



**Ecological Appraisal including
Biodiversity Net Gain (BNG)
Appraisal**

**Land rear of 9, High Street
Barkway
Hertfordshire
SG8 8EA**

Updated March 2025

For and on behalf of:
Ian Abrams Architects
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Declaration

This report has been produced endeavouring to follow the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct and ecological information has been provided in accordance with British Standards BS 42020 2013-Biodiversity-Code of practice for planning and development.

Whilst every effort has been taken to ensure this report accurately identifies potential ecological constraints to development or the likely presence or absence of species and the spatial and temporal use of the site by such species, it must only be viewed as a snap shot in time and reflects the ecological status of the site at the time of survey.

No liability can be assumed for ecological changes that may or may not occur on the surveyed site after the production of this report. The author of this report must be consulted as to the current applicability of the report if there are any seasonal delays in the use of this report.

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Executive Summary

The purpose of this report is to identify potential redevelopment constraints pertaining to biodiversity, important and protected species for a very small site (hereafter referred to as the application site), comprising a former vehicle garage, ruderal/ephemeral, tall forbs, bramble scrub and three individual mature trees. In addition, the application site supports very small areas of introduced shrubs, artificial, unsealed surface, bare ground and developed land, sealed surface.

The application site is situated to the rear of number 9, High Street, Barkway – a linear village in north Hertfordshire.

It is proposed to convert and extend the existing garage building to create a new residential dwelling. The former garage has a pre-existing planning consent for its conversion and has been the subject of a number of previous Potential Bat Roosting Assessments (PBRAs), as part of that planning consent. A Bat Mitigation Class Licence (Low Impact) is in place for the garage and has facilitated the soft-strip of the roof to exclude roosting bats.

In order to assess redevelopment effects on important and protected sites, species and habitats, a desk study involving a biological data search, together with a Preliminary Ecological Appraisal (PEA) of the application site have been completed by a suitably qualified and experienced ecologist.

The application site is not designated a site of nature conservation importance and none of the nearby Local Wildlife Sites are predicted to be adversely affected by the redevelopment proposals. There are no predicted adverse impacts on protected and/or important species and habitats as a result of the redevelopment of the application site. Some mitigation measures will be implemented to avoid adverse impacts on nesting bird and hedgehogs (*Erinaceus europaeus*).

The Statutory Small Sites Biodiversity Metric has calculated the application site's baseline to be worth 1.6124 Habitat Units (HUs). The draft proposed site layout has been provided and calculations indicate a Biodiversity Net Gain of **+10.69%** in Habitat Units. Habitat creation on-site includes, importantly, the retention of the three mature trees on site, the planting of areas of wildflower meadow

planting (appropriate to the local area) and the planting of 20 new trees. In addition, the planting of a new length of native hedgerow, measuring approximately 100m will result in a Biodiversity Net Gain of **+100%** in Hedgerow Units as there are currently no existing hedgerows on site.

As an additional ecological enhancement, specifically for protected species,
– three bat boxes will be installed on one of the retained trees within the site.

1.0 Introduction

1.1 Background

- 1.1.1 It is proposed to convert a small former vehicle garage into a residential dwelling which includes an extension. In addition, a new cart lodge is proposed along with a garden, areas of wildflower meadow planting and the planting of 20 new trees throughout the site.
- 1.1.2 The former garage has a pre-existing planning consent for its conversion and has been the subject of a number of previous Potential Bat Roosting Assessments (PBRAs), as part of that planning consent. A Bat Mitigation Class Licence (Low Impact) is in place for the garage and has facilitated the soft-strip of the roof to exclude roosting bats. Therefore, the existing garage has been excluded from this current ecological appraisal of the application site.
- 1.1.3 The purpose of this Ecological Appraisal (EA) report is to detail the results of an initial ecological appraisal of the red line application site with the aim of identifying potential biodiversity constraints that may affect the site's development as currently proposed. It will also inform any mitigation measures, if necessary. This study also includes a BNG calculation and assessment of the site within the application site red line boundary.
- 1.1.4 This ecological study has been commissioned by Ian Abrams Architects Limited of Newport, Essex, on behalf of the applicant. The site with which this study is concerned is referred to throughout the report as the application site. The aerial photo below indicates the indicative extent of the application site and shows it in its geographical context, within its landscape surroundings.



Plate 1: Aerial photo with red line boundary shown

- 1.1.5 The report's author is Mr Keith Seaman who holds a Bachelor of Science Degree in Environmental Studies; Agri-Ecosystem Management, a Diploma of Higher Education in Ecology and a Certificate of Higher Education in Ecology and Conservation. His professional qualifications include membership of the Royal Society of Biology (RSB) registered as a Chartered Biologist and professional grade membership of The Chartered Institute of Ecology and Environmental Management (CIEEM). Keith Seaman also holds Natural England Class licences for all UK bats, badger (*Meles meles*), great crested newt (*Triturus cristatus*), otter (*Lutra lutra*), barn owl (*Tyto alba*) and dormouse (*Muscardinus avellanarius*).
- 1.1.6 Keith Seaman has been an academically qualified Ecologist since 1995 and a professionally qualified Ecologist since 2004 and since then has gained considerable experience working in both the public and private sectors carrying out Ecological Impact Assessments as well as protected species appraisals and developing mitigation strategies.

2.0 Planning Policy and Legislation

2.1 Relevant National and Local Planning Policies

National Planning Policy Framework

2.1.1 The National Planning Policy Framework (NPPF) superseded Planning Policy Statement 9 (PPS9) in March 2012. The NPPF 2024 states that 'planning policies and decisions should contribute to and enhance the natural and local environment by', in part;

- 'Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs.'

It also states that 'when determining planning applications, local planning authorities should apply the following principles';

- 'If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused
- Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains

for biodiversity or enhance public access to nature where this is appropriate.'

2.2 Local Plan Policies

2.2.1 The North Hertfordshire District Council's Saved Local Plan (September 2007) is the current local level policy guidance covering the application site. The following policy from the document is, in part, relevant to this study;

2.2.2 Policy 14: Nature Conservation

2.2.3 'Elsewhere, or when a development proposal is acceptable, the Council will expect development proposals to take account of, and where possible, to show improvements to the nature conservation value of the site and its surroundings. In addition, the Council may require the preparation and implementation of a management scheme to maintain or enhance the site's nature conservation value'.

2.3 Legislation

The Conservation of Habitats & Species (Amendment) (EU Exit) Regulations 2019

2.3.1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 in the UK implement the EC Habitats Directive in the UK. These regulations mainly deal with the protection of sites that are important for nature conservation in a European context (eg Special Areas of Protection [SACs] and Special Protection Areas [SPAs]). The legislation also gives protection to certain species of flora and fauna.

2.3.2 The 2019 Regulations makes it an offence to deliberately capture, kill or disturb wild animals and it is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Wildlife & Countryside Act (WCA)

2.3.3 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European

Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive).

Natural Environment & Rural Communities Act (NERC)

- 2.3.4 The NERC Act of 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

3.0 Methodology

3.1 Field Survey

- 3.1.1 This report has been produced following the *Guidelines for Preliminary Ecological Appraisal* 2017 (Chartered Institute of Ecology and Environmental Management). Habitats have been described, based, on the methodology from the UK Habitat Classification (Ref. 4). In some circumstances habitat descriptions and mapping may have been adapted to suit non-standard site-specific conditions.

3.2 Scoping for Protected & Important Species

- 3.2.1 The habitat survey has been extended to include a scope of the application site's habitats as to their likely importance or potential to support protected or important species and habitats, as identified under the following legislation; the Habitat Regulations 2019, the Wildlife & Countryside Act (as amended) 1981, the Protection of Badgers Act 1992, the Hedgerow Regulations 1997, International Union for Conservation of Nature (IUCN) Birds of Conservation Concern (BoCC) Red and Amber Lists and the Natural Environment & Rural Communities (NERC) Act 2006.
- 3.2.2 Some species and species groups have been scoped out of this EA because of the lack of available biological records, limitations in geographical distribution and the absence of species-specific suitable habitat and connectivity within or adjacent to the application site. Only those important and protected species and species groups deemed likely to be present on site or affected by the proposals have been included in this EA.
- 3.2.3 The EA was carried out on the 12th July 2024 by Mr Keith Seaman, Principal Ecologist with ELMAW Consulting Ltd, assisted by Assistant Ecologist Ms Jasmine Stephenson BSc. Weather conditions on the day were suitable for surveying – warm, dry and with a light breeze.

3.3 BNG-The Statutory Biodiversity Metric

- 3.3.1 The Statutory Biodiversity Metric uses habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity value. This value is then adjusted, depending on the condition and location of the habitat, to calculate 'biodiversity units' for the specific project or development.

The Statutory Biodiversity Metric incorporates separate calculations for linear habitats that require a different method of measurement such as hedgerows and lines of trees, rivers and streams, if present.

3.3.2 The Statutory Biodiversity Metric can be used to measure both on-site and off-site biodiversity changes for a development and can be used to measure the change in biodiversity achieved by different land management interventions. The Metric also accounts for some of the risks associated whenever new habitat is created or existing habitat is enhanced. The Metric calculates the change in biodiversity resulting from a development by subtracting the number of pre-intervention or 'baseline' biodiversity units (ie those originally existing on-site) from the number of post-intervention units (ie those projected to be provided after the development or change in land management).

3.3.3 Baseline habitat conditions are classified in a robust and consistent manner. Where appropriate, the classification and condition assessment of baseline habitats are based on the data available at the time of assessment. However, if the preliminary survey is carried out outside the active growing season, in the case of some habitats such as grasslands, it is necessary to carry out a Phase 2 botanical assessment during the growing season (May to August inclusive) in order to accurately classify and condition-assess the habitat parcel(s). The classification and condition of grasslands are assessed by (among other things) counting the number of species present at an appropriate time of year. Therefore, further botanical surveys will be required in this case, in late May/June.

The Statutory Small Sites Biodiversity Metric

3.3.4 There is a separate Metric for small sites – the *Statutory Small Sites Metric (SSM)*. This Metric provides a way to measure biodiversity and the impact that small development projects may have upon it in a consistent way. The SSM can only be used for 'small sites' – small sites are defined as not major developments under the Town and Country Planning (Development Management Procedure) (England) Order 2015. This means:

- residential development where the number of dwellings is between 1 and 9 on a site of an area 1 hectare or less, or if the number of dwellings is unknown, the site area is less than 0.5 hectares, or
- commercial development where floor space created is less than 1,000 square metres or total site area is less than 1 hectare, or

- development that is not the winning and working of minerals or the use of land for mineral-working deposits, or
- development that is not waste development

3.3.5 The baseline and post-development habitat calculations for the application site have been calculated based on draft soft-landscape plans. Once finalised soft-landscape proposal drawings for the site are available these calculations will need to be recalculated.

3.4 *Limitations*

3.4.1 Plant species lists in this report are recorded to provide a snap-shot of the site and are not exhaustive. It is possible that certain plant species may have not been recorded during the survey due to seasonal constraints, such as flowering time, or other limitations. It is, however, considered that the species characteristic to the habitats on site were recorded, unless otherwise advised in this report. This report is not designed or required to present a complete inventory of flora/fauna.

3.4.2 As to the reliability of the assessment for protected species, it must be further acknowledged that this EA is based on the presence of suitable habitat, local biological records, geographical distribution and habitat connectivity to support such important species and not on qualitative species-specific surveys. Where the potential for important species has been identified, further species-specific surveys are considered necessary to be confident of either a positive or negative conclusion as to the presence of protected species on site. Where a European Protected Species Mitigation (EPSM) licence is required, species survey data of the current season and year of the application is required by Natural England.

3.4.3 The Chartered Institute of Ecology and Environmental Management (CIEEM) advises that where mobile species such as reptiles and bats are concerned, this report is likely to be out of date within 12 - 18 months and will need updating.

3.4.4 The study specifically addresses the issues of potential redevelopment constraints affecting important and protected species and habitats.

3.5 Desk Study

- 3.5.1 Biological records of protected and Priority Species and Habitats from a Zone of Influence (Zol) of 2km around the application site have been sourced from the Hertfordshire Environmental Records Centre (HERC) on the 1st July 2024. The results of the data search request were received on the 1st July 2024. In addition, all international sites of nature conservation importance within a 10km radius, nationally important sites within a 5km radius and local sites within a 2km radius of the application site have been sourced.
- 3.5.2 Only species records from the last ten years have been included as it is considered that records older than this are not sufficiently recent to be relevant to this study.
- 3.5.3 Google earth aerial photographs and DEFRA's Magic Map Application images have been examined of the application site and surrounding landscape as have the relevant Ordnance Survey Explorer Maps at a 1:25,000 scale.

3.6 Determining Biodiversity Significance

- 3.6.1 The Institute of Ecology and Environmental Management in 2016 identified various ecological features and resources which are likely to be important in terms of biodiversity. These are likely to include habitats, species and species groups and ecological communities and are determined on the basis of a number of factors which includes size, rarity, conservation status and geographical distribution. Assigning a biodiversity value on a geographical scale is based on the above principles and geographical value is assigned to international, national/regional, county, district, parish/neighbourhood and site level only.

3.6.2 Geographical Range of Reference

Value Category	Site or Ecological Feature
International	All internationally important Sites or candidate/proposed Sites. Regularly occurring, nationally significant population of protected or internationally important species. A viable area of habitat type listed in Annex 1 of The Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole
National/ Regional	SSSIs and other nationally designated Sites. A viable area of a priority habitat identified in the UKBAP or an area of such habitat which are essential to maintain the viability of a larger area Regularly occurring, regionally or nationally significant population of European Protected Species or habitats

	Regularly occurring, locally significant population of a regionally or nationally important species.
County	County designated Sites (CWS) Other Sites with BAP priority habitats or species of appreciable value not included in the above. Regularly occurring, locally significant population of a County important species. Local Nature Reserves and other viable areas of key habitat identified in the County or LBAP.
District	Area of habitat identified in a District/Borough BAP and other natural or semi-natural Sites of significant biodiversity. Regularly occurring, locally significant population of a District/Borough important species during a critical stage of its life cycle.
Parish/Neighbourhood	Areas of habitat considered to appreciably enrich the local habitat resource within approximately 2km of the application site, parish or neighbourhood.
Site level only	Sites with limited biodiversity, providing some biodiversity enrichment at project site only.

- 3.6.3 The valuation, levels of geographical importance and significance have been determined following the guidance of the CIEEM in the *Ecological Impact Assessment in the UK 2018* (updated 2019) and the *Handbook of Biodiversity Methods. Survey, Evaluation and Monitoring 2005* and have been tabulated and appended to this report.
- 3.6.4 The baseline conditions of the application site have been determined for the year 2024.

4.0 Resulting Baseline Ecological Conditions & Evaluation

4.1 Designated Sites of Nature Conservation Importance

- 4.1.1 The application site is found not to be neither a statutory or non-statutory designated site of nature conservation importance.
- 4.1.2 There are no international or national designated sites within the 2km radius Zol around the application site. There are however, 15 non-statutory Local Wildlife Sites (LWSs) within the Zol, with Barkway House Area LWS (Ref 08/050) listed as 'Buildings or Environs important for protected species', approximately 200m south-west of the application site.

4.2 Habitats

- 4.2.1 The application site supports four semi-natural UKHab habitats; 81 – Ruderal/Ephemeral, 16 - Tall Forbs, h3d - Bramble Scrub and three Individual Urban Trees. In addition, the application site supports 847 - Introduced Shrubs as well as u1c- Artificial, Unsealed Surface, 510 - Bare Ground and u1b - Developed land, sealed surface.
- 4.2.2 Ruderal/ephemeral habitat dominates the majority of the application site divided into two areas; ruderal vegetation at the site entrance driveway and a second, larger area in the rear of the site. The ruderal/ephemeral vegetation at the site entrance is developing over an unsealed surface - compacted gravel and was found to be dominated by rye grass (*Lolium perenne*), red fescue (*Festuca rubra*), wall barley (*Hordeum murinum*), nipplewort (*Lapsana communis*) pineapple weed (*Matricaria discoidea*), herb Robert (*Geranium robertianum*), rosebay willowherb (*Chamerion angustifolium*) and black medick (*Medicago lupulina*).
- 4.2.3 Growing amongst the naturally developing ruderal/ephemeral vegetation are small relic patches of introduced shrubs - a result of past garden planting. In the rear of the application site, the ruderal/ephemeral vegetation appears to have naturally developed over recently cleared ground and is dominated by typical stress-tolerant plants such as common nettle (*Urtica dioica*), creeping thistle (*Cirsium arvense*), false oat-grass (*Arrhenatherum elatius*), smooth sow-

thistle (*Sonchus oleraceus*), bristly ox-tongue (*Picris echioides*) and smooth meadow grass (*Poa pratensis*).

- 4.2.4 Located in the eastern corner of the rear of the application site is an area of tall forbs dominated by common nettle, growing under the Individual Trees (T1, T2 & T3). Growing in the south-eastern corner of the site is a very small area of bramble (*Rubus fruticosus* agg.) scrub.



Plates 2 & 3: Two views of the ruderal/ephemeral and introduced shrubs at the application site entrance



Plates 4 & 5: Ruderal/ephemeral vegetation in the rear of the application site

- 4.2.5 The Statutory Small Sites Biodiversity Metric automatically allocates ruderal/ephemeral vegetation a Moderate condition score. The tall forb vegetation is also automatically assigned a Moderate condition score. The very small patch of bare ground is found amongst the ruderal/ephemeral vegetation, as a result of clearing and burning of brush. This small area is also automatically assigned a Moderate condition score by the Statutory Small Sites Biodiversity Metric. A condition assessment of the bramble scrub is not applicable under BNG guidelines.

- 4.2.6 Three large, mature trees - individual tree numbers T1, T2 and T3 are located in the eastern corner of the application site. Tree T1 is a non-native red oak (*Quercus rubra*), Tree T2 is an Atlas cedar (*Cedrus atlantica*) and Tree T3 is a redwood (*Sequoia sp.*).
- 4.2.7 All semi-natural habitats; ruderal/ephemeral, tall forbs and bramble scrub found within the application site are very common features associated with derelict or highly modified and disturbed ground, likely with high fertility. Such common habitats are not protected and are not deemed NERC Sect 41 Priority Habitats for Conservation. Within the application site, their intrinsic and geographical value as habitats is greatly limited by their commonality, limited value to wildlife and their very small area size and therefore they are considered to be of site level value only.
- 4.2.8 Any loss of these habitats resulting from redevelopment is not predicted to have a significant adverse impact on protected or important habitats.

4.3 **Protected & Priority Species**

Plants

- 4.3.1 The biological data search revealed a single important plant locally; crested cow-wheat (*Melampyreum cristatum*) which is a listed NERC Sect 41 Priority Species. This particularly important plant is typically found in woodland edges and on calcareous (chalky) soils, not the conditions found within the application site. Therefore it is considered highly unlikely that this important species would be extant within the application site.
- 4.3.2 As to the suitability of the application site to support protected or Priority Species, this is deemed highly unlikely. The site supports very common habitats, the gathered species list recorded very common species typically associated with the identified habitats and there were no important plants recorded on the site at this time. Consequently, it is concluded that the application site is thought to have a negligible value to important plants, at this time.

Invertebrates

- 4.3.3 The biological data search returned just eight important insects locally; five moths and three butterflies. Whilst all eight species are considered to be Priority Species, all are generalists; species found in a variety of geographical locations

and habitats such as grassland, wastelands and brownfield sites. The application site's ruderal/ephemeral habitat was found to be reasonably diverse and the BNG Condition Assessment found the habitat to support a *'varied structure providing opportunities for invertebrates to live, eat and breed'*. It also concluded that *'the habitat parcel contains different plant species for wildlife for example flowering species providing nectar sources for a range of invertebrates at different times of the year'*. However, the parcel of invertebrate habitat is very small, isolated from other areas of similar quality and diversity. Therefore, whilst it is acknowledged that the ruderal/ephemeral vegetation within the application site is of some value to insects, its unlikely to be of high value to important assemblages of invertebrates and is valued as of site level only.

Amphibians

- 4.3.4 Great crested newts (GCNs) are recorded locally; from three ponds off Church Lane, Barkway. These three ponds are however approximately 500m from the application site and it is highly unlikely that great crested newts would disperse into the application site from these ponds, because of the distance. GCNs typically inhabit terrestrial land within 200m of their natal ponds. There is a pond to the east of the application site but is not recorded as supporting GCNs. This pond is located approximately 100m from the application site, divided by a former horse-grazed pasture.
- 4.3.5 The application site supports no open water, with very limited amounts of what may be described as suitable GCN terrestrial habitat, therefore the application site's value to GCNs is considered to be negligible, at this time.

Reptiles

- 4.3.6 There are no records of reptiles within the ZOI in the last ten years however this is likely to be a case of under-recording rather than a complete lack of reptiles locally. The application site supports minimal potential reptile habitat - confined to the periphery where it joins the adjacent former horse pastures to the east of the site. The ruderal/ephemeral habitat appeared superficially to provide suitable habitat however an examination of the ground found the vegetation tall but sparse, lacking tussocks and the structural diversity needed to provide

shelter, foraging and feeding habitat for reptiles. Therefore the application site's value to reptiles is deemed to be negligible, at this time.

Birds

- 4.3.7 48 notably important birds are recorded locally, listed as either UKBAP, NERC Sect. 41 Priority or Red Data Book Species. Of the 48 species, few would be considered species likely to be found within a village/rear wild garden environment. Recorded species that may utilise the local environment around the application site include; song thrush (*Turdus philomelos*), house sparrow (*Passer domesticus*), spotted flycatcher (*Muscicapa striata*), tawny owl (*Strix aluco*), dunnock (*Prunella modularis*) and wood pigeon (*Columba palumbus*). However, the application site supports very little habitat suitable for feeding, foraging or nesting birds. These habitats are confined to the three trees, which do provide limited opportunities to both common and important birds. Considering the extensive amount of bird nesting habitat to the east of the application site, the value of the three trees of the application site for birds is considered to be of site Level only and are being retained anyway.

Bats

- 4.3.8 As discussed above, the former garage was found to support night and day roosts of three species of bat; common pipistrelle (*Pipistrellus pipistrellus*), brown long-eared (*Plecotus auritus*) and Natterer's (*Myotis nattereri*) bats. A Natural England low impact mitigation licence, registered by Mr Keith Seaman (the Registered Consultant), is in place, which has allowed the exclusion of the bats and destruction of the roosts, to be compensated for at a later date.
- 4.3.9 The three large trees – Trees T1, T2 and T3 all display Potential Roosting Features (PRFs) associated with climbing ivy (*Hedera helix*), rot holes, lifted bark, cracks and crevices. At this time, it is not known whether the PRFs are suitable or not for roosting bats - an off-ground inspection will be needed to establish their potential for roosting but is only necessary if any of the three trees are to be removed/worked on.
- 4.3.10 Whilst the trees will also provide some limited feeding and foraging potential for bats, previous surveys of the application site, alongside the former garage, found very limited bat activity within the application site and this was confined

to an area around the trees. Consequently, the application site is deemed to have site level value to the local bat population, at this time.

Badgers

- 4.3.11 Badgers are recorded locally however no indicative signs were found to indicate that badgers are utilising the application site and there are no badger setts within or immediately adjacent to the application site at this time. However, with a known local badger population, it cannot be precluded that badgers may utilise the application site at any time in the future.

Hedgehogs

- 4.3.12 Hedgehogs (*Erinaceus europaeus*) are not recorded locally however considering the wide-ranging (albeit under threat) nature of this Priority Species, it is likely that hedgehogs are extant within the ZOI around the application site. The application site, the adjacent rear gardens and former horse pasture, as well as the hedgerow and tree bases of the locality will provide feeding and foraging and likely hibernation habitat for this species. Nevertheless, with no local records and no indicative signs of hedgehog within the application site, it is assumed that this species is not currently extant within the site. However, for the local hedgehog population, the application site does support limited amounts of habitat and therefore does provide potentially site level value.

4.4 Results of Statutory Small Sites Biodiversity Metric On-Site Baseline Calculations

Site Habitat Baseline

Habitat Type	Area (m ²)	Habitat Condition	Habitat Units
Ruderal/Ephemeral	1,328	Moderate	0.55
Tall forbs	123	Moderate	0.05
Bare ground	10	Moderate	0.00
Developed land, sealed surface (59m ² retained)	59	N/A other	0.00
Bramble scrub	38	N/A other	0.02
Artificial unvegetated, unsealed surface	70	N/A other	0.00
Introduced shrub	10	N/A other	0.00
Urban tree (all retained)	1,099	-	1.0108
Totals	1,638 (without trees)		1.6324

4.4.1 There are currently no hedgerows on the application site.

5.0 Ecological Evaluation & Development Constraints

- 5.1.1 The application site was found to be very small, supporting a limited number of very small areas of common semi-natural habitats, often associated with neglect and dereliction.
- 5.1.2 The application site is neither a designated site of nature conservation importance nor is it predicted that its redevelopment would have a significant adverse impact on designated sites outside the application site boundary.
- 5.1.3 Ruderal/ephemeral habitat dominates the rear of the application site as a result of recent land clearance; plant species associated with this habitat type are very common and typical of these growing conditions. Tall forb vegetation, dominated by common nettle and a small patch of bramble are found around the periphery of the rear garden. These habitats are considered very common and typical of the growing conditions of the application site. None of these habitats are considered geographically important, provide limited enrichment at project site only and are not protected or Priority Habitats for Conservation. As such, the redevelopment of the application site is not considered likely to have a significant adverse effect on important habitats and therefore this is not a predicted redevelopment constraint.
- 5.1.4 With regard to the application site having importance for protected and Priority Species, sites supporting very limited and very common habitats are generally not pre-disposed to support such important species. It is acknowledged however that the site has some limited value to nesting birds, feeding and foraging bats and possibly hedgehogs and mitigation and compensatory measures will be necessary to ensure the maintenance of the favourable conservation status of these species at site level. However, it is not predicted that the redevelopment of the application site would have a significant adverse impact on protected or Priority Species and/or Habitats, at this time.

5.2 Mitigation & Compensation

Species of Potential Site Value at Project Site Level	Avoidance/Mitigation/Compensation	Timing
Nesting Birds	Avoidance of the removal of or work to any potential bird nesting habitat during the nesting season. Checks by suitably qualified ecologist for nesting birds, if habitat is removed or worked on during the nesting season.	March-August
Bats	Over and above the statutory compensatory requirements of the Mitigation Class Licence (low impact) currently in place for the former garage, additional bat roosting opportunities will be provided through the installation of three bat boxes on one of the retained trees. If any of the three trees are to be removed or worked on, they shall have a Potential bat Roosting Assessment (PBA) before removal or work which may require an off-ground climbing inspection by a licensed bat ecologist.	Anytime
Hedgehogs	As a precaution, all suitable habitat on site will be hand-searched for hedgehogs before construction starts and before the habitat is removed. Any hedgehogs found will be removed to a place of safety off-site, likely around the adjacent former horse paddock. Any hedgehogs found during hibernation by the ecologist will be checked for health and placed in suitable hibernation habitat off-site. Hedgehog highways through the application site should be encouraged with the installation of hedgehog 'pop-holes' at appropriate locations. A hedgehog box should also be included within the garden.	Any time before the removal of habitat

Nesting Birds

- 5.2.1 The Wildlife & Countryside Act 1981 (as amended), protects nesting birds whilst occupied and in the case of specially protected bird species, whilst building a nest.
- 5.2.2 If carried out between the bird nesting season (the months of March and August inclusive), any tree or scrub removal or pruning will only be carried out

once a suitably qualified and experienced Ecologist has checked the affected vegetation and deemed it free of an occupied nest or, in the case of specially protected bird species, a nest being built. Should the Ecologist confirm either a nest being built or a nest which is occupied within the affected area or within a close enough distance to likely be affected by the work, works will not be carried out on the affected area until the Ecologist has confirmed that the nest has been vacated naturally, following checks.

- 5.2.3 If work is being carried out outside the bird nesting season, then these mitigation measures do not apply.

5.3 Further Surveys

- 5.3.1 No further surveys are considered necessary at this time to inform this Ecological Appraisal.

5.4 Biodiversity Net Gain

- 5.4.1 As discussed above, NPPF requires that impacts on biodiversity are minimised and the development should result in a biodiversity net gain. The mitigation and compensatory measures discussed above will in part help minimise the impacts on biodiversity. To further minimise impacts on biodiversity, an avoidance strategy is proposed, to limit light spillage, general construction disturbance and the avoidance of tree root damage.

- 5.4.2 To provide biodiversity net gain, areas of wildflower meadow planting (other neutral grassland) and the planting of 20 new trees will be carried out along with the planting of approximately 100m of new native hedgerow around parts of the site's perimeter.

Habitats to be Created

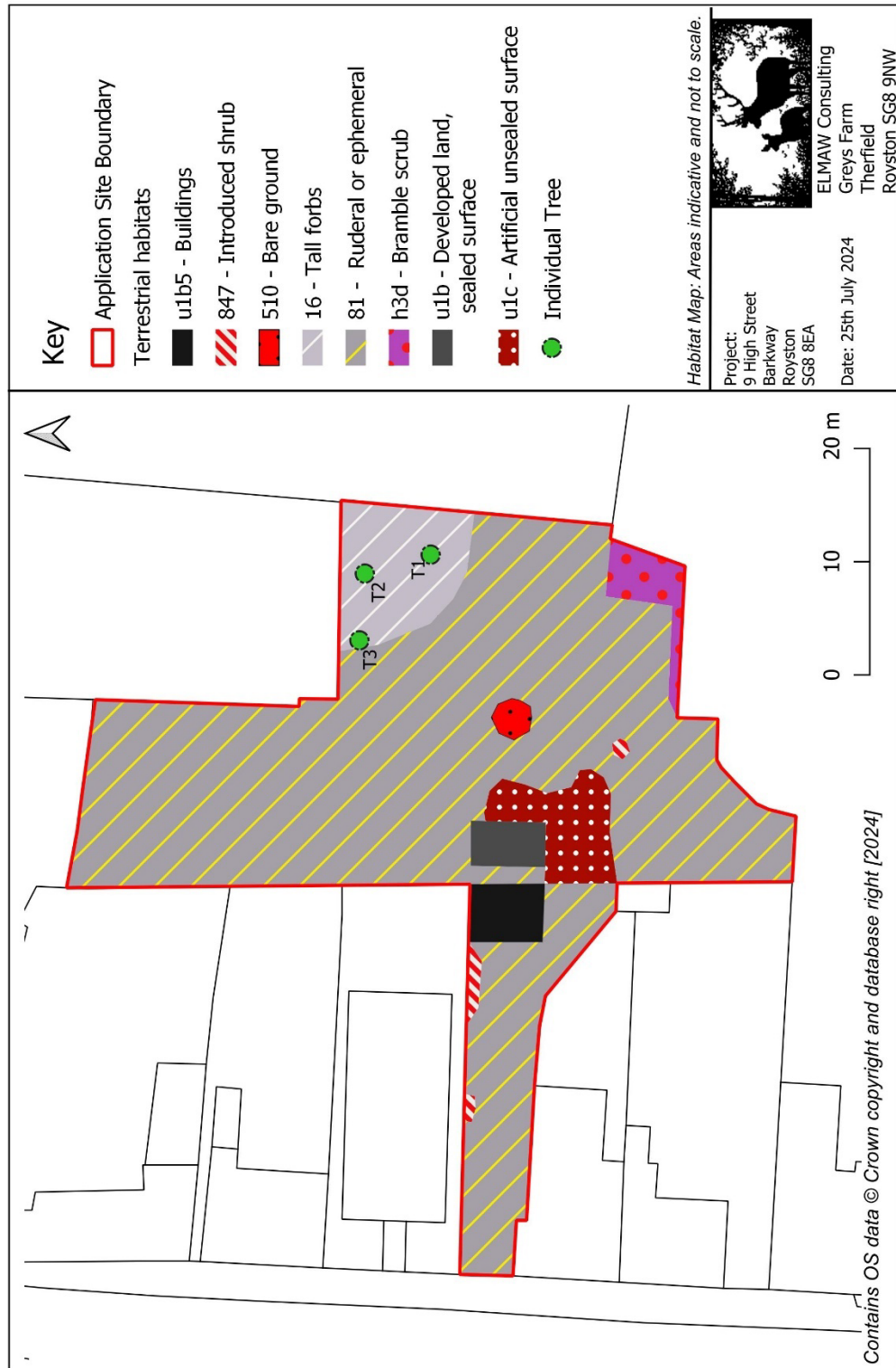
Habitat type	Area (m ²)	Habitat Units
Developed land, sealed surface	394	0.00
Vegetated garden	481	0.0928
Other neutral grassland	583	0.3903
Modified grassland	121	0.0420
Urban tree	813.89	0.2488
Totals (area excluding trees)	1,579	0.7739

- 5.4.1 These landscape proposals will achieve a +10.69% Biodiversity Net Gain in Habitat Units.
- 5.4.2 It is proposed to plant approximately 100m of new native hedgerows within the newly redeveloped site. This will represent a 100% increase in Hedgerow Habitats for the site as none exist currently.

6.0 References

- Ref. 1 Chartered Institute of Ecology and Environmental Management. 2017 *Guidelines for Preliminary Ecological Appraisal*
- Ref. 2 Chartered Institute of Ecology and Environmental Management. 2017 *Guidelines for Ecological Report Writing*
- Ref. 3 Joint Nature Conservation Committee. 2010. *Handbook for Phase 1 Habitat Survey* Revised re-print
- Ref. 4 UK Habitat Working Group (2018). *UK Habitat Classification*
- Ref. 5 Bat Conservation Trust. 2016. *Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd Edition*
- Ref. 6 Sewell D, Griffiths RA, Beebee TJC, Foster J and Wilkinson JW 2013 *Survey Protocols for the British Herpetofauna Version 1.0*
- Ref. 7 Rose F 2006 *The Wildflower Key* Fredrick Warne & Co.
- Ref. 8 Hubbard CE, 1992 *Grasses 3rd Edition* Penguin Books
- Ref. 9 CIEEM (2021). *Biodiversity Net Gain Report and Audit Templates* Chartered Institute of Ecology and Environmental Management, Winchester, UK.

7.0 Appendix 1 – Habitat Map



8.0 Appendix 2

8.1 Botanical Species List

Common Name	Latin Name
Trees and Shrubs	
Atlas cedar	<i>Cedrus atlantica</i>
Elder	<i>Sambucus nigra</i>
Holly	<i>Ilex aquifolium</i>
Red oak	<i>Quercus rubra</i>
Redwood	<i>Sequoioidae sp.</i>
Herbs	
Black medick	<i>Medicago lupulina</i>
Bramble	<i>Rubus fruticosus agg.</i>
Bristly oxtongue	<i>Helminthotheca echioides</i>
Butterbur	<i>Petasites hybridus</i>
Cleavers	<i>Galium aparine</i>
Common ragwort	<i>Senecio jacobaea</i>
Common teasel	<i>Dipsacus fullonum</i>
Creeping thistle	<i>Cirsium arvense</i>
Curled dock	<i>Rumex crispus</i>
Dandelion	<i>Taraxacum agg.</i>
Fat hen	<i>Chenopodium album</i>
Field bindweed	<i>Convolvulus arvensis</i>
Fool's parsley	<i>Aethusa cynapium</i>
Forget-me-not	<i>Myosotis scorpioides</i>
Green alkanet	<i>Pentaglottis sempevirens</i>
Herb Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Nipplewort	<i>Lapsana communis</i>
Opium poppy	<i>Papaver somniferum</i>
Pineappleweed	<i>Matricaria discoidea</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rosebay willowherb	<i>Chamerion angustifolium</i>
Selfheal	<i>Prunella vulgaris</i>
Sow thistle	<i>Sonchus oleraceus</i>
Spear thistle	<i>Cirsium vulgare</i>
Stinging nettle	<i>Urtica dioica</i>
White bryony	<i>Bryonia dioica</i>
White clover	<i>Trifolium repens</i>
Wood avens	<i>Geum urbanum</i>
Grasses/Sedges	
Annual meadow grass	<i>Poa annua</i>
Cock's-foot	<i>Dactylis glomerata</i>
False-oat grass	<i>Arrhenatherum elatius</i>
Meadow foxtail	<i>Alopecurus pratensis</i>

Perennial rye grass	<i>Lolium perenne</i>
Red fescue	<i>Festuca rubra</i>
Soft brome	<i>Bromus hordeaceus</i>
Smooth meadow grass	<i>Poa pratensis</i>
Wall barley	<i>Hordeum murinum</i>
Yorkshire fog	<i>Holcus lanatus</i>

9.0 Appendix 3

Statutory Small Sites Biodiversity Metric – Headline Results

Site Name		Land rear of 9, High Street, Barkway	
Sheet Name		Headline Results	
Headline Results			
Headline		BNG Targets Met ✓	
Trading Rules		Trading Rules Not Satisfied ▲	
Next steps		Scheme alterations or offsite units required	
If BNG targets cannot be reached on-site, the Main Biodiversity Metric should be used.			
Baseline Units	Habitat units	1.6124	
	Hedgerow units	Zero Units Baseline	
	Watercourse units	Zero Units Baseline	
Post-development Units	Habitat units	1.7848	
	Hedgerow units	0.3849	
	Watercourse units	0.0000	
Total net unit change	Habitat units	0.1723	✓
	Hedgerow units	0.3849	
	Watercourse units	0.0000	
Total net % change	Habitat units	10.69%	✓
	Hedgerow units	% target not appropriate	
	Watercourse units	% target not appropriate	
Habitats units required to meet target		0.0000	
Hedgerow units required to meet target		0.0000	
Watercourse units required to meet target		0.0000	