

Preliminary Ecological Appraisal

LAND WEST OF LOWERCROFT ROAD, BURY,
GREATER MANCHESTER, BL8 3GQ

Prepared for

HJK Construction

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Version 01

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Data supplied by the client is assumed as correct. No responsibility can be accepted by Miranda Cowan Ecology Ltd. for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

Field surveys have been carried out, these have been restricted to a level of detail required to achieve the stated brief of the work. No part of this report may be copied or duplicated without express permission of Miranda Cowan Ecology Ltd. and the party for whom it was prepared.

The survey and reporting have been completed in accordance with the CIEEM Professional Code of Conduct, with the aim of upholding their objectives and the reputation of the profession.

Executive Summary

This Preliminary Ecological Appraisal (PEA) has been prepared on behalf of HJK Construction, who seek to pursue the development of four residential properties on a parcel of land (the 'site') west of Lowercroft Road, Bury, Greater Manchester.

The proposal includes four detached houses bounded with gardens divided by close-boarded timber fencing. Inclusion of biodiversity currently relates to the planting of seven trees scattered around the site's perimeter and shrub planting along the southern boundary where the land adjoins a small industrial estate.

A field survey completed on the 8th of March 2023 by Miranda Cowan Ecology Ltd. identified the site to have been de-vegetated, resulting in the land feature being defined as '*u1c Artificial unvegetated, unsealed surface*' - land having been cleared for development, as defined by the UK Habitat Classification Working Group (2018) criteria. This land feature does not retain any biodiversity value.

The PEA was supplemented by a desk study, involving an internet search and consultation with Greater Manchester Local Records Centre (GMLRC). An ecology report prepared by Living Ecosystems (2019) was provided by the client, which related to previous approved planning application for the site, relating to erection of industrial sheds. The ecology report has been reviewed as part of this PEA, which identified the site to support self-seeded shrubs and trees, constituting secondary woodland.

The most notable feature adjoining the site at its south-west corner was an area of Priority lowland mixed deciduous woodland, which is a good indication of a Habitat of Principle Importance (HoPI) as detailed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Deciduous woodland is also recognised in the Greater Manchester Biodiversity Action Plan (2009).

The site holds no current value for protected or notable species as all shrubs and trees have been removed. One sycamore *Acer pseudoplatanus* tree, densely covered with ivy remains on the site's south-western periphery, adjacent to the area of Priority lowland deciduous woodland. This tree holds potential for nesting birds from March to August, inclusive. The tree was assessed negligible value for roosting bats due to its densely compact and cluttered leaf form. Living Ecosystems (2019) identified the site's value for nesting birds and bat commuting and foraging, with recommendations made for the inclusion of bird and bat boxes.

The current development design would benefit from further measures to reflect a positive contribution towards biodiversity. These measures need to be included on the existing proposal plan or a specific Ecological Enhancement Plan, illustrating a measurable biodiversity net gain.

Habitats: all trees and shrubs included within the design should comprise of native species and could include nut and fruit bearing species benefit insects, birds and foraging bats. Tree species should be selected as established young specimens to optimise successful establishment and to offer a sense of habitat establishment within the site. Opportunity should be sought to replace and/or to parallel plant native hedgerows along the lengths of timber fencing, especially around the site's perimeter to seek opportunity to create functional habitat connectivity with the area of Priority lowland deciduous woodland. Soft landscaping within the garden design should be included within areas of the residential gardens to specifically benefit pollinating insects.

Protected Fauna: as there are no trees to accommodate artificial bird and bat boxes, it is recommended the design includes provision for bird nesting and bat roosting. Two house sparrow terrace boxes and three bat roost boxes are recommended to be integrated or fixed to the residential properties, ideally west facing to support functional connectivity to the area of Priority lowland deciduous woodland at the site's southwest corner.

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1. Introduction

1.1 Background

This Preliminary Ecological Appraisal (PEA) has been prepared on behalf of HJK Construction, who are seeking planning approval to erect four residential properties on a parcel of land (the 'site') adjacent to Lowercroft Road, Bury, Greater Manchester. The land equates to 2,117.1m² and is located on the suburban fringes of Bury at Ordnance Survey National Grid Reference (OSNGR) SD 7757 1110. The location of the site is illustrated as the red lined boundary of **Figure 1.1**.

The site design is included as **Appendix A** (Drawing HJK_LC_SPI) and includes vehicular access to the four detached properties leading off Lowercroft Road. Residential gardens are integrated with the properties and divided by close-boarded timber fencing. The proposal illustrates the integration of seven trees and potential shrub planting on along the southern boundary where the land adjoins a small industrial estate.

A survey to inform this PEA was completed on the 8th of March 2023 by Miranda Cowan Ecology Limited (Full member of MCIEEM and Technician of the Arboricultural Association). At the request of the client a Biodiversity Net Gain¹ assessment (BNG 3.1) maybe completed following recommendations outlined in this PEA and relative to the Environment At 2021² consultation and enactments.

Figure 1.1. Site Location, land adjacent to Lowercroft Road, Bury.



1.2 Preliminary Ecological Appraisal Objectives

The objectives of this PEA include:

- To provide survey baseline information on the habitats and species present, or likely to be present within the proposal site.
- Identify potential ecological opportunities and constraints relative to the proposal site.
- Identify habitats for retention or enhancement within the core proposal extents and additional measures for biodiversity enhancement.
- Identify additional survey requirements and / or potential mitigation measures specific to the proposal site.

¹ The Biodiversity Metric 3.1: Auditing and accounting for biodiversity: technical supplement (2022). Natural England Joint Publication JP039.

² Environment Act (July 2021): Legislation to improve water quality, tackle waste, increase recycling, halt the decline of species, and improve our natural environment.

1.3 Legislation and Strategies for Conservation

Legislation and biodiversity policy documents potentially pertinent to the application site are included as **Appendix B**. For a more definitive statement of law it is recommended that the full legislative acts are reviewed.

1.4 Planning Policy

The National Planning Policy Framework (NPPF) (Department of Housing Communities and Local Government, 2019) sets out the Government's planning policies for England and provides guidance on how these policies are expected to be applied. The NPPF includes a chapter on biodiversity, Chapter 15 – Conserving and Enhancing the Natural Environment, which outlines ways the planning system is required to contribute to enhancement of the natural environment by giving guidance to local authorities in respect of protection and enhancement of biodiversity within development projects.

The site is covered by Bury West Unitary Development Plan (UDP), which was adopted on the 29th August 1997. UDP Part 2 – Chapter 6: Environment, includes Policy EN6 – Conserving the Natural Environment, relating to protection and enhancement of the natural environment, ensuring that development integrates measure to encourage habitats such a retention and encouragement of new tree planting.

2. Methodology

2.1 Desk study

The following sources of information have been reviewed:

- Consultation with Greater Manchester Local records Centre (GMLRC) on the 9th of March 2023, relating to the request of protected and notable species data and the presence of non-statutory designated site for up to 1km from the site.
- The Government's '*Multi-agency Geographic Information for the Countryside*'³ (MAGIC) website was reviewed for statutory designations: Ramsars, Special Areas of Conservation (SAC), Special Protection Areas (SPA), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR). The search also included granted European Protected Species Mitigation (EPSM) licences, UK Biodiversity Priority Habitats, which may also be habitats of Principal Importance (HoPI)⁴ and the presence of Ancient Woodland
- Aerial imagery (Google Earth Pro) and OS maps to provisionally map habitats and identify potentially functionally linked habitat between the site and wider landscape. A search for ponds within 250m of the site were identified relative to the potential presence of great crested newts (GCN) *Triturus cristatus*.
- Review of a PEA prepared by Living Ecosystems (2019), which related to a previous application (65668) for the erection of 6 no. small business units.

2.2 Habitat Survey

Habitats were characterised using the UKHab classification system⁵, and their condition was assessed according to published technical guidance to inform Biodiversity Net Gain assessments⁶. The value and sensitivity of ecological features were determined based on the guidance given by the Chartered Institute of Ecology and Environmental Management (CIEEM) (2018)⁷.

Target Notes (TN) were used to identify features of interest or for the presence of invasive non-native species (INNS) species as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981, as amended). Photographs were also taken to help illustrate site features.

2.3 Scoping for Protected Species

Bats: In accordance with Good Practice Guidelines (BCT, 2016)⁸ any buildings and trees were assessed for their Potential Roost Features (PRF) for bats, i.e. natural holes (e.g. knot holes), woodpecker holes, cracks/splits in stems or branches (horizontal and vertical), partially detached, loose bark plates and ivy *Hedera helix* stems with suitable roosting space and voids. Each feature was graded in accordance to criteria in **Table 2.1**.

Habitat features within the local site context were also assessed for their suitability to support foraging and commuting bat populations, see **Table 2.2**.

³ <https://magic.defra.gov.uk/>

⁴ Habitats of Principal Importance for nature conservation in England listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; and habitats listed in Greater Manchester Biodiversity Action Plan.

⁵ UK Habitat Classification Working Group (2018). UK Habitat Classification – Habitat Definitions V1.0.

⁶ The Biodiversity Metric 3.1: Auditing and accounting for biodiversity: technical supplement part 1a (2021). Natural England Joint Publication JP039.

⁷ CIEEM (2018) 'Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.' Chartered Institute of Ecology and Environmental Management, Winchester.

⁸ Hundt L (2016) Bat Surveys: Good Practice Guidelines. 3rd Edition. Bat Conservation Trust.

Table 2.1: Bat roost suitability and descriptions (PRF Potential Roost Features)

Bat Roost Suitability	Description of Features
Confirmed presence	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.
High	A building structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.
Moderate	A structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. The feature and surrounding habitat do not provide enough shelter, conditions* space for larger roost types such as a maternity or hibernation roost. A tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.
Negligible	Buildings which appear unsuitable for roosting bats due to a clear lack of roosting spaces such as voids and/or absence of suitable access points.

Table 2.2: Suitability of foraging and commuting bat habitat, adapted from Collins (2016)

Category	Description of commuting and foraging habitat
Negligible Suitability	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low Suitability	Habitat which could be used by low numbers of commuting bats such as an isolated hedgerow (with gaps), or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.
High Suitability	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses, and grazed parkland. Site is close to and connected to known roosts.

Badgers: In accordance with Harris *et al.* (1989)⁹ and the National Badger Survey (Cresswell *et al.*, 1990) badger *Meles meles* setts and associated field evidence was searched for, including evidence of runs, prints, latrines and hairs caught on fences. Any setts identified were categorised as a main, subsidiary or outlier and further identified as being active, partially active or disused. Due to the legal protection of badgers and potential risk of badger baiting, the location of setts are not included in this PEA.

Riparian Mammals: Where watercourse were present within and adjacent to the site searches were included for otter *Lutra lutra* and water vole *Arvicola amphibius*. The survey methodology adhered to the Otters and River Habitat Management (National Rivers Authority 1993)¹⁰ and the Water Vole Conservation Handbook (Strachan *et al* 2011), the Water Vole Mitigation handbook (Dean *et al* 2016)¹¹.

Amphibians: Where ponds were identified (internet sources) as potentially present within 250m of the application site, the functionality of habitat links or ecological barriers (road) were identified. Any ponds within 250m of the site were assessed (where accessible) for their suitability to support great crested newts (GCN) *Triturus cristatus*.

English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines (2001)¹² states ponds within 500m of a proposed development site should be considered for their potential to support GCN, however, in some instances this distance may be reduced to 250m relative to physical barriers such as road or based on the likely magnitude of impacts arising from the proposed development.

Birds: Habitats were assessed for their potential to accommodate nesting birds between March to August, inclusive. Any notable bird species observed by sight or sound were noted.

Reptiles: In accordance with reptile habitat preference, as detailed in the '*Herpetofauna Workers Manual*' (Gent and Gibson, 2003)¹³ the habitats were assessed relative to variations in local topography / surface geology, connectivity to good quality habitat, refuge / hibernation opportunities, aspect and structural diversity for the presence of prey abundance.

Other Fauna: The habitats were assessed for other potential notable faunal species that offer significant contributions to biodiversity, i.e. hedgehog *Erinaceus europaeus*.

2.4 Assessment of Ecology Features

Habitats and species present on site were assessed using CIEEM's (2018)¹⁴ guidelines, applying the hierarchy in Table 2.2. Tools used to inform value applied elements of the Ratcliffe Criteria (i.e. size & rarity of features), the presence of UK BAP habitats and species, habitats and species of Principle Importance, wildlife legislation and the position of the site within the landscape and functional links to wider habitats. Potential significant impacts arising from the development have considered permanent / temporary habitat loss, reduction (fragmentation) of habitats, injury or disturbance to faunal species.

⁹ Harris S, Cresswell P and Jefferies D (1989). Surveying Badgers.

¹⁰ National Rivers Authority (1993). Otters and River Habitat Management. Conservation Technical Handbook, Number 3.

¹¹ Strachan R, Moorhouse T, Gelling M (2011) Water Vole Conservation Handbook. (3rd Ed) Wildlife Conservation Research Unit.

¹² English Nature (2001). Great Crested Newt Mitigation Guidelines

¹³ Gent and Gibson (2003) Herpetofauna Workers Manual

¹⁴ CIEEM, (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

Table 2.3: CIEEM's (2018) Evaluation Guidelines

Geographical Level of Importance	Category
International	Statutory designated sites: Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites (including candidate SACs and proposed SACs, SPAs and Ramsar sites). A viable area of a habitat type listed in Annex I of the Habitats Directive, or smaller areas of such habitat essential to maintain the viability of a larger whole. Regularly occurring populations of a species large enough in number to be of international importance where: • The loss or degradation of these populations would adversely affect the conservation status or distribution of the species at this geographic scale; or • The population forms a critical part of a wider population at an international level; or • The species is at a critical phase of its life cycle at this scale.
National	Statutory designated sites: Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR). Ancient Woodland. A viable area of a Habitat of Principal Importance as listed on Section 41 of the Natural Environments Rural Communities (NERC) Act 2006 or smaller areas of such habitat essential to maintain the viability of a larger whole. Resident, or regularly occurring, populations of species significant at an International, European, UK or National level where: • The loss of these populations would adversely affect the conservation status or distribution of the species at a national level; or • The population forms a critical part of a wider population at this scale; or • The species is at a critical phase of its life cycle at this scale.
County	Local Nature Reserves (LNR) and Non-statutory designated wildlife sites of county value. Areas which meet the published selection criteria for county site designations, but which are not themselves designated as such. Species – as per National level but where the loss of these populations would negatively affect the conservation status or distribution of the species at a county level and where populations/species are critical at the county scale. This may include locally significant populations of a species listed in a County BAP on account of its regional rarity or localisation.
District/Borough	Non-statutory designated wildlife sites of district/borough value. Species – as per County level but where the loss of these populations would negatively affect the conservation status or distribution of the species at a district level and where populations/species are critical at the district scale. This may include locally significant populations of a species listed in a District/Borough BAP on account of its regional rarity or localisation.
Local	Non statutory designated sites of local value. Areas of habitat considered to appreciably enrich the habitat resource within the local context (e.g. species-rich hedgerows, ponds etc.). It may also include sites that retain other elements of semi-natural vegetation that due to their size, quality or the wide distribution of such habitats within the local area are not considered for local designations. Populations/assemblages of species that appreciably enrich the biodiversity resource within the local context. Populations of county level important species that are not threatened or rare in the county and are not integral to maintaining those populations.
Site	Habitats and/or species that are of limited ecological importance due to their size, species composition or other factors. Areas of heavily modified or managed vegetation of low species diversity. Low or moderate numbers of common and widespread species.

3. Survey Findings

3.1 Designated Sites & Notable Habitats

There are no statutory designated sites within the 1km search area. **Table 3.1** lists two non-statutory Biological Heritage Sites (BHS), with Cockey Moor Wood Pasture and Marsh being functionally connected to the site via broadleaved woodland and shown on map as Priority lowland deciduous woodland, which is a good indication of a Habitat of Principle Importance (HoPI)¹⁵ Figure 1 (**Appendix A**) illustrates the area of Priority woodland located adjacent to the site.

Table 3.1: List of Biological Heritage Sites (BHS)

Site name	Location	Description	Relevance to site
Cockey Moor Wood Pasture and Marsh	SD 772 109	The site supports wood pasture and willow carr, which are rare habitats in Greater Manchester. There is a good proportion of dead wood, with nesting great spotted woodpecker and up to 30 daubenton <i>Myotis daubentonii</i> bats have been recorded, with abundant flying insects as a bat foraging resource.	105m from the site although directly linked to the proposal site via woodland, therefore could function as a conduit for species.
Cyrus Ainsworth's Nurseries & Parkers Lodges	SD 781 110	A series of ponds surrounded by broadleaved woodland. The ponds are known to support a population of great crested newts <i>Triturus cristatus</i> .	403m from the site with no hydrological connections, with Lowercroft Road and residential housing forming a barrier between the site and the designation.

3.2 Protected and Notable Species Data

Notable data potentially pertinent to the site is listed in **Table 3.2** and referenced further under Section 3.5.

Table 3.2: Summary Data for Protected and Notable Species Data

Species	Latin Name	Distance from Site (km)	Date Range	Number of occurrences
Mammals				
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	200-1km	1989-2020	62
Brown long-eared	<i>Plecotus auritus</i>	500m	2018	2
Daubenton	<i>Myotis daubentonii</i>	100m	1995-2021	11
Noctule Bat	<i>Nyctalus noctula</i>	200m	2005-2018	6
Western Hedgehog	<i>Erinaceus europaeus</i>	SD7789710710	2020	1
Birds				
Dunnock	<i>Prunella modularis</i>	SD777111	2011	4
House sparrow	<i>Passer domesticus</i>	SD777111	2011	2
Starling	<i>Sturnus vulgaris</i>	Bentley Hall SD768116	2015-2011	3
Amphibians and Reptiles				
Great Crested Newt	<i>Triturus cristatus</i>	550m	2014	19
Common toad	<i>Bufo bufo</i>	500m	2014	5

¹⁵ Priority Habitats were identified as of high conservation value under the UK Biodiversity Action Plan. However, the Priority Habitats list has now been superseded by Habitats of Principle Importance (HoPI) listed under Section 41 of the NERC Act 2006. As such the Priority Habitat Inventory can provide an indication of the location of HoPIs.

3.3 Habitats

Under the UK Habitat Classification criteria the site at the time of writing this report was characterised by u1c – Artificial unvegetated, unsealed surface, equating to 2,117 1m². The vegetation appeared to have been recently removed, with the ground being characterised by exposed soil and the trees having been cut to stump level. There was one sycamore *Acer pseudoplatanus* tree, densely covered with ivy that appeared to be located on the sites south-western periphery, adjacent to the area of Priority lowland deciduous woodland.

Living Ecosystems (2019) who reported on a previous application for the construction of industrial units categorised the site as woodland, which may align to the UK Habitat Classification of w1f7 Other lowland mixed deciduous woodland that typically occurs with urban or rural situations and developed from self-sown specimens.

The site habitats are illustrated on Figure 1 (**Appendix A**), with site features shown as Photographic Plates below.

Plate 1: Overview of the site.	Plate 2: Site overview showing area of potentially connecting priority woodland habitat.
	

3.4 Protected and Notable Fauna

Bats: Bat desk study data included 62 common pipistrelle *Pipistrellus pipistrellus* records dating from 1989-2020, with fifteen of these records identified as roosts. There were also two brown long-eared *Plecotus auritus* roosts (2018) and other records related to general field observations for eleven daubenton *Myotis daubentonii* (1995-2021) and six noctule *Nyctalus noctule* bats (2005 – 2018).

Table 3.1 illustrates there to be two EPSL within 2km of the site. Due to the distance of the EPSL and the presence of continuous urban conurbation between the site and the records, the EPSL are assessed as not being significant to the proposal.

A sycamore tree densely covered with ivy on the sites south-western periphery was assessed as negligible value for roosting bats. This was due to its densely compact structure of the ivy and due to being cluttered by leaves. The sites itself holds negligible potential for foraging bats, with the area of priority woodland linked to the site in its south-west corner offering the most suitable functional habitat for bat commuting and foraging. The woodland is functionally linked to Cockey Moor Wood Pasture and Marsh SBI, which is known as an important forging habitat for daubenton bats.

Table 3.3: European Protected Species Licences for Bats (magic, accessed 19th March 2023)

EPSL ref	Species	EPSL Date	Reason for Licence	Relevance to Site
2018-33380-EPS-BDX	Common pipistrelle <i>Pipistrellus pipistrellus</i>	01/04/2018 to 30/04/2018	Damage and destruction of a breeding site & resting place.	1.4km south-east, separated by urban conurbation, not significant to site.
EPSM2012-5060	Common pipistrelle <i>Pipistrellus pipistrellus</i>	08/04/2013 to 01/10/2015	Destruction of a breeding site	1.6km south-east, separated by urban conurbation, not significant to site.

Badgers: Records for badger are treated as confidential, although it can be confirmed that there are no badger setts within 100m of the site. No badger setts or evidence of badger field activity (runs or foraging) were present within or up to 30m from the site. Due to the site being cleared of vegetation, there is negligible potential for sett excavation.

Riparian mammals: There were no records for water vole or otter and there are no direct hydrological connections to the site. Taking the desk study findings into context and as the site has been recently cleared it can be reliably assessed that riparian mammals are absent.

Birds: The desk study data included 3 notable bird species that are potentially pertinent to the site, including house sparrow *Passer domesticus*, starling *Sturnus vulgaris* and dunnock *Prunella modularis*. One sycamore tree located on the sites south-western periphery held potential for nesting birds from March to August, inclusive. The remaining extents of the site had been de-vegetated and held no potential for bird nesting.

Amphibians: There were 19 desk study records (2014) for great crested newt, the closest record was located at a distance of 550m directly east and likely to be associated with Cyrus Ainsworth's Nurseries and Parkers Lodges SBI. Magic did not reveal any EPSL or great crested newt licence returns.

Ponds associated with Cyrus Ainsworth's Nurseries and Parkers Lodges SBI are located at a distance of 500m. Lowercroft Road is highly likely to form a significant barrier to the migration of great crested newts and other amphibians and there are also areas of residential housing between the great crested newt records and the site.

There is a large waterbody associated within Cockey Moor Wood Pasture and Marsh SBI, located 105m directly west. Given the size of the waterbody (c.18,600 sq m) and the likely presence of fish, the potential for great crested newt is assessed as below average. As the site has been cleared of vegetation, the terrestrial habitat value for great crested newt is assessed as negligible.

Research undertaken by English Nature (Cresswell, 2004) suggests it is most common to encounter GCN within 50m of a breeding pond, with few moving further than 100m unless significant linear features are involved, when GCN can be encountered at distances of between 150m – 200m.

Reptiles: There were no data search records pertaining to reptiles within 2km of the site as the site has been recently cleared it can be reliably assessed that reptile species are absent.

Invertebrates: No significant records were returned from the desk study and due to the site having been cleared of vegetation, the site had negligible potential for invertebrates.

4. Evaluation and Recommendations

4.1 Habitats

The site comprised of bare soil due to having been de-vegetated and was valued at site level, having limited ecological importance due to the small size of the site and absence of habitats. The current development design would benefit from additional measures to reflect a positive contribution towards biodiversity. The bulleted measures below are recommended for inclusion with the proposal design or demonstrated on a specific Ecological Enhancement Plan.

- All trees and shrubs included within the design should comprise of native species and could include nut and fruit bearing species benefit insects, birds and foraging bats.
- Trees species should be selected as established young specimens to optimise successful establishment and to offer a sense of habitat establishment within the site.
- Opportunity should be sought to replace and/or to parallel plant native hedgerows along the lengths of timber fencing, especially around the sites perimeter to seek opportunity to create habitat connectivity with the area of Priority deciduous woodland. Favourable shrub species to be sourced as saplings should include hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, field maple *Acer campestre*, hazel *Corylus avellana*, guelder rose *Viburnum opulus*, honeysuckle *Lonicera periclymenum* and elder *Sambucus nigra*. Planting of saplings in two rows and 50m apart will facilitate the establishment of a structurally diverse hedgerow.
- The length of any hedgerow creation needs to be specified to provide a measurable gain for biodiversity.
- Integrate soft landscaping with the development, using native and selected ornamental plant species to benefit pollinating insects. A list of suitable species are included as **Table 4.1**, which are to be sourced as plugs to enhance the potential for successful colonisation.

Table 4.1: Plant species suitable for encouraging pollinating insects.

Species English	Species Latin	Character
Bugle	<i>Ajuga reptans</i>	Native perennial herb up to 15cm, flowering from April to July. Will tolerate damper ground conditions.
Common knapweed	<i>Centaurea nigra</i>	Tall perennial herb up to 60 cm, flowering from June to September. Very high value to butterflies.
Crocus species	<i>Iridaceae</i>	Low growing plant suitable for early emerging pollinating insects.
Feverfew	<i>Tanacetum parthenium</i>	Tall perennial herb up to 60cm, flowers June to September.
Field scabious	<i>Knautia arvensis</i>	Native tall perennial herb up to 80 cm, flowering from July to September.
Fox glove	<i>Digitalis purpurea</i>	Tall native plant that will grow in soil and gaps in stones, flowering June to September and generally favoring acidic soil. A valuable source of pollen for bees.
lavender	<i>Lavandula</i> spp	Ornamental species with high pollinating potential.
marjoram	<i>Origanum vulgare</i>	Native aromatic herb, a good nectar source for insects.
Oxeye daisy	<i>Leucanthemum vulgare</i>	Tall perennial herb up to 60cm, flowering from May to September. A good nectar source for butterflies, bees and hoverflies.
Self-heal	<i>Prunella vulgaris</i>	Low-growing perennial herb up to 20cm, flowers from June to October.

Species English	Species Latin	Character
Snow drops	<i>Galanthus nivalis</i>	Low growing plant suitable for early emerging pollinating insects.
Perforate St johns-wort	<i>Hypericum perforatum</i>	Tall perennial herb up to 60-80cm, flowering June to September.
Rosemary	<i>Salvia rosmarinus</i>	Ornamental species with high nectar value.
vipers-bugloss	<i>Echium vulgare</i>	Nectar-rich for honeybees and other pollinating insects.
Yarrow	<i>Achillea millefolium</i>	Perennial growing up to 30cm, flowering June to November.

4.2 Protected and Notable Fauna

Relative to the desk study and field survey findings, the site was assessed as having negligible potential for badger, reptiles and great crested newt. Due to an absence of watercourses riparian mammals were assessed as absent. Protected and notable species requiring further consideration as part of the proposal relates to bats and birds. Each species is discussed further under the following sub-headings.

Bats

The site was absent of trees and buildings (exclusion of a sycamore on the site south-western boundary), with no opportunities for roosting bats and negligible foraging potential. Priority woodland habitat and Cyrus Ainsworth's Nurseries and Parkers Lodges SBI are functionally linked to the site at its south-west corner, where there is potential for bats to access the site post development, as site habitats become established. As such, the proposal will need to consider low impact lighting and opportunities to support local biodiversity, with the provision of artificial bat roosting features.

Low Lighting Recommendations: The following can be used to minimise adverse impacts on commuting and foraging bats:

- Type of lamp: using low- or high-pressure sodium instead of mercury or metal halide lamps;
- Use of UV filters/glazing;
- Light levels: Within standards for safety and security, light levels should be at the minimum required;
- Timing: Use of timers and/or movement sensors to ensure lighting is only used when required;
- Minimising light spill by design of luminaire and use of accessories such as hoods, cowls louvres and shields; and
- Use directional lighting to avoid illuminating important commuting corridors and foraging habitat, as well as potential bat roost features within trees.

Of particular importance will be to direct lighting away from habitats, as these features could be used by commuting and foraging bats.

Bats and Biodiversity Enhancement: Any development provides an opportunity for a positive contribution towards helping conserve and enhance local bat populations. This can be achieved through installation of bat boxes, see **Table 4.2**.

Table 4.2: Biodiversity enhancement for bat roosting

Roosting Bats	
	Bat boxes to be incorporated into the design scheme can be sourced at https://www.nhbs.com/ A minimum of 3 bat boxes should be included as part of the final scheme design. A range of bat roosting features are available for buildings, including bat bricks that can be integrated with the design. Images to the left include custom brick 001 and 1FE bat access panel. Boxes will need to be placed on the west elevations of the dwellings, facing out towards the priority woodland. Boxes to be placed 4 m above ground, close to fascia, although not above any windows. Only a suitably experienced and licensed ecologist should inspect bat boxes.

Birds

Avoidance Measures for Breeding Birds: As the vegetation has been removed from site, there are no avoidance measures required for breeding birds.

Birds and Biodiversity Enhancement: Relative to the desk study findings, suburban site context and due to loss of potential bird nesting habitat it is recommended that nesting provision is provided for the potential notable bird species house sparrow¹⁶, see **Table 4.3**.

Table 4.3: Biodiversity enhancement for nesting birds

House Sparrow Terrace	
	House sparrow Schwegler wood-concrete design, weight 15kg. Source from https://www.nhbs.com/ Two nest boxes will be suitable for the development design. The terrace is suitable for all types of houses in built-up areas. Place the box below the roof line and not directly above or below any windows. Install on the surface of an external wall using the plugs and screws, west or east facing aspects will be suitable. Cleaning is advisable but not necessary, from September onwards once birds have stopped using the terrace. The front panel can be removed by turning the screw hook.

¹⁶ Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746.

5. Conclusion

The PEA concludes the proposal site habitats and species to be of value at the 'site level', which relates to a small area of land devoid of vegetation and absent and/or of negligible value to protected and notable species. Due to vegetation having been removed, the proposal will need to demonstrate measures for achieving biodiversity gain. This will relate to the integration of hedgerow planting and soft landscaping and provision of bat and bird boxes, see **Table 5.1**.

The number and extent of hedgerows and soft landscaping needs to reflect a measurable gain to achieve biodiversity requirements in accordance with national and local planning policy. All biodiversity measures will also need to be integrated with the development design to reflect a commitment of such measures being implemented.

Table 5.1: Key summary biodiversity measures for land adjacent to Lowercroft Road, Bury.

Feature	Survey Recommendations	Timings	Biodiversity Enhancement Recommendations
Habitats	No further surveys required.	NA	Creation of native hedgerows around the outer perimeter of the properties, to replace fencing. Plant native tree species as established specimens. Integrate soft landscaping measures to support pollinating insects.
Bats	Integrate external low lighting to minimise adverse impacts on commuting and foraging bats. Direct lighting away from habitats such as hedgerows.	At start of development.	Installation three bat boxes, either as integral with brickwork or externally fixed to the brickwork. Boxes to be installed to a minimum height of 4m, facing west to allow heating from the sun and shelter from prevailing winds, and close to woodland at the site south-west corner.
Birds	No further surveys required.	NA	Install two house sparrow terrace boxes on one or two of the residential properties. The boxes can be east or west facing.

6. Bibliography

Bat Conservation Trust (2008) *Bats & Lighting in the UK* (Second Edition).

Bat Tree Habitat Key. (2018). *Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*. Exeter: Pelagic Publishing.

CIEEM, (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

Colins, J, (ed.) (2016). *Bat Survey for Professional Ecologists: Good Practice Guidelines* (3rd Edition), Bat Conservation Trust.

Crosher, I., Gold, S., Heaver, M., Heydon, M., Moore, L., Panks, S., Scott, S., Stone, D. & White, N. (2019). The Biodiversity Metric 3.0: Auditing and accounting for biodiversity value: technical supplement (Beta version, July 2021). [Natural England](#).

CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal*. Revised 2nd Edition. IEEM. Winchester.

Defra, 2008. The Invasive Non-Native Species Framework Strategy for Great Britain

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108, 708–746.

Google Earth Pro (2019). Google Earth [online]. Available at: >www.earth.google.com

Hundt L (2016) *Bat Surveys: Good Practice Guidelines*. 2nd Edition. Bat Conservation Trust.

Joint Nature Conservation Committee (2010) *Handbook for Phase I Habitat Survey – a Technique for Environmental Audit*, reprinted 2010, JNCC, Peterborough.

Stace C (2010) *New Flora of the British Isles*. Third Edition. Cambridge University Press.

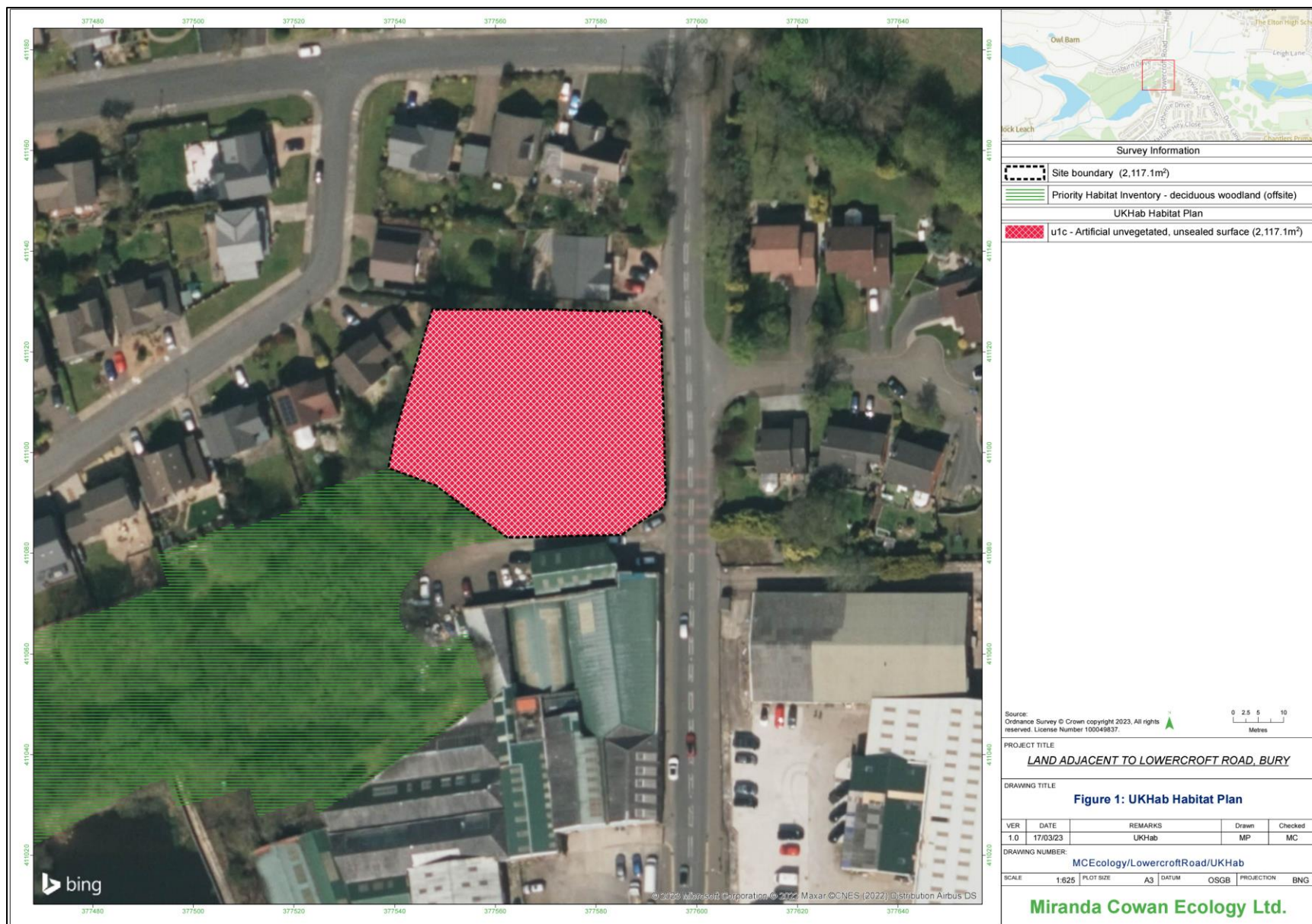
Wildlife and Countryside Act 1981 (as amended). Her Majesty's Stationary Office.

UK Habitat Classification Working Group (2018) UK Habitat Classification User Manual

7. Appendices

Appendix A: Site Plan (Drawing HJK_LC_SP) and UK Habitats Plan





Appendix B: Legislation

Legislation potentially applicable to the site is detailed below, which covers the UK and Wales only. For a more definitive statement of law it is recommended that the full legislative acts are sighted.

Conservation of Habitats and Species Regulations 2017: are made under section 2(2) of the European Communities Act 1972, are the principal means by which Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the “Habitats Directive”) is transposed for England and Wales and territorial seas.

The Wildlife and Countryside Act 1981 (as amended): gives general protection measures for wildlife and special measures for species included on Schedules of the Act. Schedule 1 lists birds that are afforded special protection, Schedules 4-6 protects various wild animal species from injury, killing or disturbance, and Schedule 8 confers protection to certain plant species. Section 14 prohibits the establishment of non-native plant species, which are listed in Schedule 9. It is an offence to plant or cause schedule 9 species to grow in the wild. This includes the moving of contaminated soil or plant cuttings.

The Countryside and Rights of Way Act (CROW Act) 2000: amended the Wildlife and Countryside Act 1981 to also make it an offence to intentionally or recklessly damage, destroy or obstruct a place that a species, listed on Schedules of the Wildlife and Countryside Act, uses for shelter or protection. The repealed Section 74 of the CROW Act listed habitats and species important to biological diversity in England, in accordance with the 1992 UN Convention on Biodiversity (Habitats and Species Action Plans under The UK Biodiversity Action Plan is the means by which the government complied with its duty under Section 74).

Section 41 of the Natural Environment and Rural Communities Act (2006): replaces Section 74 of the Countryside and Rights of Way Act, 2000 and refers to the list of organisms and habitats of principal importance published under the repealed Section 74 of the CROW Act 2000. The Secretary of State must take such steps to further the conservation of the living organisms and types of habitat included in the list and promote the taking by others of such steps.

The National Planning Policy Framework (NPPF) (Department of Housing Communities and Local Government, 2019): sets out the Government’s planning policies for England and provides guidance on how these policies are expected to be applied. The NPPF includes a chapter on biodiversity, Chapter 15 – Conserving and Enhancing the Natural Environment. In addition to being concerned with the protection of statutorily designated sites, the Chapter outlines ways in which the planning system is required to contribute to and enhance the natural and local environment and sets out guidance for local authorities in respect of the consideration of biodiversity and green infrastructure. The NPPF is a material planning consideration.

The ‘UK Post-2010 Biodiversity Framework’: succeeded the UK Biodiversity Action Plan (UKBAP) in July 2012. The post-2010 framework is underpinned by the biodiversity and environment strategies of the four countries of the UK and sets out their common purpose and shared priorities. The UKBAP list of priority species remains as a reference source and has been used to help draw up statutory lists of priorities.

Environment Act 2021: has recently been through its consultation process, with the results posted at <https://www.gov.uk/government/consultations/environment-act-2021-environmental-targets>. This confirms that secondary regulations are expected to be enacted in November 2023, which will mandate a 10% biodiversity net gain for all Town and Country Planning applications. Therefore, a strategy for achieving 10% BNG needs to be identified, where it is worthwhile to allow for input into landscaping and master planning for a feasibility BNG report to be undertaken at this stage. This will identify key opportunities for delivering the necessary biodiversity units for habitats such as hedgerows, grassland, rivers as applicable. This would then be updated into a design phase BNG report and once there is a fixed design to reflect a commitment to landscaping is and biodiversity units a fixed BNG report can be prepared.

Biodiversity 2020: is a strategy for England’s wildlife and ecosystem services’, published in 2011, is the most recent biodiversity strategy for England, and has as its mission to halt overall biodiversity loss, support healthy well-functioning ecosystems, and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people; and

In the UK many habitats and species are afforded legal protection to varying degrees through national and European legislation. In addition, advice pertaining to wildlife is given in several planning policy

documents and other planning guidance. The main legislation and biodiversity policy documents of relevance to this PEA is summarised below, however, for a more definitive statement of law it is recommended that the full legislative acts are reviewed.

Biodiversity Action Plan (2019) and Greater Manchester Biodiversity Strategy (2022-2033): set out a vision and measures to increase the scale of practical action to protect and recover Manchester's (extending out to influence its Boroughs) habitats and species throughout the city in accordance with legislation and policy.