist. T1 and T2 subject to an aerial inspection survey. Further surveys may be required following these surveys.	4.5.21-4.5.23
Foraging and/or commuting bats	Potential for the works to result in the reduction of foraging habitat for bats/severance of bat foraging and/or commuting routes.	One survey visit per season (spring – April/May, summer – June/July/August, autumn – September/October) is required. Deployment of static bat detectors at suitable locations across the Site, set to collect data on five consecutive nights per month (April-October) is also required. Guidance set out in Bats and Artificial Lighting in the UK must be followed.	4.5.24-4.5.25

Ecological feature	Potential impacts	Recommendations, including any further surveys	Recommendations sections
Badger (*Meles meles*)	Works have the potential to damage or destroy a badger sett. In addition, there a chance that badgers may be injured, killed or entrapped during construction.	Further survey for badger is required of the Site and 30 m from the Site boundary prior to the commencement of works. Further surveys may be required after this survey. Precautionary Methods of Working (PMW) followed to avoid risk of entrapment or injury of badgers that may pass through the Site during construction.	4.5.27-4.5.30
Otter (*Lutra lutra*)	Works have the potential to disturb otters, as well as the potential to damage or destroy a holt. Indirect effects are likely in the form of pollution of the watercourses.	Further survey of WC1 and WC2 for otter including a 200 m buffer.	4.5.32
Water vole (*Arvicola amphibius*)	Works have the potential to disturb water voles, as well as the potential to damage or destroy their burrows. Indirect effects are likely to occur in the form of pollution of the watercourses.	Assessment of WC1 for its suitability for water vole is required. Further survey of WC1 for water vole may be required following the suitability survey, including a 200 m buffer. Two surveys would be undertaken: one 'early season' survey (mid-April – June, inclusive) and a second 'late season' survey (July – September, inclusive). If presence of water vole is confirmed during the first visit, a second visit may not be required.	4.5.34
Aquatic invertebrates including white-clawed crayfish (WCC, *Austropotamobius pallipes*)	Works have the potential to disturb, injure or kill WCC as well as damaging or destroying their burrows. Works have the potential to impact upon aquatic invertebrates, if present in the watercourse via pollution entering the watercourse.	Assessment of WC1 for its suitability for WCC is required. Pollution prevention measures followed to prevent pollution of watercourses.	4.5.37-4.5.38
Fish	Works have the potential to impact upon fish species, if present in the watercourse via pollution entering the watercourse.	Pollution prevention measures followed to prevent pollution of watercourses.	4.5.40
Additional Species of Principal Importance	Works have the potential to disturb, injure, kill or entrap individual hedgehogs (*Erinaceus europaeus*), brown hare (*Lepus europaeus*) or common toad (*Bufo bufo*).	Precautionary Methods of Working to be followed to mitigate risk to individuals.	4.5.42-4.5.43

Taking into account the habitat types present on Site and their condition, in addition to the current proposed Site Plan (Appendix C, subject to change), the BIA is currently considered likely to demonstrate a net loss of habitat and hedgerow units. There are expected to be impacts to

watercourse units, but this cannot be assessed at this stage as a Modular River Physical (MoRPh) assessment has not yet been carried out. A MoRPh survey will be required to finalise the BIA. If enhancement/creation recommendations outlined in Section 4 can be implemented, then it is considered likely that the loss of units on-Site can be reduced. Alterations to the Site layout and/or off-site habitat creation and/or enhancement may be required to achieve net gain.

Suggested measures to reduce unit loss under current proposals include:

- Enhancement of bramble scrub to mixed scrub: Instead of the removal of bramble scrub on Site, it is recommended that these areas are retained and enhanced to mixed scrub in moderate condition;
- Creation of moderate condition modified grassland: Some areas of modified grassland proposed within the proposals plan could be planted with a flowering lawn mixture and managed in moderate condition;
- Creation of a species-rich native hedgerow: This hedgerow is recommended on the western-most northern boundary edge, adjacent to one of the areas of created other neutral grassland, managed in good condition.
- H4, H5 and H6 have lengths that are physically retained under the current proposals. However, these would be brought under private residential curtilage, and as such are considered to be lost. It is recommended that the garden boundaries are adjusted so that the hedgerows fall outside of private residential curtilage, with a 1-2m buffer, so that the hedgerow and its condition can be retained. If this recommendation is implemented, along with the above recommendations, then this can be expected to reduce the loss of hedgerow units on Site.

This report should be read in conjunction with "2439_Statutory Metric DRAFT_Baseline Habitats" (EMEC Ecology, 2025a) for the Site.

Measures that may be taken to enhance the value of the Site for species include the following:

- Requirements for specific enhancements for bats will be provided after the required bat surveys have been completed and will be included within the resulting bat report;
- Bird boxes could be implemented across the Site to further increase nesting bird provision on Site post-development;
- Night-flowering plants could be included in the proposals, possibly within planters or in borders, which will attract night-flying invertebrates and in turn, provide a food source for bats;
- Invertebrate habitat boxes could be implemented across the Site, which will provide valuable sheltering, overwintering and nesting spaces for a range of terrestrial invertebrates;
- To provide habitat for several species' groups on Site post-development, habitat piles could be included within the proposals;
- In order to maintain open landscape post-development for foraging hedgehogs, consideration should be given to installing 'Hedgehog highways'. In addition,

hedgehog boxes could be placed in quiet areas of the Site, ideally outside of private residential curtilage;

- New hedgerows could be planted at garden boundaries instead of the proposed fences. Additionally, the Site and species in the local area would benefit from additional tree planting in areas outside of private residential curtilage.

1. Introduction

1.2. Purpose and Scope of the Report

1.2.1. EMEC Ecology was commissioned by Allison Homes East Midland Ltd. to undertake a Preliminary Ecological Appraisal (PEA), Daytime Bat Walkover (DBW) and Baseline Biodiversity Impact Assessment (BIA) of Stanton 2, Land East of Meadow Lane, Stanton under Bardon, Markfield, Leicestershire (NGR: SK 46726 10010), hereafter referred to as 'the Site', location shown in Figure 1. The PEA, DBW and Baseline BIA were required to inform a planning application for a proposed residential development of 27 properties. Further details regarding the proposals are provided in Section 4.1. A plan showing the current proposals for the Site, as provided by Allison Homes East Midlands Ltd. and in the iteration which the assessments made within this report are based upon, is provided within Appendix C. The current proposals are not finalised.

1.2.2. The PEA, DBW and Baseline BIA followed the Guidelines for Accessing and Using Biodiversity Data in the UK (CIEEM, 2020), the Guidelines for Preliminary Ecological Appraisal, the Guidelines for Ecological Report Writing (CIEEM, 2017 a & b), Bat Surveys for Professional Ecologists: Good Practice Guidelines (Bat Conservation Trust, 2023), the Biodiversity Net Gain Report & Audit Templates (2021) and the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'.

1.2.3. The aims of the PEA, DBW and Baseline BIA were to:

- Undertake a desk study to identify any statutory and/or non-statutory nature conservation sites and other notable habitats and records of legally protected and notable species within the Study Area (defined in Section 2.1).
- Identify and map habitats occurring within the Site.
- Identify the presence of, or the potential for the Site to support legally protected and/or notable species, including an assessment of the bat roost potential of buildings, trees and structures on Site.
- Identify any potential impacts of the proposed development on protected or notable habitats and species, in addition to any associated constraints to the proposals in line with current ecological legislation.
- Assess the baseline biodiversity units on Site using the Statutory Biodiversity Metric (Natural England, 2024).
- Provide recommendations for mitigation, enhancements and further surveys relating to the proposed development.

1.3. Site Location and Context

1.3.1. The Site primarily consisted of modified grassland with a fenced area containing an artificial sand and rubber surface, and a small wooden stable block and associated hardstanding. The Site was situated within a semi-rural context, with agricultural land being the dominant habitat in the wider landscape. Immediately adjacent to the north, east and south-eastern boundaries, the Site was surrounded by pasture land. Next to the north-western boundary of the Site, there were residential properties making up the small town of Stanton under Bardon.

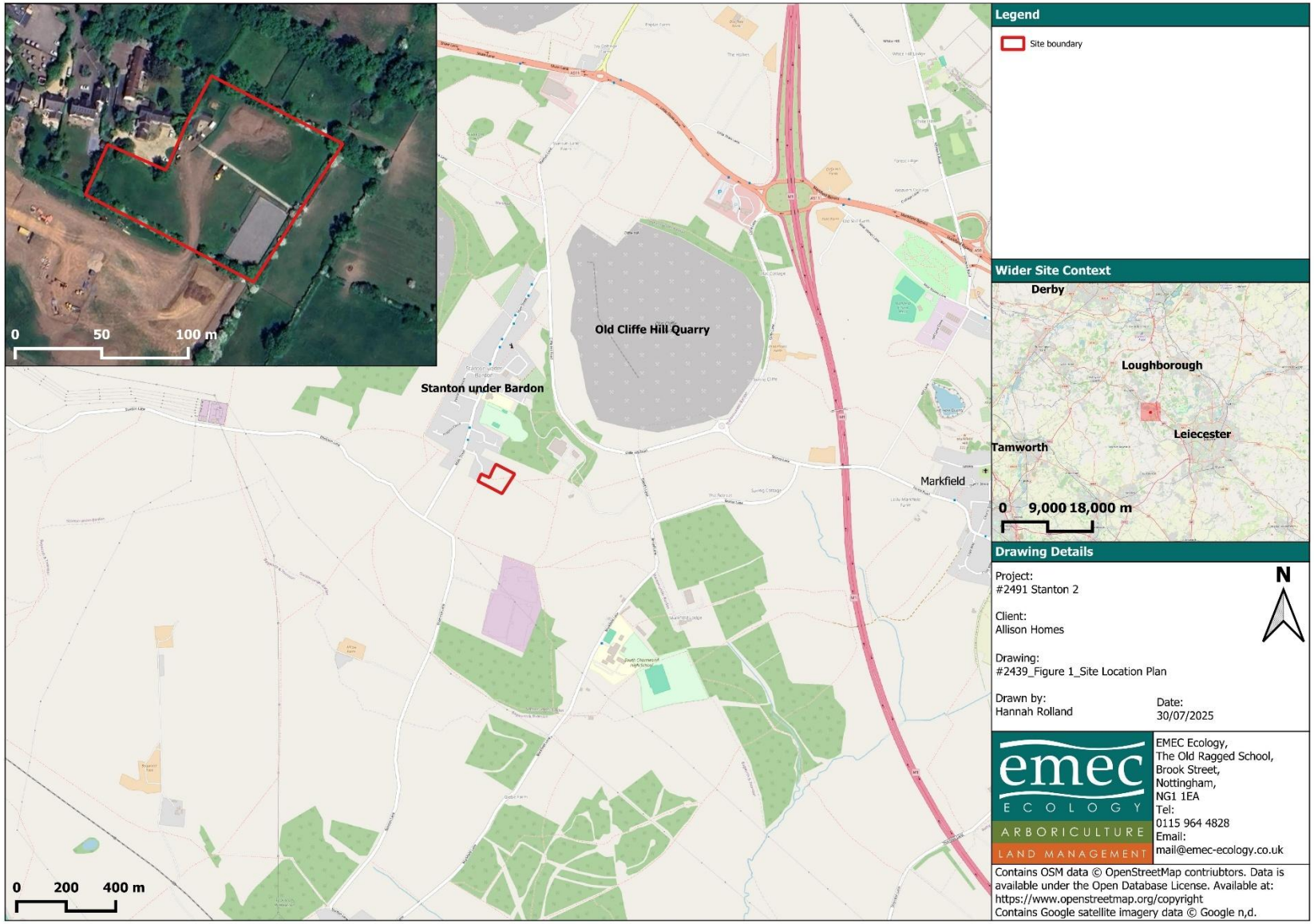
On the west and south-western boundary, there was land under construction for residential developments. Markfield was located 1.67 km east of the Site. The River Lin was also identified 4 km east of the Site. There were also two quarries identified in close proximity to the Site; Old Cliffe Hill Quarry 400 m north-east of the Site, Cliffe Hill Quarry 700 m north-west of the Site.

1.4. Planning and Legislation

1.4.1. Current legislation and planning policy have been considered when preparing this report and when planning and undertaking the associated surveys. This is necessary to identify potential constraints to the project, and to inform recommendations for further surveys and mitigation. Compliance with legislation may require the attainment of relevant European Protected Species licences prior to the commencement of works. Further detail regarding the legislation considered as part of this PEA, DBW and Baseline BIA is provided in Appendix G.

- The Conservation of Habitats and Species Regulations, 2017 (as amended).
- The Wildlife and Countryside Act, 1981 (as amended).
- The Environment Act, 2021.
- The Countryside and Rights of Way Act, 2000.
- The Natural Environment and Rural Communities Act (NERC), 2006.
- The National Planning Policy Framework, 2024.
- The Protection of Badgers Act, 1992.
- The Hedgerow Regulations, 1997.
- Leicester, Leicestershire & Rutland Biodiversity Action Plan, 2016-2026.
- Leicester and Rutland Local Nature Recovery Scheme, 2025.
- Taxa-specific conservation lists (e.g. Bird Species of Conservation Concern, Stanbury *et al.*, 2021).

Figure 1 – Site location plan



2. Methodology

2.1. Desk Study

2.1.1. A desk-based assessment of the Site including appropriate buffer zones was undertaken, the Site and buffer together are hereafter referred to as the 'Study Area'. The Study Area for each receptor is defined in Table 2 below.

2.1.2. The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk[1]) was reviewed to identify any statutory designated nature conservation sites and Habitats of Principal Importance (HPI, Section 41 of the NERC Act, 2006), in addition to records of previous European Protected Species Licences (EPSLs) within the Study Area. Although it is acknowledged that this database may not be up to date, if present, licences for EPSLs within the locality can provide further information of species that may be present and can augment the species records provided by data centres.

2.1.3. Leicestershire and Rutland Environmental Records Centre was instructed to undertake a data search in July 2025, to identify non-statutory designated sites and records of protected and notable species within the Study Area. With regard to species records, only those considered relevant to the Site (for example where habitat types present on Site or within the surrounding area would reasonably be considered to support that species), and that are ten years old or less have been included within the summary of records provided (Table 5). Exceptions to this will however be made, such as in instances whereby historical records are pertinent to the specific Site and/or proposals. A full copy of the data search is available on request.

2.1.4. Ordnance Survey (OS) maps and satellite imagery (Google Maps, maps.google.com/maps and Google Earth, earth.google.com) were reviewed to identify any waterbodies and other waterbodies within a 500 m buffer of the Site boundary.

Table 2 – Summary of Study Areas and resources used for desk study.

Receptor	Resource	Study Area (radius from Site boundary)
Waterbodies	Combination of OS maps and satellite imagery	500 m
HPIs Nationally important statutory designated sites Internationally important statutory designated sites EPSLs	MAGIC	1 km 5 km 20 km 2 km
Non-statutory designated sites Protected/principal species records	Leicestershire and Rutland Environmental Records Centre	2 km 2 km

2.1.5. The Leicester, Leicestershire & Rutland Biodiversity Action Plan, 2016-2026 was checked for any species or habitats that may be relevant to the Site.

[1] MAGIC resource was accessed on 14/07/2025.

2.2. Field Survey

Habitat Classification and Condition Assessment

2.2.1. Habitats on Site were assessed and classified according to the UK Habitat Classification system (UKHab Ltd, 2023). A detailed plan (Appendix A) was subsequently completed using Geographical Information Systems (QGIS), mapping habitats using UKHab suggested symbology (UKHab Ltd, 2023) and including target notes to record important ecological features including sightings, signs, evidence and potential habitat for legally protected and/or notable species. Photographs and descriptions of any target notes are provided in Appendix B.

2.2.2. The Minimum Mapping Units (MMU) used when mapping habitats on Site were >= 25 m sq / >=5 m length by >=1 m width for area habitats and 5 m length by <1 m width for linear habitats.

2.2.3. Only the essential secondary codes (UKHab Ltd, 2023) were used to map the habitats on Site.

2.2.4. The BIA process relies on baseline information regarding the condition of habitats within a Site prior to the proposed works taking place. A condition assessment was therefore undertaken as part of the field survey, using the Statutory DEFRA Biodiversity Metric condition assessment sheets.

Species Scoping Assessment

2.2.5. Habitats on Site were also assessed for their potential to support protected, priority or notable species that may be affected by the proposals. Any incidental sightings of individuals or field signs of protected species, such as footprints, droppings or feeding remains were noted during the survey and their locations recorded as a target note.

2.2.6. The species scoping assessment included noting the location of any non-native, invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended). Such species include (but are not limited to) New Zealand pygmyweed (*Crassula helmsii*), Japanese knotweed (*Reynoutria japonica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*Rhododendron* sp.), and Himalayan balsam (*Impatiens glandulifera*).

Preliminary Roost Assessment

2.2.7. A Preliminary Roost Assessment (PRA) for bats was undertaken of all the trees and structures within the Site and adjacent to the Site, where access permitted and where these features were considered likely to be affected by the proposals. The PRA was undertaken both internally and externally from ground-level only and included the identification and assessment of the Bat Roost Potential (BRP) of any Potential Roost Features (PRFs) present, in addition to a systematic search for any evidence of bats. Evidence looked for included live or dead bats, droppings, feeding remains, staining from fur oils and urine and scratch marks.

2.2.8. Where necessary, binoculars and a high-powered torch were used to assist with the identification and assessment of PRFs and search for bat field signs. The PRA, including the categorisation of BRP was undertaken in line with the Bat Conservation Trust's Good Practice Guidelines 4th Edition (Bat Conservation Trust (2023), Appendix F) and the trees and structure locations, with their corresponding BRP are shown in Appendix E.

2.3. BIA

Statutory Biodiversity Metric

2.3.1. Using the classification and condition assessment of habitats undertaken during the field survey, a baseline BIA was completed using the Statutory Biodiversity Metric. This involves inputting baseline data for existing habitats. The Metric calculates the value of biodiversity units on Site for area habitats (such as grassland), in addition to linear hedgerow habitats.

2.3.2. Assessed habitat conditions are provided in Section 3. However, the completed full condition sheets for the Site can be provided on request.

2.4. Limitations

2.4.1. A single visit at any time of year is likely to miss a proportion of the plant and animal species supported by a site. Ecological surveys are limited by factors that affect the visibility or presence of plants and animals such as time of year, migration patterns and behaviour. Therefore, the survey has not produced a comprehensive species list for the Site.

2.4.2. Biological records held by data centres can be received from a wide variety of sources, as such they may or may not be detailed and/or accurate. Likewise, desk study data should not be treated as a comprehensive list of species within a search area. Many species are under-recorded and low numbers of records can indicate a lack of survey effort, as opposed to the absence of a species.

2.4.3. The list of non-native plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive, and these plants are found in a variety of different habitats. The survey checked for all species listed on Schedule 9. However, there may be additional non-native invasive plant species present which were not recorded during the survey due to access constraints or surveying outside of the relevant growing period.

2.4.4. A small watercourse is positioned adjacent to the eastern boundary of the Site; however, a river condition assessment was not completed at the time of the PEA survey. As such, the Biodiversity Impact Assessment does not include an assessment of the impacts to water course units. A condition assessment of the watercourse (via a MoRPh survey) will be required to finalise the BIA and overcome this limitation. As such, this PEA, PRA and BIA report, as well as the associated document "2439_Statutory Metric DRAFT_Baseline Habitats" (EMEC Ecology, 2025a) are considered to be in draft format until the MoRPh survey has been completed and the watercourse units have been assessed within the Statutory Metric.

2.5. Re-survey of the Site

2.5.1. If the works are not undertaken on site within 12 months of the date of survey upon which this appraisal is based, or if any changes to the proposals are made, a further ecological survey may be necessary. This is due to the mobile nature of many protected/notable species and potential changes to the suitability of habitat present.

2 Results

3.1. Desk-based Assessment[2]

Designated Sites, Habitats of Principal Importance and Waterbodies

3.1.1. There were seven statutory designated nature conservation sites identified within the Study Area. These are summarised in Table 3 below.

Table 3 – Summary of statutory designated nature conservation sites identified within the Study Area.

Site name and designation	Distance and direction from Site	Brief description
Internationally important sites		
River Mease SAC[3]	10.53 km NW	Designated due to its riverine population of spined loach (*Cobitis taenia*) and bullhead (*Cottus gobio*). It is a small tributary of the River Trent and has retained a reasonable degree of channel diversity compared to other similar rivers containing spined loach populations.
Nationally important sites		
Cliffe Hill Quarry SSSI[4]	849 m NE	Geological Conservation - This site provides excellent exposures of the contact between the southern-type dirorite (markfieldite) and the volcanic and sedimentary rocks of the Precambrian Charnian Maplewell Series. The markfieldite shows signs of having been intruded by magme-stoping and is considered to be the plutonic expression of the igneous episode which produced the Charnian volcanic rocks.
Bardon Hill Quarry SSSI	2.76 km NW	Geological Conservation Review - Bardon Hill is an extensive area of active quarrying which provides important exposures of Precambrian Igneous rocks which are important for the understanding of the late Precambrian Volcanic history of the Charnwood Forest area. The quarries also provide exposures demonstrating mineralisation related to the hydrothermal modifications of an ancient lava flow, of Precambrian age.
Ulverscroft Valley SSSI	3.61 km NEE	The site supports a series of semi-natural habitats representative of those formerly more widespread on the siliceous clay soils of Charnwood Forest. These include permanent grassland, heath, woodland and wetlands. While each habitat is important on its own, the combination produces one of the best wildlife Sites in Leicestershire. The wet grasslands have no equivalent in the County. Over 200 plant species have been recorded, some rare in Leicestershire, and there are mammals, insects and birds of note.
Holly Rock Fields SSSI	4.33 km NNW	Holly Rock Fields SSSI is a nationally important site for its lowland species-rich neutral grassland. The grassland consists mainly of the nationally scarce National Vegetation Classification (NVC) type MG5 crested dog's-tail (*Cynosurus cristatus*) – common knapweed (*Centaurea nigra*) grassland.
Charnwood Lodge SSSI	4.57 km NNE	Charnwood Lodge contains the best and most extensive examples of moorland habitats in the East Midlands, formerly typical of the

[2] A copy of the full desk study data can be provided upon request.
[3] Special Area of Conservation – Protected under the Conservation of Habitats and Species Regulations, 2019 (as amended).
[4] Site of Special Scientific Interest – Protected under the Wildlife and Countryside Act, 1981 (as amended).

Site name and designation	Distance and direction from Site	Brief description
		Charnwood Forest area. It is dominated by a series of rocky outcrops and ridges of considerable geological importance.
Locally important sites		
Billa Barra Hill Nature Reserve LNR[5]	1.09 km N	This area is a Regionally Important Geological Site (RIGS). A range of mosses and lichens grow on the rock surfaces. The rest of the site is acid grassland recovering from improved grassland and as nutrient levels reduce the flora becomes more diverse.

3.1.2. In addition, Natural England's Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) tool (available at MAGIC.defra.gov.uk) showed the Site also lay within the SSSI Impact Risk Zones (IRZ) for Cliffe Hill Quarry SSSI and Bardon Hill Quarry SSSI.

3.1.3. In line with the IRZ tool, should any works on Site fall within the following categories, then Natural England must be consulted prior to said works taking place:

- **Infrastructure:** Airports, helipads and other aviation proposals.
- **Air Pollution:** Livestock & poultry units with a floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500 tonnes.

3.1.4. There were 26 non-statutory designated nature conservation sites identified within the Study Area. These are summarised in Table 4 below.

Table 4 – Summary of non-statutory designated nature conservation sites identified within the Study Area.

Site name and designation	Distance and direction from Site	Brief description
Semi-improved Grassland (11230) **Historic** LWS[6]	Adjacent to Site, SE	No recent survey data - not known if the site still has value.
Stanton under Bardon, Ash tree by 295 Main St LWS	70 m NW	Large Ash tree (T21, with TPO) of diameter 1120mm.
Stanton Under Bardon, Ash-1 LWS	89 m SW	Ash (*Fraxinus excelsior*), 1200mm stem diameter.
Stanton Under Bardon, Ash-2 LWS	92 m SW	Ash, 1200mm stem diameter.
Stanton under Bardon, Main St hedgerow LWS	97 m NW	Hedgerow.
Markfield, Cliffe Hill Rd verge LWS	315 m NE	Narrow but species-rich verge on busy road, backed by dense scrub and quarry.
Old Cliffe Hill Quarry, Lagoon South of void LWS	400 m NE	Former quarry lagoon with *Typha latifolia* and a *Potamogeton.*
Stanton under Bardon, Thornton Lane Ash LWS	400 m SW	Large hedgerow Ash, 1100mm diameter, Ivy covered.
New Cliffe Hill Quarry, Lagoons to South LWS	460 m NW	Series of 9 large ponds/lagoons, with *Potamogeton* and *Typha latifoli*a swamp, in rough species-rich grassland and scrub.
Markfield, Elliott's Lane Hedge LWS	530 m E	Species-rich hedge, with Oak/Ash trees and deep ditch, along busy lane. 5-6spp/30m stretch.

[5] Local Nature Reserve – Designated by the local authority, under the National Parks and Access to the Countryside Act, 1949.
[6] Local Wildlife Site

Site name and designation	Distance and direction from Site	Brief description
Stanton under Bardon, Fir Tree House Oaks LWS	755 m SE	Two large mature Oaks in hedgerow, described as 'near-veteran'. Dimensions unknown.
Thornton, The Partings Plantation Pond LWS	830 m SW	Small pond, a former parish-level field pond, now surrounded by recent plantation, with *Potamogeton natans.*
Billa Barra Hill Nature Reserve LWS	1.1 km N	Includes the Billa Barra Hill LWS.
Markfield, Grassland by Stoney Farm LWS	1.2 km NE	Site has 16 grassland indicator species and represents notable grass community 'MG4' or 'floodplain meadow'.
Cliffe Hill Grassland LWS	1.2 km NW	Area of rough and fairly species rich grassland on north-facing slope of hill, quarried to the south. Open access.
Billa Barra Hill LWS	1.25 km N	Valuable acid grassland and mixed grassland habitats, including presence of rare plant register species within the pond present on Site.
Markfield, Land Adjacent Cricket Ground LWS	1.6 km NE	Acid grassland, mesotrophic grassland, early successional communities.
Hill Hole Quarry LWS	1.65 km NE	Contains red data book species and valuable mixed grassland and acid grassland habitats.
Hill Hole Meadow LWS	1.75 km NE	Contains mesotrophic grassland with at eight primary criteria species present.
Altar Stones, Markfield LWS	1.82 km NE	Acid grassland with eight criteria species present and mixed grassland with 12 criteria species.
Markfield Roadside Verge Nature Reserve 2 LWS	1.85 km NE	Valuable mesotrophic grassland with 11 species from the criteria list.
Markfield Roadside Verge Nature Reserve 3 LWS	1.9 km NE	Verge with valuable species rich grassland with 13 criteria species and a number of orchids.
Thornton Reservoir LWS	1.9 km S	A reservoir containing valuable pond vegetation, with mature trees, hedgerows and woodland. It also supports many bat species.
Raunscliffe, Markfield LWS	1.93 km NE	A valuable acid grassland with six primary criteria species, and mixed grassland with 11 criteria species present.
Markfield Roadside Verge Nature Reserve 2 LWS	2 km NE	Grassland verge with 17 criteria species, including orchids.
Thorntons Meadows LWS	2 km S	Contains neutral grassland and mixed grassland, both with many criteria species identified.

3.1.5. There was one Habitat of Principal Importance (HPI) identified within the Study Area. This was one parcel of good quality semi-improved grassland, located 740 m north-west of the Site. This was relatively well connected to the Site, with only a small road breaking the connectivity.

3.1.6. There were 27 waterbodies identified within the Study Area. These are discussed further with regard to species in the following section.

Species

3.1.7. Records of protected, priority and notable species were received from Leicestershire and Rutland Environmental Records Centre (LRERC). A summary of these records is provided in Table 5 below. For further detail regarding which records are included in the summary, please refer to Section 2.

Table 5 – Summary of protected, priority and notable species records from within the Study Area.

Common name	Scientific name	Total no. records	Closest record	Most recent record	Conservation status/protection
Plants					
Devil's-bit scabious	*Succisa pratensis*	4	2021, 153 m ESE	2022, 153 m ESE	LRPR[7]
Tormentil	*Potentilla erecta subsp. erecta*	2	2022, 153 m ESE	Same as closest record	LRPR
Columbine	*Aquilegia vulgaris*	8	2016, 247 m NNW	2021, 1.99 km SSW	LRPR
Wall cotoneaster	*Cotoneaster horizontalis*	5	2019, 247 m NNW	Same as closest record	WCA9[8] - INVASIVE
Wild strawberry	*Fragaria vesca*	4	2016, 247 m NNW	2019, 247 m NNW	LRPR
Giant hogweed	*Heracleum mantegazzianum*	2	2017, 265 m WSW	Same as closest record	WCA9 - Invasive
Scarlet pimpernel	*Lysimachia arvensis*	3	2021, 378 m SSE	Same as closest record	LRPR
Bay willow	*Salix pentandra*	2	2021, 472 m S	Same as closest record	LRPR
English Bluebell	*Hyacinthoides non-scripta*	18	2017, 0.5 km E	2021, 1.44 km N	LRPR, WCA8[9]
Montbretia	*Crocosmia aurea x pottsii = C. x crocosmiiflora*	3	2017, 0.5 km E	2022, 0.52 km E	WCA9
Bistort	*Bistorta officinalis*	1	2015, 0.51 km W	Same as closest record	LRPR
Cherry laurel	*Prunus laurocerasus*	11	2015, 0.51 km W	2024, 1.2 km NE	GBNNSIP
Greater celandine	*Chelidonium majus*	5	2015, 0.51 km W	2021, 1.99 km SSW	GBNNS, LRPR
Harebell	*Campanula rotundifolia*	10	2015, 0.51 km W	2022, 1.82 km ENE	LRPR
Hollyberry cotoneaster	*Cotoneaster bullatus*	1	2015, 0.51 km W	Same as closest record	WCA9 - INVASIVE
Variegated yellow archangel	*Lamiastrum galeobdolon subsp. argentatum*	12	2015, 0.51 km W	2022, 1.09 km SW	WCA9 - INVASIVE
Marsh ragwort	*Jacobaea aquatica*	2	2022, 0.55 km ESE	Same as closest record	LRPR
Rye brome	*Bromus secalinus*	3	2015, 0.65 km N	2022, 1.89 km SE	GBNNS, LRPR

[7] Leicestershire and Rutland Rare Plant Register, 2022.
[8] Wildlife and Countryside Act, 1981 (as amended) – Schedule 9 invasive species.
[9] Wildlife and Countryside Act, 1981 (as amended) – Schedule 8 protected plant species.

Common name	Scientific name	Total no. records	Closest record	Most recent record	Conservation status/protection
Japanese knotweed	*Reynoutria japonica*	10	2020, 1.01 km E	2022, 1.06 km E	WCA9 - INVASIVE
Himalayan cotoneaster	*Cotoneaster simonsii*	1	2015, 1.09 km SW	Same as closest record	WCA9 - INVASIVE
Himalayan balsam	*Impatiens glandulifera*	10	2020, 1.13 km ENE	2022, 1.61 km SE	WCA9 - INVASIVE
Heather	*Calluna vulgaris*	1	2015, 1.2 km E	Same as closest record	LRPR
Mat-grass	*Nardus stricta*	1	2015, 1.2 km E	Same as closest record	LRPR
Sand spurrey	*Spergularia rubra*	1	2015, 1.2 km E	Same as closest record	LRPR
Slender trefoil	*Trifolium micranthum*	1	2015, 1.2 km E	Same as closest record	LRPR
New Zealand pigmyweed	*Crassula helmsii*	1	2015, 1.24 km N	Same as closest record	WCA9
Round-leaved crowfoot	*Ranunculus omiophyllus*	1	2015, 1.24 km N	Same as closest record	LRPR
Heath speedwell	*Veronica officinalis*	2	2018, 1.34 km N	2020, 1.44 km N	LRPR
Grass vetchling	*Lathyrus nissolia*	2	2022, 1.39 km SSE	2023, 1.54 km SSE	LRPR
Common cudweed	*Filago germanica*	1	2016, 1.41 km NE	Same as closest record	LRPR
Field scabious	*Knautia arvensis*	1	2021, 1.44 km N	Same as closest record	LRPR
Buck's-horn plantain	*Plantago coronopus*	2	2017, 1.54 km NE	2018, 1.83 km NW	LRPR
Wood-sorrel	*Oxalis acetosella*	1	2015, 1.57 km S	Same as closest record	LRPR
Pontic rhododendron	*Rhododendron ponticum*	2	2021, 1.61 km SSW	Same as closest record	WCA9
Common Valerian	*Valeriana officinalis*	2	2021, 1.68 km S	Same as closest record	LRPR
Small-leaved lime	*Tilia cordata*	3	2021, 1.81 km S	Same as closest record	LRPR
Navelwort	*Umbilicus rupestris*	1	2023, 1.82 km E	Same as closest record	LRPR
Lesser chickweed	*Stellaria pallida*	1	2021, 1.99 km ENE	Same as closest record	LRPR
Birds					
Bullfinch	*Pyrrhula pyrrhula*	22	2015, 202 m E	2022, 1.4 km SSE	BoCC5 Amber, SPI[10]
Dunnock	*Prunella modularis*	21	2019, 202 m E	2023, 1.84 km ENE	Bocc5[11] Bocc5 amber-listed, SPI
Song thrush	*Turdus philomelos*	23	2019, 202 m E	2023, 1.89 km S	SPI, Bocc amber-listed
Swallow	*Hirundo rustica*	16	2019, 202 m E	2023, 435 m N	LBAP[12]
Swift	*Apus apus*	4	2019, 202 m E	2020, 1.8 km E	LBAP, Bocc red-listed
House martin	*Delichon urbicum*	8	2016, 335 m N	2022, 435 m N	LBAP, Bocc5 red-listed

[10] Species of Principal Importance under Section 41 of the Natural Environment Rural Communities Act (NERC Act, 2006).
[11] Birds of Conservation Concern 5, 2021.
[12] Local Biodiversity Action Plan.

Common name	Scientific name	Total no. records	Closest record	Most recent record	Conservation status/protection
Greylag goose	*Anser anser*	3	2016, 435 m N	Same as closest record	Bocc5 amber-listed
House sparrow	*Passer domesticus*	9	2017, 435 m N	2023, 435 m N	Bocc5 red-listed, SPI
Lesser redpoll	*Acanthis cabaret*	5	2015, 435 m N	2017, 435 m N	Bocc5 red-listed, SPI
Linnet	*Linaria cannabina*	5	2016, 435 m N	2021, 1.58 km SSW	Bocc5 red-listed, SPI
Skylark	*Alauda arvensis*	3	2017, 435 m N	2019, 1.07 km NW	Bocc5 red-listed, SPI
Starling	*Sturnus vulgaris*	4	2018, 468 m NNE	2022, 1.22 km SSE	Bocc5 red-listed, SPI
Crossbill	*Loxia curvirostra*	1	2019, within 1 km	Same as closest record	WCA1[13]
Peregrine	*Falco peregrinus*	10	2015, within 1 km	2020, within 2 km	WCA1
Barn owl	*Tyto alba*	1	2021, within 1 km	Same as closest record	WCA1
Fieldfare	*Turdus pilaris*	7	2015, within 1 km	2021, within 2 km	Bocc5 red-listed, WCA1
Red kite	*Milvus milvus*	3	2017, within 1 km	2021, within 1 km	WCA1
Redwing	*Turdus iliacus*	9	2018, within 1 km	2021, within 1 km	Bocc5 amber-listed, WCA1
Sand martin	*Riparia riparia*	2	2019, 1.07 km NW	Same as closest record	LBAP
Yellowhammer	*Emberiza citrinella*	4	2019, 1.07 km NW	2022, 1.4 km SSE	Bocc5 red-listed, SPI
Spotted flycatcher	*Muscicapa striata*	4	2022, 1.22 km SSE	Same as closest record	Bocc5 red-listed, SPI
Grasshopper warbler	*Locustella naevia*	2	2021, 1.4 km SSE	Same as closest record	Bocc5 red-listed, SPI
Marsh tit	*Poecile palustris*	2	2015, 1.4 km SSE	2017, 1.87 km S	Bocc5 red-listed, SPI
Reed bunting	*Emberiza schoeniclus*	2	2015, 1.4 km SSE	Same as closest record	Bocc5 amber-listed, SPI
Willow tit	*Poecile montanus*	5	2015, 1.4 km SSE	2019, 1.4 km SSE	Bocc5 red-listed, SPI
Hawfinch	*Coccothraustes coccothraustes*	1	2017, 1.82 km ENE	Same as closest record	Bocc5 red-listed, SPI
Herring gull	*Larus argentatus*	1	2017, 1.87 km S	Same as closest record	Bocc5 red-listed, SPI
Lapwing	*Vanellus vanellus*	1	2023, 1.89 km S	Same as closest record	Bocc5 red-listed, SPI
Hobby	*Falco subbuteo*	2	2017, within 2 km	2022, within 1 km	WCA1
Kingfisher	*Alcedo atthis*	3	2017, within 2 km	2023, within 2 km	WCA1
Amphibians					
Great crested newt	*Triturus cristatus*	36	2015, 202 m E	2019, 406 m NW	EPS[14], SPI, WCA5[15]

[13] Wildlife and Countryside Act, 1981 (as amended) – Schedule 1 Birds which are Protected by Special Penalties
[14] European Protected Species under The Conservation of Habitats and Species Regulations, 2010.
[15] Wildlife and Countryside Act, 1981 (as amended) – Schedule 5 protected animal species.

Common name	Scientific name	Total no. records	Closest record	Most recent record	Conservation status/protection
Smooth newt	*Lissotriton vulgaris*	16	2015, 202 m E	2019, 0.52 km NW	WCA5
Common toad	*Bufo bufo*	17	2019, 336 m WNW	Same as closest record	WCA5, SPI
Common frog	*Rana temporaria*	9	2019, 0.69 km WNW	Same as closest record	WCA5
Reptiles					
Grass snake	*Natrix helvetica*	1	2019, 237 m ESE	Same as closest record	WCA5, SPI
Mammals					
Hedgehog	*Erinaceus europaeus*	13	2019, 125 m WSW	2022, 0.69 km SE	SPI
Brown long-eared bat	*Plecotus auritus*	37	2016, 323 m SSW	2023, 1.2 km NE	LBAP, SPI, WCA5
Common pipistrelle	*Pipistrellus pipistrellus*	65	2016, 323 m SSW	2023, 1.2 km NE	LBAP, WCA5
Leisler's bat	*Nyctalus leisleri*	17	2016, 323 m SSW	2023, 1.55 km NE	LBAP, WCA5
Myotis bat species	*Myotis*	17	2016, 323 m SSW	2023, 1.2 km NE	LBAP, WCA5
Noctule	*Nyctalus noctula*	36	2016, 323 m SSW	2023, 1.2 km NE	LBAP, WCA5
Soprano pipistrelle	*Pipistrellus pygmaeus*	38	2016, 323 m SSW	2023, 1.2 km NE	LBAP, WCA5
Bat	*Chiroptera*	14	2020, 0.51 km ENE	Same as closest record	LBAP, WCA5
Brandt's bat	*Myotis brandtii*	1	2020, 0.51 km ENE	Same as closest record	LBAP, WCA5
Natterer's bat	*Myotis nattereri*	2	2020, 0.51 km ENE	Same as closest record	LBAP, WCA5
Whiskered bat	*Myotis mystacinus*	3	2020, 0.51 km ENE	Same as closest record	LBAP, WCA5
Badger	*Meles meles*	19	2020, within 2 km	2023, within 2 km	PBA[16]
Muntjac	*Muntiacus reevesi*	16	2021, 0.61 km ENE	2023, 1.2 km NE	WCA9
Nathusius's pipistrelle	*Pipistrellus nathusii*	6	2020, 0.7 km E	Same as closest record	WCA5
Serotine	*Eptesicus serotinus*	3	2020, 0.7 km E	Same as closest record	LBAP, WCA5
Daubenton's bat	*Myotis daubentonii*	9	2019, 1 km E	2021, 1.85 km SSE	LBAP, WCA5
Brown hare	*Lepus europaeus*	1	2021, 1.08 km NNW	Same as closest record	SPI
Nyctalus bat species	*Nyctalus*	9	2019, 1.24 km ESE	2020, 1.74 km SSW	WCA5
Otter	*Lutra lutra*	2	2019, 1.51 km W	Same as closest record	EPS, LBAP, WCA5
Whiskered/Brandt's bat	*Myotis mystacinus/brandtii*	1	2023, 1.55 km NE	Same as closest record	LBAP, WCA5
Pipistrelle bat species	*Pipistrellus*	10	2019, 1.55 km N	2020, 1.74 km SSW	LBAP, WCA5
Water vole	*Arvicola amphibius*	1	2025, 1.87 km S	Same as closest record	LBAP, SPI, WCA5
Invertebrates					

[16] Protection of Badgers Act, 1992.

Common name	Scientific name	Total no. records	Closest record	Most recent record	Conservation status/protection
Cinnabar	*Tyria jacobaeae*	12	2019, 237 m ESE	2023, 1.76 km NE	SPI
Grey dagger	*Acronicta psi*	1	2020, 0.51 km W	Same as closest record	SPI
Harlequin ladybird	*Harmonia axyridis*	2	2015, 1.57 km S	2016, 1.71 km E	GBNNS
Purple emperor	*Apatura iris*	14	2023, 1.38 km N	Same as closest record	WCA5
Shaded broad-bar	*Scotopteryx chenopodiata*	1	2015, 1.57 km S	Same as closest record	SPI
Signal crayfish	*Pacifastacus leniusculus*	1	2016, 1.6 km ENE	Same as closest record	WCA9
Small heath	*Coenonympha pamphilus*	15	2018, 1.1 km NW	2022, 1.78 km ENE	SPI
Wall	*Lasiommata megera*	16	2015, 1.2 km E	2019, 1.3 km N	SPI
White-clawed crayfish	*Austropotamobius pallipes*	4	2016, 1.6 km ENE	2021, 1.76 km ENE	LBAP, SPI, WCA5,
White-letter hairstreak	*Satyrium w-album*	1	2015, 1.9 km E	Same as closest record	SPI, WCA5

3.1.8. No records of EPSLs were identified from within the Study Area. However, there were records of Great Crested Newt Class Survey Licence Returns in 2015 with GCN presence confirmed across five surveys, located 205 m east of the Site.

3.2. Field Survey Details

3.2.1. The field survey was carried out by Joe Hall BSC (Hons) on 16/07/2025. The survey was undertaken in suitable weather conditions, as shown in Table 6 below.

Table 6 – Weather conditions

Weather conditions	Survey 1 – PEA & DBW field survey and condition assessment
Temperature (°C)	16
Wind (Beaufort scale)	4
Cloud cover (%)	80
Precipitation	None

3.3. Habitats (Area)

3.3.1. Habitat descriptions are detailed below, along with the UKHab code for each habitat type. Habitats are listed in alpha-numerical order with reference to their UKHab codes and plant species nomenclature follows Stace (2019). Descriptions and photographs of Target Note features are included within Appendix B and the UKHab Habitat Plan of the Site (Appendix A) includes the locations of the Target Notes.

3.3.2. The Site was positioned on a gentle slope, with the highest point situated to the western extent of the Site and the lowest point to the east, where a small watercourse was located.

Modified grassland (g4)

3.3.3. The Site was dominated by modified grassland, covering a total area of 0.7264 ha. The grassland parcel had been disturbed prior to the PEA survey, with evidence of construction vehicle movement through the centre of the parcel and several large spoil heaps positioned to the northern extent of the parcel. The condition assessment and description of the grassland, which is provided below relates to those parts of the grassland which had not been disturbed by construction activity. It has been assumed that the disturbed parts of the Site would otherwise have been in the same condition as those parts undisturbed.

3.3.4. The grassland pertained to a horse grazing paddock which had been left unmanaged. The parcel was tussocky, with a sward height ranging between 30 and 60 cm, and supported isolated areas of bare ground, unrelated to the construction vehicle activity. The grassland was dominated by nutrient-tolerant grasses, supporting fewer than nine species per m^2 and as such was classified as modified grassland. Species recorded most frequently included perennial rye-grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), cocksfoot (*Dactylis glomerata*), smooth meadow grass (*Poa pratensis*) and bent (*Agrostis sp.*). Broad leaved herbs were recorded to cover less than 30% of the total area and included infrequently occurring creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), self-heal (*Prunella vulgaris*), ribwort plantain (*Plantago lanceolata*), cat's ear (*Hypochaeris radicata*), dandelion (*Taraxacum sp*), common knapweed (*Centaurea nigra*) yarrow (*Achillea millefolium*) and spear thistle (*Cirsium vulgare*).

Figure 2 – Modified grassland (g4)

3.3.5. This habitat passed six of seven condition criteria; including essential Criterion A, and was therefore recorded to be in good condition:

- Criterion A, pass: There were on average fewer than eight species present per m^2.
- Criterion B, fail: The sward height was varied; however, no quadrats supported a sward of less than 7cm.
- Criterion C, pass: Cover of scrub accounted for less than 20% of the total grassland area.

- Criterion D, pass: The portions of the grassland which had not recently been disturbed were free of physical damage and as such the whole grassland parcel has been assessed on this basis.

- Criterion E, pass: Cover of bare ground was low, between 1 and 5 % in those portions of the grassland which had not recently been disturbed.

- Criterion F, pass: Cover of bracken was less than 20%.

- Criterion G, pass: No invasive non-native species (as listed on Schedule 9 of the Wildlife and Countryside Act [as amended], 1981).

3.3.6. This habitat does not have strategic significance and contributes 4.36 habitat units to the on Site baseline biodiversity value.

Dense bramble scrub (h3d)

3.3.7. The southern and eastern Site boundaries were defined by unmanaged dense bramble dominated scrub, covering a total area of approximately 0.0429 ha. The scrub was recorded lining the banks of a narrow watercourse and was also recorded to the southern aspect of the horse arena. Scattered hawthorn (*Crataegus monogyna*), creeping thistle (*Cirsium arvense*) and field horse tail (*Equisetum arvense*) were also recorded within the scrub parcel; however, bramble was recorded to be the dominant species with >80% coverage.

Figure 3 – Dense bramble scrub (h3d)

3.3.8. This habitat does not require condition assessment (Condition Assessment N/A). The habitat parcel does not have strategic significance and contributes 0.17 habitat units to the on-Site baseline biodiversity value.

Developed land; sealed surface (u1b)

3.3.9. A small portion of the Site footprint comprised sealed surfaces. This included a concrete slab which was positioned adjacent to the stable block to the northern extent of the Site. The concrete slab extended under the stable block, forming the foundations upon which it was constructed. The total footprint of the stable block and concrete slab was approximately 0.0126 ha. Those grasses which were frequently occurring in the adjacent grassland were recorded encroaching on the concrete slab.

Figure 4 – Developed land; sealed surface (u1b)

3.3.10. This habitat type does not require condition assessment (N/A – other) and these habitat parcels are considered to have high strategic significance under the Leicestershire and Rutland Local Nature Recovery Scheme (LNRS). As this habitat type is very low distinctiveness it does not contribute any habitat units to the baseline value of the Site.

Artificial unvegetated, unsealed surface (u1c)

3.3.11. A horse riding arena was recorded dominating the south-eastern corner of the Site. The arena was constructed from a combination of loose fabric and rubber materials mixed with sand. A portion of the arena had been stripped of this material, exposing a loose gravel bed. As both halves of the arena were considered to be water permeable but unvegetated and artificial, they were collectively classified as an artificial unvegetated, unsealed surface. A footpath (Figure 6) constructed from the same material as the arena (Figure 5) was also recorded passing north-west through the centre of the Site.

Figure 5 – Artificial unvegetated, unsealed surface (u1c)

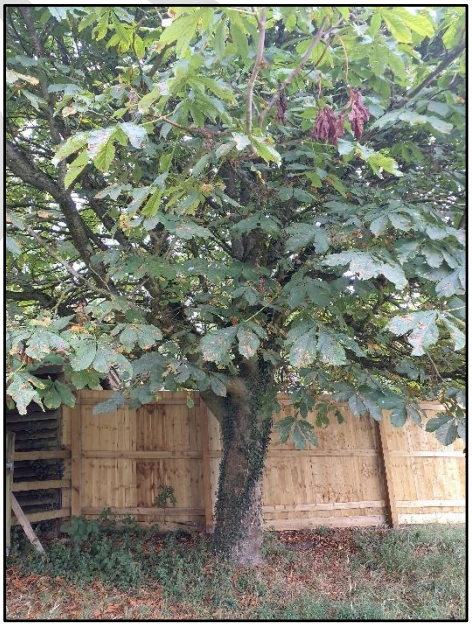
Figure 6 – Artificial unvegetated, unsealed surface (u1c)

3.3.12. This habitat type does not require condition assessment (N/A – other) and these habitat parcels are considered to have high strategic significance under the Leicestershire and Rutland Local Nature Recovery Scheme (LNRS). As this habitat type is very low distinctiveness it does not contribute any habitat units to the baseline value of the Site.

Scattered trees (32)

3.3.13. The Site supported four scattered trees which were independent of any hedgerow, line of trees or scrub parcel. The trees were concentrated towards the western Site boundary. Species recorded included horse chestnut (*Aesculus hippocastanum*), wild cherry (*Prunus avium*), purple cherry plum (*Prunus cerasifera 'Nigra'*), and silver birch (*Betula pendula*). A stand of cherry laurel was identified growing at the base of T2. One of these trees, T5, was small sized (7.5-30 cm DBH) and three of the trees were medium sized (30 - 60 cm DBH).

Figure 7 – Scattered trees (32)



3.3.14. Each of the trees were condition assessed independently of one another. All were assessed to be in moderate condition, passing at least three or four assessment criteria:

- Criterion A: Two of the four trees passed this criterion, with T3 and T4 considered to be non-native.
- Criterion B: All of the trees automatically pass this criterion.
- Criterion C: T2 was considered to be mature and as passed this criterion. None of the other trees passed this criterion as they were considered to be mature.
- Criterion D: Only T3 passed this criterion as all of the other trees were considered to be suffering from root compaction resulting from piling of concrete slabs and varying degrees of pruning.
- Criterion E: T4 passed this criterion, supporting a shallow cavity, with exposed heart wood providing a natural ecological niche for invertebrates. The other trees did not support noteworthy niches.
- Criterion F: All of the trees passed this criterion as each of them were recorded oversailing the grassland which dominated the Site.

3.3.15. Using the Statutory Metric's tree helper tool, the combined area coverage of these trees was calculated to be 0.0529 ha. Individual trees are a medium distinctiveness habitat type. Under Leicestershire and Rutland LNRS, mature trees are considered to have significance. Only T2 was considered to be mature and therefore holds high strategic significance. T3-T5 were not considered to be mature and therefore held low strategic significance. The trees contribute a total of 0.44 habitat units to the baseline value of the Site.

3.4. Habitats (Linear)

Hedgerows

3.4.1. Five hedgerows were recorded on Site. Photographs and descriptions of the hedgerows are provided in Table 7 below and their locations are shown in Appendix A.

Table 7 – Site hedgerows

Reference	Photograph	Approximate location	Brief description
H1		Western Site boundary	A native species-rich hedgerow with trees (h2b), spanning a length of approximately 22 m. Standard trees included cherry, common ash, cedar (*Cedrus*), silver birch and copper beech (*Fagus sylvatica*). Species recorded within the hedgerow included hawthorn, field maple, blackthorn, holly (*Ilex aquifolium*) and snowberry (*Symphoricarpos albus*). This hedgerow passed five of ten condition assessment criteria. The hedgerow was >1.5 m in height across its length (A1), had few gaps (B1 & B2), no evidence of damage caused by human activity (D2) and the trees appeared to be in a healthy condition (E2). However, the hedgerow was <1.5 m in width across its length (A2), did not support any undisturbed adjacent ground (C1 & C2), did support a high proportion of snow berry, a neophyte species (D1) and the standard trees were considered to be of a similar age class (E1) and as such, each of these criteria were failed. This hedgerow was therefore assessed as moderate condition. Hedgerows are listed within Leicestershire and Rutland LNRS, as such this hedgerow has high strategic significance and contributes 0.30 units to the baseline value of the Site.

H2		Western Site boundary	Leyland Cypress (*Cupressus × leylandii*) hedgerow supporting individual holly (*Ilex aquifolium*) and hawthorn shrubs. The hedgerow was approximately 10 m long and was managed to approximately 4 m in height and 2 m in width. This hedgerow did not support gaps and did not show evidence of damage or invasive species. As this hedgerow was classified as a non-native ornamental hedgerow, it is not subject to condition assessment (automatically assessed as poor condition). Hedgerows are listed within Leicestershire and Rutland LNRS, as such this hedgerow has high strategic significance and contributes 0.01 units to the baseline value of the Site.
H3		Northwestern Site boundary	As with H2 above in terms of height and width dimensions and general character; however, this hedgerow was shorter (approximately 7 m) and only supported a single structural species (Leyland cypress). As this hedgerow was classified as a non-native ornamental hedgerow, it is not subject to condition assessment (automatically assessed as poor condition). Hedgerows are listed within Leicestershire and Rutland LNRS, as such this hedgerow has high strategic significance and contributes 0.01 units to the baseline value of the Site.

H4		Southern Site boundary	A native, species-rich hedgerow with trees (h2a 11), spanning a length of approximately 20 m. Species were similar to H5 below, also supporting standard trees, which included; silver birch, sycamore (*Acer pseudoplatanus*) and crab apple (*Malus sylvestris*). This hedgerow passed seven of ten condition assessment criteria, including criteria A1 & A2, as the hedgerow was approximately 6 m tall by 2 m wide. The hedgerow had few gaps (B1 & B2) and no evidence invasive (D1) species or damage caused by human activity (D2). Although the hedgerow supported undisturbed perennial vegetation (C1) this vegetation was dominated by plants indicative of nutrient enrichment, such as common nettle, and as such criterion C2 was failed. The trees were in a healthy condition, thus passing condition criterion E2. This hedgerow was therefore assessed as good condition. Hedgerows are listed within Leicestershire and Rutland LNRS, as such this hedgerow has high strategic significance and contributes 0.41 units to the baseline value of the Site.
H5		Southern Site boundary	A native, species-rich hedgerow (h2a), spanning a length of approximately 52 m. Species recorded within the hedgerow included hawthorn, cherry, field maple, blackthorn and elder. This hedgerow passed seven of ten condition assessment criteria, including criteria A1 & A2, as the hedgerow was approximately 3 m tall by 2 m wide. The hedgerow had few gaps (B1 & B2) and no evidence invasive (D1) species or damage caused by human activity (D2). Although the hedgerow supported undisturbed perennial vegetation (C1) this vegetation was dominated by plants indicative of nutrient enrichment, such as common nettle, and as such criteria C2 was failed. This hedgerow was therefore assessed as good condition. Hedgerows are listed within Leicestershire and Rutland LNRS, as such this hedgerow has high strategic significance and contributes 0.72 units to the baseline value of the Site.

H6		Northern Site boundary	A native, species-rich hedgerow with trees (h2a 11), spanning a length of approximately 85 m. Standard trees included English oak (*Quercus robur*) and common ash (*Fraxinus excelsior*). Species recorded within the hedgerow included hawthorn, cherry, field maple (*Acer campestre*), blackthorn (*Prunus spinosa*) and elder (*Sambucus nigra*). This hedgerow passed nine of ten condition assessment criteria, including criteria A1 & A2, as the hedgerow was approximately 3 m tall by 2 m wide. The hedgerow had few gaps (B1 & B2), no evidence invasive (D1) species or damage caused by human activity (D2), a range of tree age classes (E1) and the trees appeared to be in a healthy condition (E2). Although the hedgerow supported undisturbed perennial vegetation (C1) this vegetation was dominated by plants indicative of nutrient enrichment, such as common nettle (*Urtica dioica*), and as such criteria C2 was failed. This hedgerow was therefore assessed as good condition. Hedgerows are listed within Leicestershire and Rutland Local Nature Recovery Strategy (LNRS), as such this hedgerow has high strategic significance and contributes 1.76 units to the baseline value of the Site.

Line of trees (33)

3.4.2. A single line of trees was recorded to the south-eastern corner of the Site. The line of trees likely originated as the eastern extent of Hedgerow 2 (described above); however, this former length of hedgerow had not recently been managed and had largely grown to a height of >5 m with a canopy base at least 2 m from the ground and as such it was classified as a line of trees. The line of trees supported field maple, hawthorn and weeping willow (*Salix babylonica*).

Figure 8 – Line of trees (33)

3.4.3. The line of trees was assessed to be in moderate condition, passing three of five condition assessment criteria:

- Criterion A, Pass: Most of the trees were native, dominated by field maple, with a single neophyte specimen (weeping willow).
- Criterion B, Pass: The tree canopy was continuous along the length of the hedgerow.
- Criterion C, Fail: No veteran features were recorded.
- Criterion D, Fail: The habitat within 6 m of the hedgerow included the artificial surfaces of the horse riding arena.
- Criterion E, Pass: All of the trees appeared to be in a healthy condition at the time of the survey.

3.4.4. Lines of trees are listed within Leicestershire and Rutland LNRS, as such this habitat has high strategic significance and contributes 0.09 units to the baseline value of the Site.

River habitat

3.4.5. A single unnamed watercourse was recorded passing through the eastern extent of the Site. The watercourse was narrow and appeared to have been artificially channelised into a linear section. The banks of the watercourse were dominated by bramble scrub, making a thorough assessment difficult at the time of the survey. However, where the water could be observed, it was recorded to have a strong south-westerly flow. A short length of the watercourse passes through a culvert, to facilitate land access into the neighbouring field. Desk study revealed that the watercourse extends well beyond the Site limits, connecting the feature to a series

of waterbodies in the north and likely eventually feeding into Thornton Reservoir, positioned to the south. Historical maps depict a watercourse in this approximate location as early as the 1920s, indicating that the watercourse has long been a feature of the landscape. Taking all these factors into account, it is considered appropriate to classify this watercourse as 'other river or stream'.

3.4.6. A river condition assessment was not commissioned at the time of the survey and as such, this feature has not been subject to a MoRPh survey to assess its condition. Consequently, no baseline condition for the watercourse has been established and as such this watercourse has not completely been included within the BIA. However, it has been included within the metric, but its details not filled out, to indicate its presence and the requirement for a MoRPh survey. Until such a time that the MoRPh survey is completed and the watercourse section for the BIA can be completed, this PEA, PRA and BIA report, as well as the associated document "2439_Statutory Metric DRAFT_Baseline Habitats" (EMEC Ecology, 2025a) are considered to be in draft format.

3.5. Species

Plants - Invasive, protected and notable species

3.5.1. A total of 155 records across 42 species of plant were returned during the desk study. Of the 42 species, a total of 27 were listed on the Leicestershire and Rutland Rare Plant Register (LRPR) and a total of 11 were Schedule 9 invasive non-native species.

3.5.2. All plant species identified on Site were common and widespread species commonly associated with the habitats in which they were found. No Schedule 9 invasive non-native species were identified on Site however, native field horsetail and non-native snowberry and cherry laurel were identified on Site, which can be problematic, growing quickly and out-competing other native species.

Birds

3.5.3. A total of 183 records of birds across 30 species were returned during the desk study. Of these 30 species, nine were Schedule 1 species and 17 were Species of Principle Importance (SPI). Of the Schedule 1 species identified during the desk study, most would not be considered likely to nest on Site due to the lack of suitable nesting habitat for the species or the species are winter visitors and rarely nest in the UK. The watercourse along the eastern boundary may provide suitability for kingfisher.

3.5.4. Several habitats including the stable structure, hedgerows, scattered trees and scrub on Site were suitable for nesting birds. Active swallow nests were identified within the stable structure, with at least four nest cups identified and an abundance of swallow activity flying in and out of the building. Swallows are a local BAP species in Leicester and Rutland. One of the nest cups is shown in Figure 9 below.

Figure 9 – Swallow nest cup present within the internals of the stable structure

Great crested newt and other amphibians

3.5.5. A total of 36 records of great crested newts (GCN) were returned during the desk study, with the closest of these identified 202 m east from Site in 2015, and the most recent in 2019, located 406 m north-west from the Site. In addition to the GCN records, a total of 16 records of smooth newts, 17 records of common toad and nine records of common frog were also identified during the desk study. The closest of these was that of a smooth newt, located 202 m east of the Site in 2015.

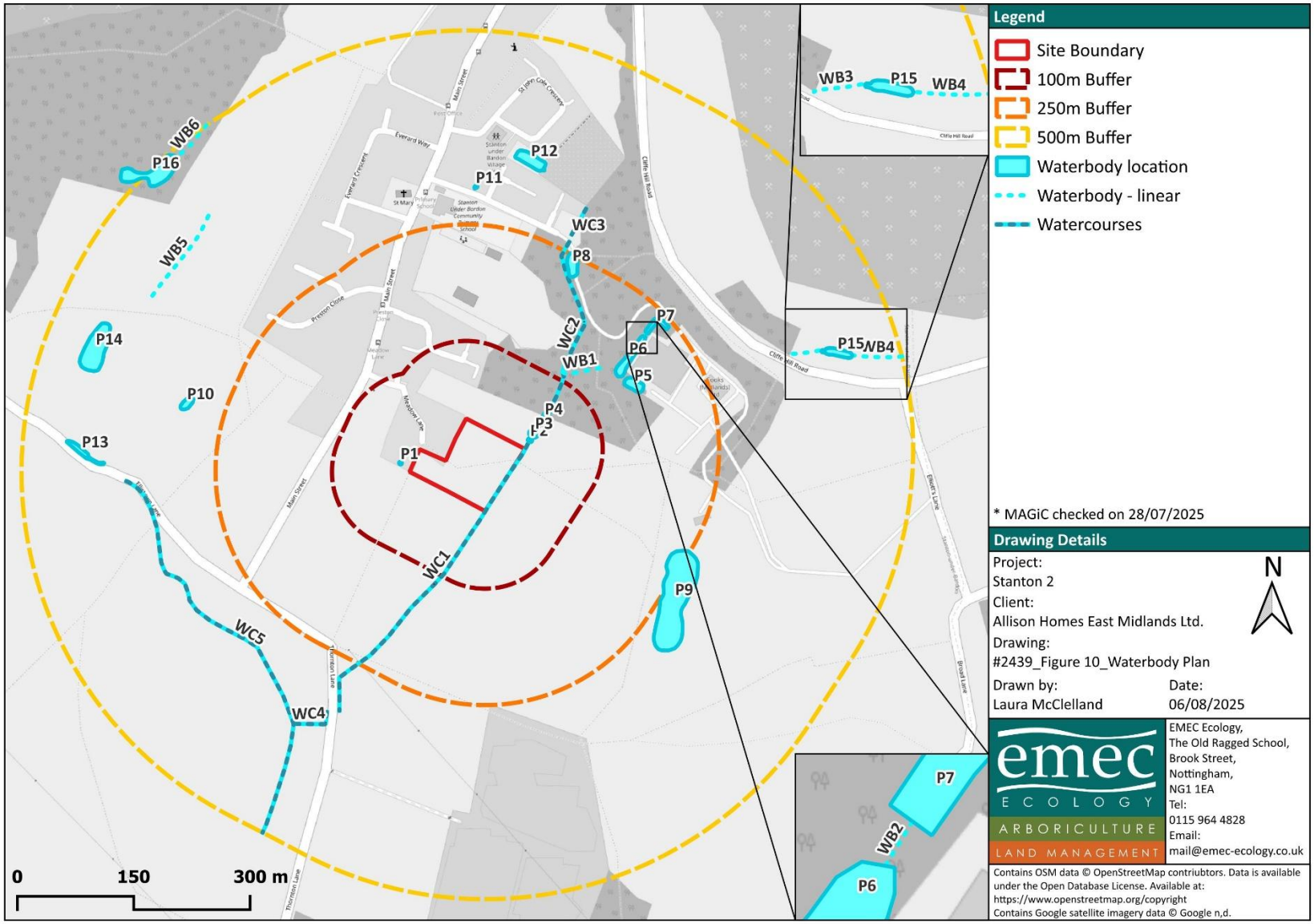
3.5.6. There were no waterbodies within the Site, but a review of satellite imagery and OS maps identified a further 27 waterbodies within 500 m of the Site, consisting of 16 ponds (referenced as P1-P16 in Figure 10), six linear waterbodies (referenced as WB1-WB6 in Figure 10), and five watercourses (referenced as WC1-WC5 in Figure 10). The locations of all identified waterbodies and watercourses within 500 m of the Site are shown in Figure 10.

3.5.7. The watercourses (WC1-WC5) display a flow direction arrow on MAGiC and are assumed to be flowing watercourses and thus would not be suitable for GCN, which do not inhabit flowing water. The remaining ponds (P1-P16) and linear waterbodies (WB1-WB6) within 500 m of the Site (hereby referred to as waterbodies) are considered to be connected to Site via suitable habitat which lies between the Site and the waterbodies, such as woodlands, hedgerows and grasslands. Some of the waterbodies lie beyond roads, but the roads do not constitute a barrier to the dispersal of GCN, and these waterbodies are still considered to be connected to Site. In addition, some waterbodies lie beyond the flowing watercourses WC1-WC3. However, P2-P4 lie between WC1 and WC2, which form a crossing point for GCN across the watercourses. In addition, GCN could traverse around these watercourses. As such, WC1-WC3 do not constitute a barrier to dispersal of GCN and any waterbodies which lie beyond these are considered to be connected to the Site.

3.5.8. The terrestrial habitats on Site are considered suitable for GCN, including the hedgerows, grassland and scrub. GCN can also utilise the bases of trees where root systems form spaces in which GCN can shelter. As such, the trees on Site are also considered to be suitable for GCN. The Site terrestrial habitats on Site therefore have suitability for resting, sheltering, foraging and potentially hibernating GCN.

3.5.9. A GCN Class Survey Licence Return was identified on MAGiC located approximately 201 m east of the Site, with GCN presence confirmed in five ponds.

Figure 10 – Waterbody location plan



Reptiles

3.5.10. A single record of a reptile was returned during the desk study, consisting of a single grass snake record located 237 m ESE from the Site, recorded in 2019.

3.5.11. The grassland, hedgerows and scrub habitats on Site were considered to be suitable for reptiles, in particular around the peripheries of the Site. In addition, the watercourse on the eastern boundary of the Site provides additional suitability for grass snake which are commonly associated with water, utilising watercourses and waterbodies for hunting and/or foraging. Bare areas and areas of hardstanding also provide suitable basking areas for reptiles.

Bats

3.5.12. A total of 268 records across 16 species of bat were returned during the desk study. Of the 16, some of these were not identified to species but instead were recorded by their genus (i.e.: a *Pipistrellus* species or a *Myotis* species), with one recorded only as "bat". Therefore, this does not mean that exactly 16 species were recorded within 2 km of the Site. The closest bat record to Site was that of a Leisler's bat, located 323 m south-south-west of the Site, recorded in 2016. No EPSL's for bats were identified within 2 km of the Site.

3.5.13. The Site was assessed as being of High suitability for foraging and commuting bats, in line with best practice guidelines (Collins, J. [ed.], 2023). This was largely due to boundary features on Site including the hedgerows, trees and scrub which create suitable commuting and foraging features. The hedgerows, trees and scrub on Site also provide connectivity to suitable habitat in the wider environment including woodlands, further hedgerows, ponds and waterbodies, watercourses and allotments. The watercourse along the eastern boundary is also suitable for foraging and commuting bats and provides connectivity to the wider environment.

3.5.14. A single building (B1, location shown in Appendix E), individual trees and trees within hedgerows on Site were present on Site at the time of survey and were therefore subject to a PRA (B1) and GLTA for their suitability to support roosting bats. This included both an inspection of the external surfaces from ground-level and an internal inspection of the building from ground level. Of the trees surveyed, T1 and T2 (location shown in Appendix E) were found to contain PRFs.

B1

3.5.15. B1 was an L-shaped stable block constructed from timber. It contained two pitched felted roofs attached via a flat-roofed corner section. The stable consisted of five stable compartments, four of which had open stable doors at the time of the survey, providing access into the interior. Gaps were present around the edges of the fifth door that was closed and gaps in internal partitioning provided access to the entirety of the internal structure of the building. Gaps between the wall top and the roof along the entire length of the western elevation and the inside of the L-shape also provided internal access. B1 (external view) is shown in Figure 11 below.

Figure 11 – B1 external

3.5.16. Internally, the building was open via open stable doors. The building was open to the rafters throughout the building in all stable spaces. Stable 5, which was the smallest stable on the eastern edge was the only stable that retained any darkness internally. Stables 2 and 3 and stables 4 and 5 were connected internally via gaps in the partitioning. External lighting provided interior and exterior lighting to all stables. No evidence of bats was identified during the survey. The building appeared to be heavily disturbed and due to the presence of both external and internal lighting, may be lit at night. An internal view of B1 is shown in Figure 12 below.

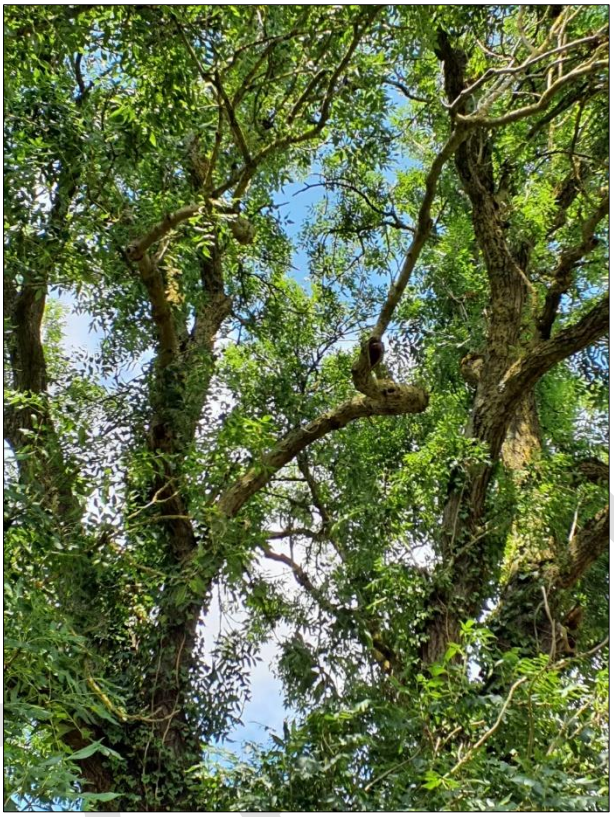
Figure 12 – B1 internal view

3.5.17. The end stable (stable 5) may hold suitability for rafter hanging bats if left undisturbed due to this section of the building being dark internally. However, it is disturbed and does contain internal lighting. Features included an open soffit with exposed rafter feet on the western elevation, open stable doors providing access to the internals, gaps between the wall top and the roof along the entirety of the western elevation, gaps in internal partitioning walls and gaps around the edges of the door to stable 5. As a result, B1 was assessed as having Negligible potential to support roosting bats, in line with best practice guidelines (Collins, J. [ed.], 2023). This was due to lack of internal roosting spaces, the high level of disturbance and presence of both internal and external lighting.

T1

3.5.18. T1 was an approximately 14 m high ash tree with a DBH of 120 cm (Figure 13 below). T1 contained a broken limb approximately 8 m from ground level on the eastern aspect of the tree. The feature was 10 cm in width and 10 cm in height.

Figure 13 – T1



3.5.19. T1 was assessed as FAR – Further Assessment Required, in line with best practice guidelines (Collins, J. [ed.], 2023). This was due to the feature only being visible from ground level at the time of the survey, and the feature will need further inspection in order to assess its suitability for bats.

T2

3.5.20. T2 was an approximately 8 m high silver birch tree with a DBH of 55 cm. T1 contained a bird box approximately 2.2 m from ground level on the northern aspect of the tree (Figure 14 below). Whilst the box was a bird box, bats have been known to utilise these features and the presence of bats within this feature cannot be ruled out. The bird box was assessed from ground level only.

Figure 14 – Bird box present on T2

3.5.21. T2 was assessed as FAR – Further Assessment Required, in line with best practice guidelines (Collins, J. [ed.], 2023). This was due to the feature only being visible from ground level at the time of the survey, and the feature will need further inspection in order to assess its suitability for bats.

Hibernation potential

3.5.22. The PRA of B1 included an assessment of its potential to support hibernation roosts. B1 was not considered to have greater than negligible potential to support hibernation roosts, due to the lack of a suitable loft space and the open structure of the building, meaning it would likely not maintain the stable temperature required by hibernating bats. The trees were also assessed for their potential to support hibernation roosts. As the features could only be assessed from ground level, hibernation potential could not be ruled out at the time of the survey, and the feature will need further inspection in order to assess its suitability for hibernating bats.

Badger

3.5.23. A total of 19 records of badger were returned within 2 km of the Site. The closest badger sett was present within 1 km of the Site. Accurate and detailed information regarding the location of badger setts identified during the desk study have not been provided, owing to the sensitive nature of such information.

3.5.24. No signs of badgers or badger setts were identified on Site during the survey however, the habitats on Site including the hedgerows, grassland and scrub, as well as the wider area around the Site are suitable for sett building, foraging and commuting badgers.

Hazel dormouse

3.5.25. No records of hazel dormouse were returned during the desk study within the Study Area in the last decade.

3.5.26. The scrub and hedgerows on Site may be suitable for dormice and has connectivity to woodlands in the wider environment. However, hazel dormice are only known to exist in Leicestershire at one reintroduction site located approximately 5.7 miles (9.17 km) from Site.

This reintroduction site is considered to be too far from the Site for hazel dormice to disperse. Therefore, hazel dormice are not considered likely to be present on Site and will not be discussed further within this report.

Terrestrial invertebrates

3.5.27. A total of 62 records across eight species of terrestrial invertebrate were returned during the desk study. Of those eight species, five were SPI, one was SPI and WCA5 and one was WCA5. The closest record was that of cinnabar moth, located 237 m east south-east in 2019. Of the SPI and WCA5 species returned during the desk study, the Site could be considered suitable for cinnabar, though these are an SPI listed for research purposes only and are a common species. The Site was not considered suitable for any other SPI or WCA5 species. Two records of an invasive non-native species were also returned, both of harlequin ladybird, with the closest located 1.57 km south of the Site in 2015, and the most recent in 2016, located 1.71 km east of the Site.

3.5.28. The Site is considered likely to support common and widespread terrestrial invertebrate species only and is not likely to support significance assemblages of protected or significant species. Therefore, terrestrial invertebrates will not be discussed further in this report.

Otter

3.5.29. There were two records of otter returned during the desk study in the last decade. The closest and most recent otter record was located 1.51 km west of the Site in 2019.

3.5.30. No signs of otters or otter holts were identified on Site during the survey however, a dedicated search for these sorts of features for otters were not included within this survey. Furthermore, the watercourse was obscured by dense vegetation, so features could not be seen from within the Site and the watercourse could not be assessed for its suitability for otter.

Water vole

3.5.31. One record of water vole was returned during the desk study in the last decade. The record was located 1.87 km south of the Site in 2025.

3.5.32. No signs of water voles or water vole burrows were identified on Site during the survey. However, a dedicated search for these sorts of features for water voles were not included within this survey. Furthermore, the watercourse was obscured by dense vegetation, so features could not be seen from within the Site and the watercourse could not be assessed for its suitability for water vole.

Aquatic invertebrates

3.5.33. A total of four records of white-clawed crayfish (WCC) were returned during the desk study within the Study Area in the last decade. The closest record of WCC was located 1.6 km east-north-east of the Site in 2016, with the most recent record in 2021, located 1.76 km east-north-east of the Site. There was also a record of signal crayfish returned during the desk study, also located 1.6km east-north-east of the Site in 2016. No further records of aquatic invertebrates were returned during the desk study.

3.5.34. No signs of WCC or their burrows were identified on Site during the survey however, a dedicated search for these sorts of features were not included within this survey. Furthermore, the watercourse was obscured by dense vegetation, so features could not be

seen from within the Site and the watercourse could not be assessed for its suitability for WCC.

Fish

3.5.35. No records of fish species were returned during the desk study in the last decade.

3.5.36. There were no waterbodies or watercourses on Site however, there was a watercourse (WC1) on the eastern boundary of the Site. The watercourse was obscured by dense vegetation, so could not be assessed for its suitability for fish species.

Additional SPI

3.5.37. A total of 13 records of hedgehog were returned during the desk study in the last decade. The closest record of hedgehog was located 125 m west-south-west of the Site in 2019, with the most recent record recorded in 2022, located 0.69 km south-east of the Site. One record of brown hare was returned during the desk study, located 1.08 km north-north-west of the Site in 2021. A total of 17 records of common toad were returned during the desk study, with the closest and most recent record located 336 m west-north-west in 2019.

3.5.38. The hedgerows, scrub and grassland on Site were suitable for hedgehogs and common toads and the grassland and hedgerows were suitable for brown hare, with further habitats present in the wider environment.

3 Assessment of Effects and Recommendations

4.1. Proposed scheme design

4.1.1. The likely effects of the proposed residential development on ecological receptors has been assessed with reference to the proposed development plan, shown in Appendix C. If the proposals change from those shown in Appendix C, then this report, and in particular the assessments below will require revision.

4.2. Designated sites, HPI and other notable habitats

Statutory and non-statutory designated sites

Ecological effects – Statutory

4.2.1. Despite the presence of statutory designated sites within the Study Area, it was considered that these lay too far afield for the localised works proposed within the Site to result in significant negative effects to the designated sites, either directly or indirectly. The nearest was located over 800 m from Site and was designated for geological conservation so is not likely to be impacted by indirect effects. The next closest statutory Site was located over 1 km away.

Ecological effects – Non-statutory

4.2.2. Semi-improved grassland (11230) Historic LWS was located adjacent to the Site boundary to the south-east and therefore the proposed works are likely to affect this non-statutory designated site via dust, vibration, noise and other such pollution/disturbance. It may also be impacted through increased footfall and pressure through increased number of residents in the area. There are a further four LWS's present within 100 m of the Site:

- Stanton under Bardon, Ash tree by 295 Main St LWS – This tree has a TPO – 70 m north-west
- Stanton Under Bardon, Ash-1 LWS – 89 m south-west
- Stanton Under Bardon, Ash-2 LWS – 92 m south-west
- Stanton under Bardon, Main St hedgerow LWS – 97 m north-west

4.2.3. There may be indirect impacts to LWS's within 100 m of the Site via pollution, with dust the main pollutant of concern. In addition, if any of the LWS's within 2 km of the Site lie downstream of the adjacent watercourse, pollutants such as dust and run-off entering the adjacent watercourse may impact these sites.

Recommendations – Statutory

4.2.4. As no effects to this receptor are anticipated, no recommendations for further survey, impact avoidance or mitigation are considered necessary.

Recommendations – Non-statutory

4.2.5. To prevent damage to the historical LWS located adjacent to Site via increased footfall, it is recommended that all footpaths leading out of the Site are directed away from the LWS. In

addition, signs should be used to encourage members of the public to exclusively use marked paths, to minimise trampling of the grassland.

4.2.6. In order to prevent indirect impacts to LWS's through pollution, pollution prevention measures must be following during works. These include those issued by the Department for Environment, Food & Rural Affairs and the Environment Agency (2016), CIRIA Guidance (Masters-Williams et al., 2001) and official pollution prevention guidance issued by the Environment Agency (PPG5, 2007 and PPG6, 2012) to avoid impacts from pollution events associated with the proposed works, such as dust, noise and fuel/chemical spills. The PPG5 document has been withdrawn however, the methodology within the PPG5 is the recommended best practice. These measures are likely to reduce impacts to nearby LWS's. In addition, specific guidance within the above documents in relation to working near water must also be followed to prevent pollution to the adjacent watercourse and any LWS's downstream of the watercourse. These include, but are not limited to:

- There will be no Site run-off of water or mud.
- All refuelling will be carried out on hardstanding.
- Spill kits should be kept with all machinery at all times.
- Any spillages (e.g. petrol/diesel) should be cleaned up immediately.
- Noise to be kept to a minimum, with no machinery left running when not in use.
- Dust and debris should be kept to a minimum, stored within containers and dampened with water to present airborne pollution where necessary.
- Temporary storage of plant or machinery should be on hardstanding off-site to avoid unnecessary degradation of any potential retained habitats and to prevent disturbance to protected species that may be present.
- No storage of materials, equipment and plant will take place under the 'drip-zone' of trees (i.e. under their canopy). Best practice will be followed (i.e. BS5837:2012 Trees in Relation to Construction) to ensure individual trees are not adversely affected.

HPI

Ecological effects

4.2.7. One parcel of good quality semi-improved grassland was located 740 m north-west of the Site. This HPI is considered too far from Site to be directly impacted by proposals.

Recommendations

4.2.8. As no effects to this receptor are anticipated, no recommendations for further survey, impact avoidance or mitigation are considered necessary.

4.3. Habitats

Ecological effects

4.3.1. A summary of the habitat anticipated to be lost on Site as a result of the current proposals, its ecological value and the outcome is provided below in Table 8 below. The proposal plan is not yet finalised so this may be subject to change.

Table 8 – Summary of effects to habitats on Site

Habitat type	Area (m^2) or length (m) present during survey	Ecological value	Outcome of current proposals
Modified grassland	7,264 m^2 (0.7264 ha)	Low – some suitability for amphibians, reptiles, badgers and other mammals and nesting birds.	Proposed for removal in entirety.
Bramble scrub	429 m^2 (0.0429 ha)	High – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates.	Proposed for removal in entirety.
Artificial unvegetated, unsealed surface	934 m^2 (0.0934 ha)	Low – some suitability for reptile basking.	Proposed for removal in entirety.
Developed land; sealed surface	126 m^2 (0.0126 ha)	Low – Limited to suitability of buildings for bat roosts and bird nests. The stable block contained swallow nest cups.	Proposed for removal in entirety.
Individual trees	570 m^2 (0.0529 ha)	High – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates.	Two proposed for removal.
Species-rich native hedgerow with trees	H1 – 22 m (0.022 km) H4 – 20 m (0.02 km) H6 - 85 m (0.085 km)	High – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates. Provides connectivity to the wider environment.	H1 – Retained in its entirety. H4 - 11 m retained. A further 9 m are physically retained but considered 'lost' within the metric in line with statutory guidance. This is due to the location of the hedgerow adjacent to private gardens and as such it is brought under residential curtilage. The condition and continued presence of H4 therefore cannot be guaranteed.

			H6 - 12 m retained, 73 m are physically retained but considered lost in the metric due to reasoning provided above for H4.
Species-rich native hedgerow	H5 - 52 m (0.052 km)	High – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates. Provides connectivity to the wider environment.	7m lost. A further 45 m are physically retained but considered lost in the metric due to reasoning provided above for H4.
Non-native and ornamental hedgerow	H2 – 10 m (0.01 km) H3 – 7 m (0.007 km)	Moderate – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates. Provides connectivity to the wider environment. Though is limited in species diversity due to non-native ornamental status.	H2 – 7 m retained, with the rest proposed for removal. H3 – retained in full.
Line of trees	37 m (0.037 km)	High – valuable for a range of species groups including nesting and foraging birds, herptiles (reptiles and amphibians), mammals and invertebrates. Provides connectivity to the wider environment.	33 m retained, with the rest proposed for removal.

Recommendations

4.3.2. Temporary storage of plant or machinery should be on hardstanding off-site to avoid unnecessary degradation of any potential retained habitats and to prevent disturbance to protected species that may be present. No storage of materials, equipment and plant will take place under the 'drip-zone' of trees (i.e. under their canopy). Best practice will be followed (i.e. BS5837:2012 Trees in Relation to Construction) to ensure individual trees are not adversely affected. It should be noted that arboricultural assessments are beyond the scope of this report and separate arboricultural surveys may be required.

4.3.3. Some length of hedgerows are proposed for removal on Site where it is necessary. It is recommended instead that all hedgerows on Site are retained as they are valuable habitats for a range of species. Other hedgerows are proposed to be retained but will subsequently form garden boundaries, thus their continued presence and condition cannot be guaranteed. It is recommended that the garden boundaries are adjusted so that the hedgerows fall outside of private residential curtilage with a 1-2 m buffer, so the hedgerow and its condition can be retained in full.

4.3.4. In addition, it is recommended that further hedgerows be planted at garden boundaries instead of the proposed fences. Whilst these hedgerows won't count towards BNG due to being within private residential curtilage, they will be beneficial for wildlife. Species used will be locally sourced, native and appropriate to the locality. Native berry and fruit producing species would further benefit several species groups. Species that may be used include blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), field rose (*Rosa arvensis*), dog

rose (*Rosa canina*), guelder rose (*Viburnum opulus*), spindle (*Euonymus europaeus*), elder (*Sambucus nigra*), rowan (*Sorbus aucuparia*), wild cherry (*Prunus avium*) and hazel (*Corylus avellana*).

4.3.5. The scrub around the peripheries of the Site is also proposed for removal. It is recommended that these areas of habitat be retained as they are valuable for a range of species groups. These areas could be supplementary planted to enhance the areas to mixed scrub.

4.4. Biodiversity Net Gain

Ecological effects

4.4.1. Current proposals (Appendix C) are not yet finalised, so exact areas and lengths of habitats lost are unconfirmed. The following details the distinctiveness of each habitat that may be lost under proposals:

- Modified grassland: Within the Statutory DEFRA Metric, this habitat is classified as 'low distinctiveness', requiring the same distinctiveness or better habitat to mitigate its loss.
- Bramble scrub: Within the Statutory DEFRA Metric, this habitat is classified 'medium distinctiveness', requiring the same broad habitat type or a higher distinctiveness habitat to mitigate its loss.
- Artificial unvegetated, unsealed surface: Within the Statutory DEFRA Metric, this habitat is classified 'very low distinctiveness', requiring no compensation.
- Developed land; sealed surface: Within the Statutory DEFRA Metric, this habitat is classified 'very low distinctiveness', requiring no compensation.
- Individual trees: Within the Statutory DEFRA Metric, this habitat is classified 'medium distinctiveness', requiring the same broad habitat type or a higher distinctiveness habitat to mitigate its loss.
- H1 – Species-rich native hedgerow with trees: Within the Statutory DEFRA Metric, this habitat is classified 'high distinctiveness', which would require the same habitat (like for like) or better to mitigate its loss.
- H2 and H3 – Non-native and ornamental hedgerow: Within the Statutory DEFRA Metric, this habitat is classified 'very low distinctiveness', requiring the same distinctiveness band or better to mitigate its loss.
- H4 – Species-rich native hedgerow with trees: Within the Statutory DEFRA Metric, this habitat is classified 'high distinctiveness', requiring the same habitat (like for like) or better to mitigate its loss.
- H5 - Species-rich native hedgerow: Within the Statutory DEFRA Metric, this habitat is classified 'medium distinctiveness', requiring the same distinctiveness band or better to mitigate its loss.
- H6 – Species-rich native hedgerow with trees: Within the Statutory DEFRA Metric, this habitat is classified 'high distinctiveness', requiring the same habitat (like for like) or better to mitigate its loss.

- Line of trees: Within the Statutory DEFRA Metric, this habitat is classified 'low distinctiveness', requiring the same distinctiveness band or better to mitigate its loss.

4.4.2. Under the current proposals, a net loss of both habitat units and hedgerow units are anticipated. Impacts to watercourse units are also anticipated however, these have not been included in this iteration of the report and metric as a MoRPh survey has not yet been completed. As such, this PEA, PRA and BIA report, as well as the associated documents "2439_Statutory Metric DRAFT_Baseline Habitats" (EMEC Ecology, 2025a) are considered to be in draft format until the completion of the MoRPh survey, and the watercourse units have been assessed within the Statutory Metric. A placeholder watercourse showing the length of watercourse adjacent to Site has been included within the Metric to indicate the requirement for a MoRPh and associated assessments.

4.4.3. It should be noted that for habitats such as hedgerows that may fall within or adjacent to proposed private gardens, these would be considered 'lost' within the metric in line with statutory guidance. This is due to the incorporation of these habitats within residential curtilage and as such the condition and continued presence of these habitats therefore cannot be guaranteed.

4.4.4. Further details regarding the existing habitats, including the information inputted to achieve the calculation are provided within the associated DRAFT DEFRA Statutory Metric document for the Site for the baseline habitats (EMEC Ecology, 2025a) and the condition assessment sheets for the Site (EMEC Ecology, 2025c).

Recommendations

4.4.5. If the recommendations below are implemented, it is anticipated that the loss of habitat units and hedgerow units on Site can be reduced, however, to achieve the required 10% net gain, adjustments to the proposals and/or off-Site compensation may be required. Watercourse units have not been assessed, though there are expected to be impacts to watercourse units. A MoRPh survey will be required to assess watercourse unit impacts and finalise the BIA.

4.4.6. The below recommendations are made to reduce the loss of units on Site:

- **Enhancement of bramble scrub to mixed scrub**: Instead of the removal of bramble scrub on Site, it is recommended that these areas are retained and enhanced to mixed scrub in moderate condition. In order to enhance these areas to mixed scrub, they should be supplementary planted with at least three additional native woody species. These species could include native berry or fruit producing species to benefit species groups on Site. A condition assessment has been carried out to determine the likely condition of this habitat. It is considered likely that this habitat can reach moderate condition if the following conditions are met: at least 80% of scrub is native; there are at least three woody species present, with no one species comprising more than 75% of the total cover; there is a good age range - all of the following are present: seedlings, saplings, young shrubs and mature shrubs - with the habitat rotationally managed correctly in order to maintain this varied age structure into the future; there is an absence of invasive non-native species and species indicative of sub-optimal conditions make up less than 5% of ground cover. Additionally, if the proposed other neutral grassland recommended below is implemented, then the scrub will have a well-developed edge, thus passing criterion D. If the above conditions are met, the habitat will pass at least 4 criteria, resulting in a moderate condition score.

- **Creation of modified grassland**: Some areas of modified grassland proposed within the development plan could be planted and managed as modified grassland in moderate condition. It is considered likely that the habitat will reach moderate condition if the following conditions are met: a flowering lawn mix is used which contains 6-8 species per metre squared and can withstand close, regular mowing (Naturescapes N14 Flowering Lawn Mixture is recommended) (criterion A); scrub accounts for less than 20% of the total grassland area (adjacent areas of scrub are managed to prevent encroachment) (criterion C); bracken covers less than 20% of total ground cover (criterion F) and there is an absence of invasive non-native species (criterion G). If the above conditions are met, the habitats will pass 4 criteria (including criteria 1, essential for achieving moderate condition), resulting in a condition score of moderate condition.

- **Creation of a species-rich native hedgerow**: This hedgerow is recommended on the western-most northern boundary edge, adjacent to one of the areas of created other neutral grassland. A condition assessment has been carried out to determine likely condition of this hedgerow. Good condition could be reached if the following conditions are met: the hedgerow is allowed to reach and is maintained at greater than 1.5 m in height and width; gaps make up less than 10% of the total length of the hedgerow and there are no gaps wider than 5% (any gaps that may form during the growing period of the hedgerow should be restocked); there is a 1 m width of undisturbed ground present with perennial herbaceous vegetation for 90% of the length of the hedgerow on at least one side (considered to pass if the areas of other neutral grassland are implemented); the hedgerow and undisturbed ground are free on invasive non-native and recently introduced species; and the hedgerow and undisturbed ground are free of damaged caused by human activities (could include pollution, piles of manure or rubble, or inappropriate management practices), and they should be managed sensitively for wildlife.

- H4, H5 and H6 have lengths that are physically retained under the current proposals however, these would be brought under private residential curtilage, forming garden boundaries, and as such, are considered to be lost under the metric. It is recommended that the garden boundaries are adjusted and pushed back further into the Site, so that the hedgerows fall outside of private residential curtilage post development, with a 1-2 m buffer (thus still passing criterion C1), so that the hedgerow and its condition can be retained in full.

4.5. Species

4.5.1. The potential ecological effects of the proposals upon protected species in the absence of mitigation or impact avoidance measures are discussed below, in addition to any recommendations for further survey, mitigation or compensation. Impacts to the below species as a result of the proposals may constitute an offence under legislation provided in Appendix G.

4.5.2. The proposals (current plan in Appendix C) are subject to change and as such, these assessments and recommendations should be reviewed once the final plans are known.

<u>Plants - Invasive, protected and notable species</u>

Ecological effects

4.5.3. Plant species on Site are common and widespread within the habitats in which they were found on Site. Non-native snowberry and cherry laurel, and native field horsetail are present on Site and whilst they are not Schedule 9, these species can be dominant and outcompete other plants. Therefore, the works do have the potential to spread these species to the wider environment.

Recommendations

4.5.4. Care should be taken to ensure when these plants are removed from Site, they are removed and exposed of in such a way that prevents their spread to further areas of the Site and off Site.

Birds

Ecological effects

4.5.5. The grassland, scrub and trees on Site are suitable for a range of nesting birds such that works taking place within the bird nesting season are likely to cause disturbance or destruction of bird nests as well as disturbance, injury or death to birds and/or their young/eggs.

4.5.6. In addition, there were at least four active swallow nests identified within the stable building. Swallows are loyal to their nesting sites and will utilise the same nests/nest sites year after year. Therefore, if demolished within the bird nesting season, the works are highly likely to cause destruction of swallow nest cups, as well as disturbance, injury or death of swallows and their young/eggs. This also applies to other bird species which readily nest within buildings. Additionally, regardless of the time of year that the works are carried out, because swallows are loyal to their nesting sites year after year, the loss of this many swallow nest cups is likely to impact future breeding success of the swallows on Site as a result of the proposals, due to losing establishing nest sites.

Recommendations

4.5.7. Vegetation clearance, including removal/reduction/pruning of scrub, grassland and trees, as well as the demolition of the stable block, must be undertaken between September and February inclusive, outside of the main bird nesting period. Should this not be possible, then a nesting bird check should be undertaken immediately (within 24 hours) prior to the clearance by a suitably experienced Ecologist. With regards to vegetated habitats on Site, in the event that an active bird nest is identified; either by the Ecologist during the check or at any point during the works, then works should immediately cease and, if not present, the Ecologist contacted. The Ecologist will advise on a suitable buffer to be established around the nest, within which no works must take place until it is confirmed by the Ecologist that all young have fledged, and the nest is no longer active. With regards to the stable block, in the event that any of the swallow nest cups are considered to be active or active nests of other building nesting birds are identified; either by the Ecologist during the check or at any point during the works, then works should immediately cease and, if not present, the Ecologist contacted. The demolition of the stable block must be delayed until it is confirmed by the Ecologist that all young have fledged, and the nest is no longer active. Additionally, the Ecologist will advise on a suitable buffer to be established around the active nests, within which no works must take place until it is confirmed by the Ecologist that all young have fledged, and the nest is no longer active.

4.5.8. In order to mitigate the loss of known swallow nest sites and minimise negative impacts on the future breeding success of the swallows on Site, mitigation for the loss of nesting sites for swallow must be provided. This must be in the form of a specialised structure, consisting of a four-sided wooden gazebo-style structure with an open plan roof containing wooden beams. Three sides of the structure should be enclosed to provide shelter, with one side remaining open to provide access to the swallows. Swallows prefer nesting sites that are sheltered so having three out of the four sides closed is important to increase the chance of uptake by the swallows. The open side of the structure should ideally face good foraging habitat such as open grassland, waterbodies, hedgerows etc. Two artificial swallow nest cups should be installed within this structure to further encourage the swallows to use the structure. The structure should be located as close to the original location of the swallow nests as possible.

4.5.9. The structure should look similar to Figure 15 (found at: www.waltons.co.uk) but must have three sides enclosed. This image does not include the three enclosed sides and is intended only as an example of the general type of structure required.

Figure 15 – An example image of the type of gazebo structure recommended for swallow mitigation.

4.5.10. The British Standard BS 42021:2022 came into effect on 31st March 2022 and sets out requirements for the selection and installation of integral nest boxes in new developments. This includes the incorporation of at least one integrated bird nest box for swift (*Apus apus*), starling (*Sternus vulgaris*), great tit (*Parus major*), blue tit (*Cyanistes caeruleus*) or house sparrow (*Passer domesticus*) within each dwelling.

Great crested newt

Ecological effects

4.5.11. In line with the Rapid Risk Assessment (RRA) tool within the Method Statement for great crested newt Natural England licences, even assuming that mitigation practices would result in no individual great crested newts being affected with regard to disturbance, disruption of dispersal routes, capture in excavations or killing or injuring, the proposals would result in a highly likely offence due to the removal of terrestrial habitat within 100 m of a potential GCN breeding pond (Figure 16 below).

Figure 16 – Extract from RRA tool (Natural England Form WML-A14-2, Version April 2020)

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)	0.5 - 1 ha lost or damaged	0.7
Land 100-250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.01
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.7
Rapid risk assessment result:	RED: OFFENCE HIGHLY LIKELY	

Recommendations

4.5.12. The above RRA result assumes no effect to individual GCN, so even with a Precautionary Method of Working to minimise risk to individuals, an offence is highly likely thus a PMW is not sufficient for this Site and further surveys will be required.

4.5.13. All ponds and waterbodies within 500 m of the Site that are not considered to lie beyond significant barriers to dispersal will be subject to environmental DNA (eDNA) surveys for GCN to determine the presence or likely absence of this species. This type of survey involves the collection of water samples from the relevant waterbody, before sending the samples to a laboratory for analysis. Surveys for GCN eDNA can only be undertaken between 15th April and 30th June.

4.5.14. Should the waterbodies test positive for GCN eDNA, then a suite of 'traditional' surveys may be required to determine population size class, as this is not possible from eDNA alone. This includes six surveys by suitably licensed ecologists using a range of techniques, such as searching vegetation for newt eggs, searching for newts within the waterbody using torchlight and trapping the waterbody for newts. Full traditional surveys for GCN can only be undertaken between mid-March and mid-June, with at least two of these visits undertaken between mid-April to mid-May.

4.5.15. Leicestershire operates a District Level Licensing (DLL) Scheme and the Site falls under the "Amber GCN Risk Zone" within the county. Therefore, a DLL Scheme may be explored as an alternative option to the traditional surveys described above. The initial eDNA survey is still recommended using this approach, to confirm presence and avoid pursuing DLL in the absence of GCN. DLL usually requires less mitigation effort compared to the traditional European Protected Species (EPS) licensing. To be able to apply for a DLL, a fee must be paid depending on the number of ponds and area of terrestrial habitat on Site affected.

Reptiles

Ecological effects

4.5.16. The grassland, scrub, hedgerows and trees around the peripheries of the Site are suitable for foraging, refuge seeking and hibernating reptiles. The watercourse to the east of the Site is suitable for grass snake in particular, as this species often favour aquatic habitats. Therefore, without mitigation in place, works have the potential to disturb, injure or kill reptiles on Site. In addition, suitable habitat for reptiles will be lost from Site.

Recommendations

4.5.17. As the Site is relatively small, the adjacent watercourse is being retained, and the Site is well connected to suitable habitat in the wider landscape, the loss of habitat on Site is not considered to have significant negative impacts to reptiles.

4.5.18. Reptile surveys are considered disproportionate on this Site due to its small size. It is considered that minimising the risk of harm to individuals will be sufficient. To reduce the risk of harm to individuals of widespread reptile species that may pass through the Site during the works, Precautionary Methods of Working (PMW) must be implemented. These must include:

- The works should take place between April and September inclusive, when reptiles are likely to be active, and to enable individuals to be able to move out of harm's way if present. As works have been recommended to take place between September and February inclusive to mitigate impacts to nesting birds, it is recommended that September is the most suitable month in which to carry out works.
- Before works commence, all contractors will be made aware of the potential for reptiles to be encountered during works.
- The working footprint will be kept to a minimum.
- If reptiles are encountered at any time during works, then all works must cease immediately until further advice is provided by a suitably experienced ecologist.
- Any brash/log piles will be dismantled methodically and by hand, taken out of the working area and used to create habitat piles in an undisturbed area of the Site.
- Grassland, scrub and hedgerows within any working areas, where required, will be cut or removed using handheld machinery (i.e. strimmer, brush cutter, chainsaw) to a height of no less than 150 mm.
- The working area must be left for a minimum of two days to allow any reptiles that may be present to move out of the immediate area. A second cut using hand-held machinery (such as a strimmer or brush cutter) will be then carried out, to a height of 50 mm.
- Any holes or trial pits associated with works will be covered overnight to prevent reptiles from becoming trapped within them. If holes must be left open, a means of escape, such as plank will be provided.

<u>Bats</u>

Ecological effects

4.5.19. The building (B1) on Site was assessed as having negligible potential to support roosting bats. Therefore, no impacts to bats are envisioned as a result of the demolition of this building. However, further surveys are required of T1 and T2 in order to assess their potential to support roosting bats. Therefore, there is potential for the works to result in the damage or destruction of bat roosts and the killing or injury of bats, through the removal of T2 and pruning works to T1.

4.5.20. The Site was assessed as having high suitability for foraging and commuting bats and as the proposals include the removal of hedgerow, scrub and trees, there is potential for the works

to result in the reduction of foraging habitat for bats/severance of bat foraging and/or commuting routes.

Recommendations – Roosting bats

4.5.21. No further surveys are required for B1, in line with best practice guidelines (Collins, J. [ed.], 2023) for buildings assessed as negligible. However, as a small chance remains that individual bats may utilise the building on an opportunistic basis, and as the building contains no hibernation potential, then demolition of the building is required to take place in the winter months (December-February). If the demolition must take place outside of December to February, then a pre-commencement survey is required prior to demolition by a suitably licensed and qualified ecologist. In the unlikely event that the pre-commencement survey identifies the presence of bats within the building, then works on Site must cease immediately, with the Ecologist advising on next steps, dependent on the number of bats and type of roost present.

4.5.22. T1 and T2 will be subject to an aerial inspection survey in line with best practice guidelines (Collins, J. [ed.], 2023) for trees assessed as FAR, to assess their potential to support roosting bats. Further surveys may be required following these surveys. If the aerial inspection deems that the trees contain no potential to support roosting bats or are assessed as PRF-I, then no further surveys will be required. If the aerial inspection deems the trees to be PRF-M, then two more aerial inspections will be required. If the trees are found to contain a sensitive roost (e.g. a maternity roost), then emergence surveys must be carried out instead of further aerial inspections, as these are less invasive survey methods. If the trees are found to be not suitable for aerial inspection, then three emergence surveys will be required in replacement of the aerial inspections.

4.5.23. If bat roosts are identified within either of the trees during the presence/likely absence surveys, then an EPSL issued by Natural England may be required to enable the works to take place lawfully. Licences are usually only issued following the granting of full planning permission and discharge of all relevant planning conditions. EPSLs require survey data from the current or most recent survey season. Natural England generally suggest at least 30 working days for their assessment of a licence application; however, this can be longer during busy periods.

Recommendations – Commuting and foraging bats

4.5.24. In line with best practice guidelines (Collins, J. [ed.], 2023) for sites with High suitability habitat for foraging and commuting bats, one survey visit per season (spring – April/May, summer – June/July/August, autumn – September/October) is required. This should be in combination with the deployment of static bat detectors at suitable locations across the Site, set to collect data on five consecutive nights per month (April-October) in appropriate weather conditions for bats. Further surveys may be required if these visits or the results of the static bat detector surveys reveal activity of interest that requires more observations on Site.

4.5.25. Lighting on Site prior to, during, and on completion of construction and into the operational phase, should be kept to a minimum to reduce the likelihood of disturbance to crepuscular and nocturnal fauna within and adjacent to the Site. Any lighting proposed must be designed sensitively to wildlife, following the guidance set out in Bats and Artificial Lighting in the UK (Bat Conservation Trust and Institute of Lighting Professionals, 2018) and should include (but is not limited to):

- No lighting of or lighting directed at the on-Site or off-Site buildings, trees or hedgerows.
- No night works during the construction phase.
- Any external security lighting should be set on motion-sensors and short (<1 minute) timers.
- LED luminaires should be used, with a warm white spectrum (<2700 Kelvin) to reduce the blue light component and with wavelengths higher than 550 nm.
- Column heights should be carefully considered to minimise light spill and only luminaires with an upward light ratio of 0% and with good optical control should be used.

Badger

Ecological effects

4.5.26. No signs of badgers or badger setts were identified on Site however; there may be setts within 30m of the Site. Badgers are also transient species and badger setts can be extended or new setts created in short spaces of time. As such, works have the potential to damage or destroy a badger sett. In addition, there a chance that badgers may be injured, killed or entrapped during construction.

Recommendations

4.5.27. Further survey for badger is required of the Site and 30 m from the Site boundary prior to the commencement of works, to determine the location of any badger setts that may be present. The survey will ideally be carried out during winter/spring before herbaceous vegetation has grown tall and may potentially obscure evidence of badger activity.

4.5.28. If any badger setts are identified within the Site or within 30 m of the Site, then further surveys of the identified mammal hole(s) will be required to determine whether they comprise an entrance hole to an active badger sett. This will involve monitoring the hole(s) for signs of badger activity using trail camera(s), and searches of the surrounding area for signs of badger activity, such as dung pits, latrines, feeding remains, footprints, scratch marks and shed guard hairs. Additional methods may also be used, such as sticks with tape placed at the entrance to the hole to catch hairs and sand to capture impressions of footprints. Monitoring a potential badger sett should ideally be undertaken during spring or summer, as badgers are less active above ground during the winter.

4.5.29. If the survey confirms that an active badger sett is present on Site (or within 30 m of proposed works), a licence from Natural England may be required to close the sett. The licensed closure of badger setts can only be undertaken between July to November inclusive.

4.5.30. In addition, the following Precautionary Methods of Working (PMW) below are required to avoid risk of entrapment or injury of badgers that may pass through the Site during the construction phase:

- Contractors will be made aware of the potential presence of badger on Site.

- No open trenches, pits, holes or any other excavation which has the capacity to entrap badgers or other wildlife will be left open overnight. Excavations will be backfilled or completely covered at the end of each day.

- If it is not possible to backfill or cover any excavations and they must be left open, a means of escape must be provided to allow any animals which may fall in to escape on their own. This can be achieved by placing a suitably sized plank of wood in the hole, ensuring that the top of the plank extends out of the hole, which will allow animals to climb out.

- If a mammal hole is identified within 30 m of the works, works must cease, and the hole must be inspected by a suitably experienced ecologist to assess the likelihood of impacts to badger prior to works continuing.

- Cutting tools will not be left in on Site where they might injure animals.

- If badgers are encountered during works, all works must cease immediately until the badgers have left the area of their own accord.

Otter

Ecological effects

4.5.31. There are two watercourses within 100 m of the Site, WC1, which lies adjacent to the Site's eastern boundary and WC2, which lies to the north of WC1 and is likely connected to WC1 via P2-P4. As such, if otters are present within these watercourses, the works have the potential to disturb otters, as well as the potential to damage or destroy a holt. In addition, indirect effects are likely to occur without mitigation in the form of pollution of the watercourses through dust/run off.

Recommendations

4.5.32. Further survey of the watercourse adjacent to the Site's eastern boundary (WC1) and the watercourse to the north of this (WC2) for otter including a 200 m buffer is required. This would include a systematic search for signs of otter presence, including spraints, footprints, feeding remains, runs, slides, holts and other resting places. In the absence of guidance specific to England and for the purpose of development, the guidance published by NatureScot (Protected Species Advice for Developers - Otter) and Monitoring the Otter (Chanin, 2003) will be used. The information provided by these resources is considered recognised good practice and the most up to date guidance currently available. If definitive or potential signs of otter are identified during the survey, then additional survey effort, including the deployment of trail cameras may be required.

Water vole

Ecological effects

4.5.33. WC1 lies adjacent to the Site's eastern boundary. As WC1 was not accessed during the survey and thus not assessed for its suitability for water voles, their presence cannot be ruled out in the absence of a further survey. As such, if water voles are present within WC1, the works have the potential to disturb water voles, as well as the potential to damage or destroy their burrows. In addition, indirect effects are likely to occur without mitigation in the form of pollution of the watercourses through dust/run off.

Recommendations

4.5.34. It is required that WC1, adjacent to the eastern boundary of the Site, be assessed for its suitability for water vole. If the watercourse is considered to be suitable for the species, or unable to be scoped out as unsuitable e.g. due to access or seasonal limitations, then further survey of WC1 for water vole will be required. This will include a 200 m buffer, to determine presence or likely absence of this species on/adjacent to the Site. In accordance with best practice guidance (Dean *et al*., 2016), two surveys would be undertaken: one 'early season' survey (mid-April – June, inclusive) and a second 'late season' survey (July – September, inclusive). If presence of water vole is confirmed during the first visit, a second visit may not be required. Surveys for otter and water vole can be undertaken concurrently if required.

Aquatic invertebrates

Ecological effects

4.5.35. Works are proposed in close proximity to WC1 on the eastern boundary of the Site. This watercourse was not assessed for its suitability to support WCC and therefore works have the potential to disturb, injure or kill WCC as well as damaging or destroying their burrows.

4.5.36. Additionally, whilst WC1 is not within the proposed works area, there may be impacts through dust and pollution from on Site works. Therefore, the works have the potential to impact upon aquatic invertebrates, if present in the watercourse

Recommendations

4.5.37. It is required that WC1, adjacent to the eastern boundary of the Site, be assessed for its suitability for white-clawed crayfish. If the watercourse is considered to be suitable for the species, or unable to be scoped out as unsuitable e.g. due to access or seasonal limitations, then further surveys of WC1 for WCC will be required. Surveys for WCC can be undertaken from July to September, inclusive, and involve assessing the suitability of habitat from within the watercourse and a manual search of potential refuges. A modification of the standard methodology (Peay and Hirst 2003) would be used. If WC1 is not considered to be suitable for WCC during the initial suitability survey, then further surveys for WCC will not be required.

4.5.38. Additionally, in order to prevent pollution of the waterbody and to prevent impacts to other aquatic invertebrates, if present, the following mitigation must be enacted:

- To ensure that nearby waterbodies are not negatively impacted through pollution run-off and other disturbance, guidance for working near water will be followed at all times (Environment Alliance, 2018);
- There will be no run-off of mud, or other pollutants associated with the works, depositories will be removed and taken off-Site and disposed of appropriately;
- All machinery will adhere to strict pollution prevention measures/all refuelling will be carried out away from the waterbody to the north of the Site (10 m minimum) and on hardstanding, spill kits should be kept with machinery at all times; and,
- Any spillages (e.g. petrol/diesel) will be cleaned up immediately.

Fish

Ecological effects

4.5.39. Works are proposed in close proximity to WC1 on the eastern boundary of the Site. Whilst this waterbody is not within the proposed works area, there may be impacts through dust and pollution from on Site works. Therefore, the works have the potential to impact upon fish species, if present in the watercourse.

Recommendations

4.5.40. In order to prevent pollution of the waterbody to prevent impacts to aquatic invertebrates and fish species, if present, the following pollution prevention mitigation measures outlined in section 4.5.35 must be enacted.

Additional SPI

Ecological effects

4.5.41. The Site contained habitats suitable for hedgehogs, brown hare and common toad. As such, the works have the potential to disturb, injure, kill or entrap individuals of these species. The habitats suitable for these species will also be lost as a result of proposals.

Recommendations

4.5.42. Currently, habitats suitable for these species will be lost under proposals. It is recommended that hedgerows and scrub be retained to maintain habitat on Site, as well as maintaining connectivity to the wider landscape for these species.

4.5.43. Contractors will be made aware of the likely potential presence of the above species, including European hedgehog, brown hare and common toad on Site. Vegetation clearance, reduction and/or pruning will be undertaken with care to avoid disturbance to sheltering/hibernating animals, working from the west of the Site to the east, thus encouraging mobile species into further suitable habitats off Site. Any debris from works will not be left on Site and any holes, trenches or trial pits associated with works will be covered overnight or fitted with egress boards to prevent animals becoming trapped. Any hedgehogs or common toads found within the works area during construction will be carefully relocated to a sheltered location with plenty of vegetation cover, in an area off Site or within the Site away from the works and that will remain undisturbed. If any brown hare are found within the works area during construction, then works should cease and the animal be allowed to move off Site of its own accord. Once the brown hare is off-Site, works can recommence.

4 Enhancement

5.1. Enhancement proposals

5.1.1. Additional measures that could be incorporated within the proposed design to enhance the biodiversity value of the Site are provided below. These recommendations are separate to the calculations for Biodiversity Net Gain (BNG), as the Statutory DEFRA Metric does not take such enhancements into account.

5.1.2. Recommendations for specific enhancements for bats will be provided after the recommended bat surveys have been completed and will be included within the resulting bat report.

5.1.3. Bird boxes could be implemented across the Site on both new buildings and on retained trees. All installed bird boxes should also be sited away from windows, doors or ledges which would be large enough for a domestic cat to sit on, in order to avoid predation from domesticated cats and other such predators. They should also be cleaned out once a year to prevent the spread of diseases and build-up of detritus. Cleaning should take place in winter, to prevent the chance of disturbance to nesting birds. This will further increase nesting bird provision on Site post-development. Boxes could include:

- Vivara Pro Seville 28 mm WoodStone Nest Boxes (or similar) are recommended to provide nesting spaces on Site for birds such as blue tits, tree sparrows (*Passer montanus*), great tits and coal tits (*Periparus ater*) and pied flycatchers (*Ficedula hypoleuca*). These boxes should be placed at 1.5-3 m above ground, or higher if there is a high domestic cat population;

- Vivara Pro Seville 32 mm WoodStone Nest Box (or similar) are recommended to provide nesting spaces on Site for birds such as blue tits, trees sparrows, house sparrows, great tits, crested tits, nuthatches (*Sitta europaea*) and coal tits. These boxes should be placed at 1.5-3 m above ground, or higher if there is a high domestic cat population; and

- Vivara Pro Barcelona WoodStone Open Nest Box (or similar) are recommended to provide nesting spaces on Site for birds such as wrens (*Troglodytes troglodytes*), robins (*Erithacus rubecula*), spotted flycatchers (*Muscicapa striata*), pied and grey wagtails (*Motacilla alba* and *Motacilla cinerea* respectively), song thrushes (*Turdus philomelos*) and blackbirds (*Turdus merula*). These boxes should be placed at 1.5-3 m above ground, or higher if there is a high domestic cat population. Open fronted boxes should be placed near cover such as a climbing plant or shrub, due to the more open style of the box.

5.1.4. Night-flowering plants could also be included in the proposals, possibly within planters or in borders, which will attract night-flying invertebrates and in turn, provide a food source for bats.

5.1.5. A bee bank could be incorporated into an area of open public space within the development to benefit a range of pollinators. Bee banks should be crescent shaped banks that are south-facing or south-east facing and in an area that receives full sun. Bee banks are best positioned close to a good source of nectar, so planting a wildflower meadow (N4 Summer Flowering Butterfly and Bee Mix or N5 Long Season Meadow Mixture by NatureScape are recommended) in the vicinity of the bee bank would be recommended in addition to the bee

bank, or its use by bees may be limited (Buglife, n.d). Vegetation on the bee bank would need to be managed to maintain a short sward and bare ground patches. To provide habitat for several species' groups on Site post-development, habitat piles could be included within the proposals. These consist of piles of material (rubble, rocks, logs etc.) with turf laid over the top. They provide valuable shelter spaces for invertebrate and resting, basking, sheltering and hibernation spaces for amphibians and reptiles.

5.1.6. In order to maintain open landscape post-development for foraging hedgehogs, consideration should be given to installing 'Hedgehog highways'. These are 13 cm by 13 cm holes created at the base of fences to allow hedgehogs to pass through and increase their dispersal through the landscape. They are recommended within garden fences both on the boundaries of the Site and within fences in the centre of the Site. This will open up the landscape for foraging hedgehogs, allowing their dispersal across the landscape. In addition, hedgehog boxes could be placed in quiet areas of the Site, ideally outside of private residential curtilage. The boxes should be placed within areas of scrub or dense vegetation, away from prevailing winds and other adverse weather conditions.

5.1.7. As well as the recommendation to retain boundary hedgerows, new hedgerows could be planted at garden boundaries instead of the proposed fences. These could be planted using native berry producing species such as bramble, blackthorn, hawthorn, field rose, dog rose, guelder rose, spindle, elder and rowan. These hedgerows will be much more valuable to local species than the proposed fences, and will benefit several species groups including birds, bats, other mammals and invertebrates. Additionally, the Site and species in the local area would benefit from additional tree planting in areas outside of private residential curtilage. These could be planted using native fruit and berry producing species such as those listed above in addition to wild cherry and hazel.

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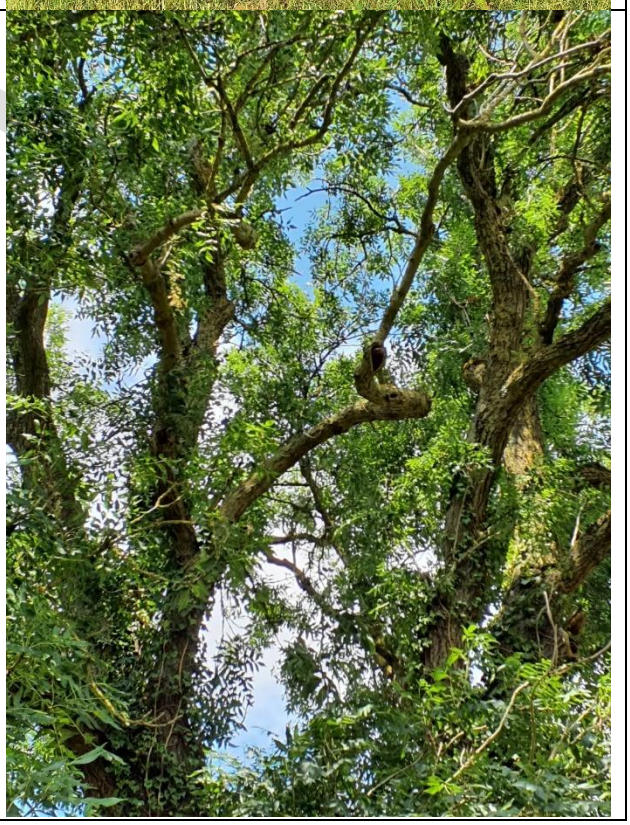
Appendix A: UK Habitat Plan

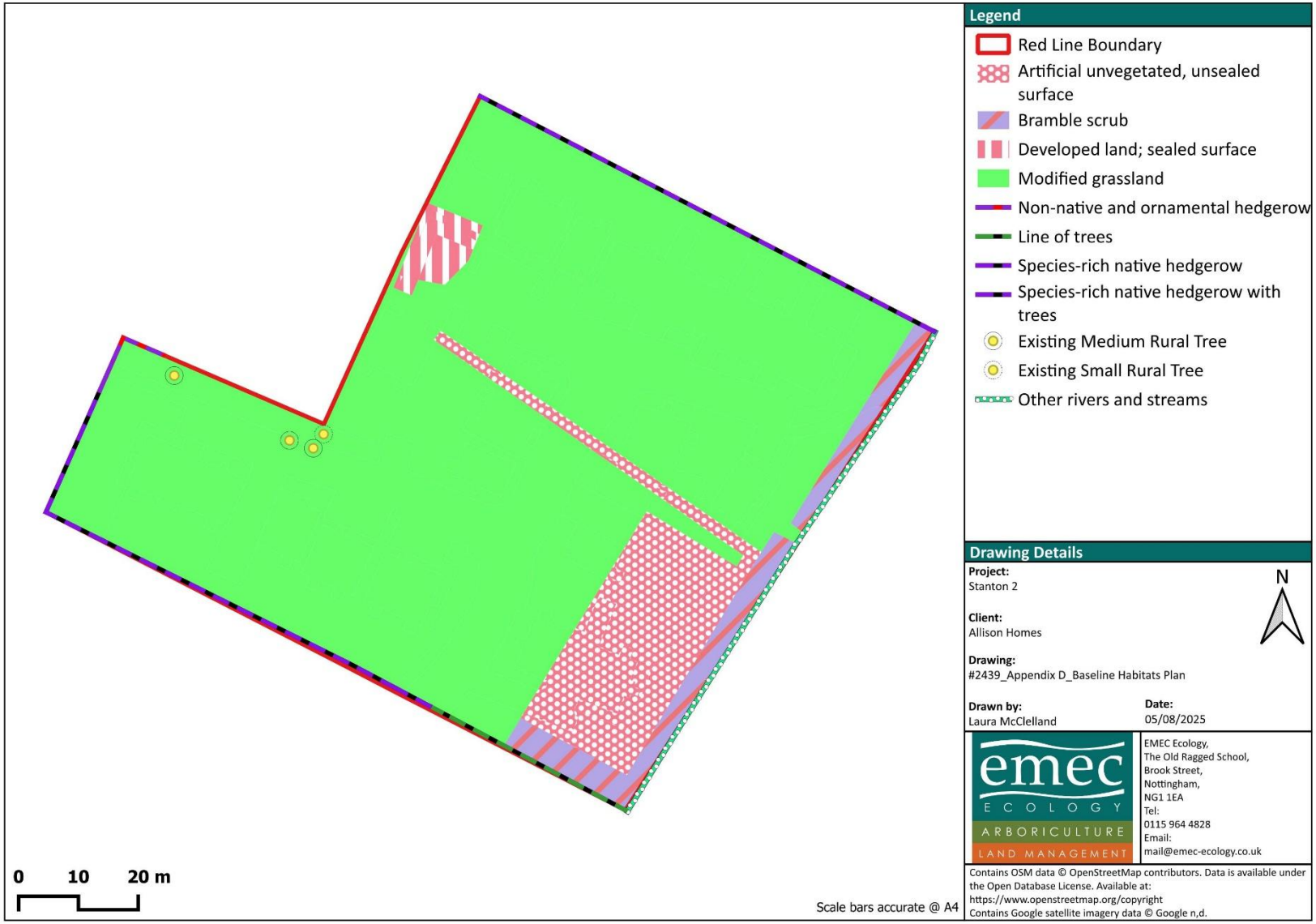
Appendix B: Target Notes and Photographs

No.	Description	Photograph
TN1	At least four swallow nest cups present inside the stable building	
TN2	Small stand of cherry laurel at the base of T2	
T1	Tree with bat potential (T1)	

T2	Tree with bat potential (T2)	

Appendix C: Proposed Site Layout

Appendix D: Baseline Habitats Plan



Appendix E: Preliminary Bat Roost Assessment Plan

Appendix F: Categories for Assessing Bat Roost Potential[17]

Bat Roost Potential Level	Roosting Habitats in Structures	Foraging and Commuting Habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels)	No habitat features on site likely to be used by commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).	Habitats that could be used by small numbers of bats as flight paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitats that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A 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, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight paths, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats for flight paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland.

[17] Collins, J. (ed.). (2023)

		Site is close and connected to known roosts.

Bat Roost Potential Level	Roosting Habitats in Trees
None	Either no PRF's in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRF's are present in the tree
PRF	A tree with at least one PRF present

Appendix G: Legislative Information

Receptor	Legislation	Offences
Badger	Protection of Badgers Act 1992	Wilfully kill, injure or take a badger. Intentionally or recklessly damage, destroy or obstruct access to a badger sett. Disturb a badger in its sett. It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.
Bats	Conservation of Habitats and Species Regulations, 2017 (as amended)	Deliberately capture, injure or kill a bat. Deliberate disturbance of bats. Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.
	Wildlife and Countryside Act 1981 (as amended)[4] S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.
Birds	Wildlife and Countryside Act 1981 (as amended)[4]	Intentionally kill, injure or take any wild bird. Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. Intentionally take or destroy the nest or eggs of any wild bird. **Schedule 1 species** Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover). Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.
Great Crested Newt	Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	Deliberately capture, injure or kill a great crested newt. Deliberate disturbance of a great crested newt. Deliberately take or destroy its eggs. Damage or destroy a breeding site or resting place used by a great crested newt.
	Wildlife and Countryside Act 1981 (as amended)[4]	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a great crested newt in such a place.
Hedgerows	Hedgerows Regulations 1997	Intentionally or recklessly remove or permits another person to remove an important hedgerow.

Receptor	Legislation	Offences
Non-native Invasive Plants	Wildlife and Countryside Act 1981 (as amended)	Allow to grow or spread in the wild, any plant included in Part II of Schedule 9 of the Act.
Otter	Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	Deliberately capture, injure or kill an otter. Deliberate disturbance of otters. Damage or destroy a breeding site or resting place used by an otter.
	Wildlife and Countryside Act 1981 (as amended)[4]	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb an otter in such a place.
Reptiles	Wildlife and Countryside Act 1981 (as amended)[4]	Intentionally kill or injure any common reptile species.
Water Vole	Wildlife and Countryside Act 1981 (as amended)[4]	Intentionally kill, injure or take water voles. Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by a water vole for shelter or protection. Disturb a water vole in such a place.
Wild Mammals	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.
Species and Habitats of Principal Importance	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	N/A, however public bodies have a duty to regard species and habitats of principal importance in their policy or decision making.

Site Designation	Legislation	Protection
Local Sites	There is no statutory designation for Local Sites.	Local Sites are given protection through policies in Local Development Plans.