

Ecological Walkover and Biodiversity Net Gain Assessment Report

Site: Portion of land to South of Church Wood, Three Houses Lane,
Codicote, SG4 8TB

Report Number: BWE-BNG-CodicoteSG4 (Rev B)

Commissioned by: Warner Planning Ltd + D&A Engineering Ltd

Date: 22 April 2025



QUALITY STANDARDS CONTROL

The signatories below verify that this document has been prepared in accordance with our quality control requirements. These procedures do not affect the content and views expressed by the originator.

This document must only be treated as a draft unless it has been signed by the originators and approved by a director.

Revision: Rev B

Date: 22/04/2025

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The advice provided in this report is in accordance with the CIEEM Code of Professional Conduct. The opinions expressed are true and professional.

LIMITATIONS

This report is for the sole use of Warner Planning Ltd and D&A Engineering Ltd. The conclusions and recommendations contained in this report are based on information provided by others. The methodology and sources of information used in providing services are outlined in this report. The scope of this report and services are factually limited by the conditions encountered and the information available at the time of assessment.

The report sections below should be read in full and detailed guidance given in this report must be followed to avoid breaching legislation regarding protected and invasive species.

This report is valid for one year from the date of the survey visit. Should works be delayed to later than one year after the survey then a further update survey of the site would be required as habitats change over time, along with their potential to support protected species.

Executive Summary

An Ecological Walkover and a Biodiversity Net Gain (BNG) Assessment were conducted at portion of land south of Church Wood, Three Houses Lane, Codicote, Hertfordshire, SG4 8TA. The assessments included a desk study, an extended UK Habitat Classification (UKHab) survey, and a site-based walkover (within application boundary only) to assess potential ecological constraints and opportunities. Biodiversity Net Gain calculations were also undertaken. This report remains valid for one year from the survey date, after which an updated survey will be required.

Below is a summary of recommendations are made following the survey findings. Further details concerning the recommendations are given in the main body of the report.

Ecological Impact Assessment & Biodiversity Net Gain (BNG) Considerations

An Ecological Walkover and UKHab survey were undertaken on 18th February 2025 to assess the ecological baseline of the proposed development site, which spans approximately 18,592.70 m². The site is predominantly arable land (UKHab c1 – Arable and Horticulture), with existing buildings, access tracks, and hardstanding retained. The baseline biodiversity value is calculated at 3.10 habitat units.

No badger setts were identified within 30m, and further surveys are not required for reptiles, dormice, or other protected species. Although bat roosts are unlikely, a sensitive lighting strategy is recommended to avoid disturbance to commuting bats. Vegetation clearance should be timed outside the March–August nesting season or supervised by an ecologist. eDNA testing is advised for Great Crested Newts due to a nearby pond. Excavations should be covered overnight to prevent harm to small mammals, and deadwood should be retained to support invertebrates.

The site does not lie within or directly affect statutory or non-statutory designated sites; however, it borders Ancient and Priority Woodland designated as a Local Wildlife Site (LWS). An Ecological Construction Management Plan (ECMP) is recommended to ensure that mitigation and enhancement measures are fully implemented.

According to the revised Statutory Biodiversity Net Gain (BNG) Metric, the development will deliver a post-intervention gain of 0.45 habitat units—equating to a 14.5% uplift in on-site biodiversity value. This gain will be achieved through the creation of modified grassland and other neutral grassland, primarily in the south and east of the site, forming a valuable ecological buffer and enhancing connectivity to adjacent woodland habitats.

In conclusion, with the adoption of recommended mitigation measures, the development can proceed in line with national biodiversity policy and best practice standards.

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1. Introduction

Site description

The site is located at Church Wood, Three Houses Lane, Codicote, Hertfordshire, SG4 8TA. It is approximately 5.33 hectares in area and centred at OS Grid Reference TL21352051.

The site is an irregular-shaped parcel of land located in the village of Codicote in a valley in the Chiltern Hills, surrounded by open land with rural areas. Consists mainly of hardstanding agricultural yard with three modern sheds, bare ground, and is bordered by woodlands.

The site at Church Wood, Three Houses Lane, Codicote, has already undergone development, with existing barns, hardstanding areas, and storage facilities present. This report pertains to a new planning submission, seeking additional changes in form of access road and two equestrian structures, but it is important to note that the assessment covers only a portion of the site as seen in UKHab Post-development Plan. Specifically, it focuses on areas of arable field, excluding the entirety of the site from consideration. The proposed works do not encompass the full extent of the landholding, ensuring that certain existing features and ecological areas remain unaffected by this submission.

Local planning authority is North Hertfordshire Council.

Proposal: to construct an equestrian centre requiring extended access points from existing hardstanding areas



Figure 1: Overview of the site (Source: Google Earth, 2025)

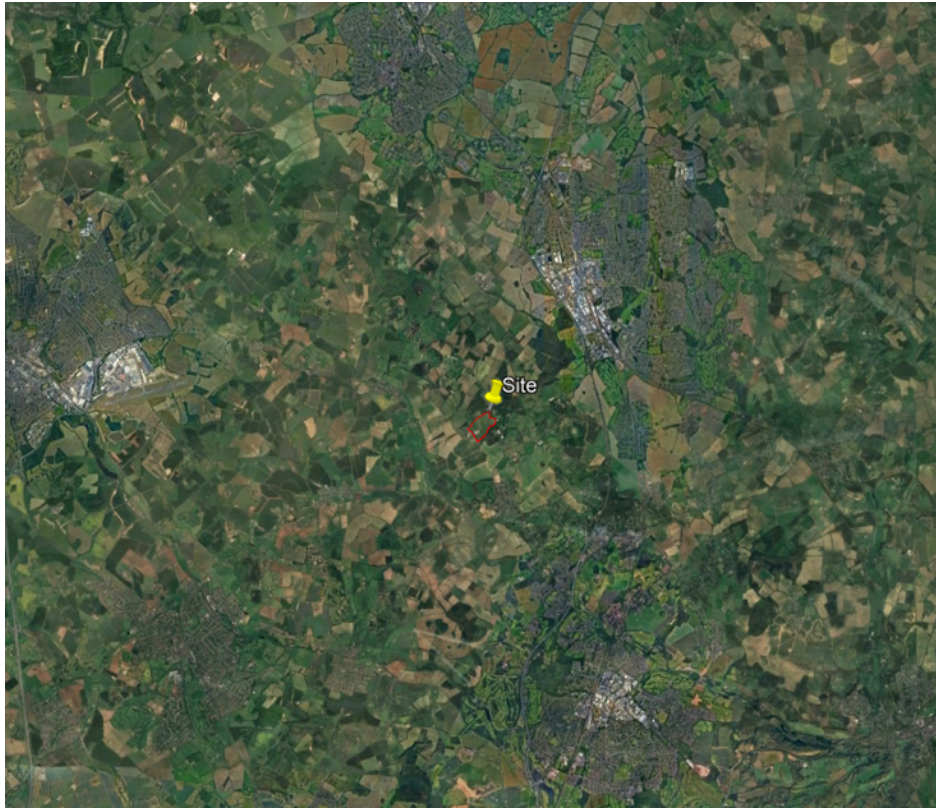


Figure 2: Overview of wider landscape (Source: Google Earth, 2025)



Plate 1: Overview of the current state of the site (February 2025)

2. Existing Baseline – Desk Study

Desk Study Results

A desk-based search shows that there are one sites with European or national statutory designation within 2km of the search area and no LNRs.

Site Name	Designation	Proximity to the site
Knebworth Woods	SSSI	900m NE

Table 1: Designations in proximity to the site

Nearby Non-Statutory Sites:

- Church Wood LWS (0.03km E) – Ancient woodland habitat. Portions of LWS are within the site ownership.
- Graffridge Wood LWS (0.11km N) – Mixed woodland with ancient and secondary woodland.
- Crouchgreen Woods LWS (0.02km W) – Ancient hornbeam woodland.

The Site is also within SSSI Impact Zone however due to small scale of the development; it is believed that no opposing impact will be caused to habitats and species associated with nearby SSSI and SAC sites.

The desk study showed nine (9) likely potential great crested newt breeding ponds within 250m of the site that were not separated from the site by major barriers to dispersal. Major barriers might include busy roads, walls, dense housing or similar. The nearest pond was within the site ownership boundary, close to the south-eastern boundary.

3. Field Survey Results

Survey Date

18/02/2025

Weather conditions during site visit

- Precipitation: None
- Temperature: 9°C
- Cloud cover: 50%
- Wind (Beaufort Scale): 1

Constraints to surveying

No limitations were experienced on the day of the survey.

Extended Phase I Survey / UK HABs Survey

All habitats identified on site are described below together with a preliminary assessment of the potential to support species of conservation value and presence of invasive species.

Habitat Descriptions

c1 Cropland / UK HABs: The proposed development site is currently classified as cropland, historically used for cereal crop production, as evidenced by satellite imagery analysis. Remote sensing data indicates that the land has been actively cultivated for an extended period, with visible patterns characteristic of arable farming, such as plough lines.

u1b5 Buildings / UK HABs:

u1b: developed land: sealed surface and u1e: built linear features (access tracks)/ UK HABs:



Overview of the site



Access Track leading to buildings



Access from site to Three House Lane



BNG application area



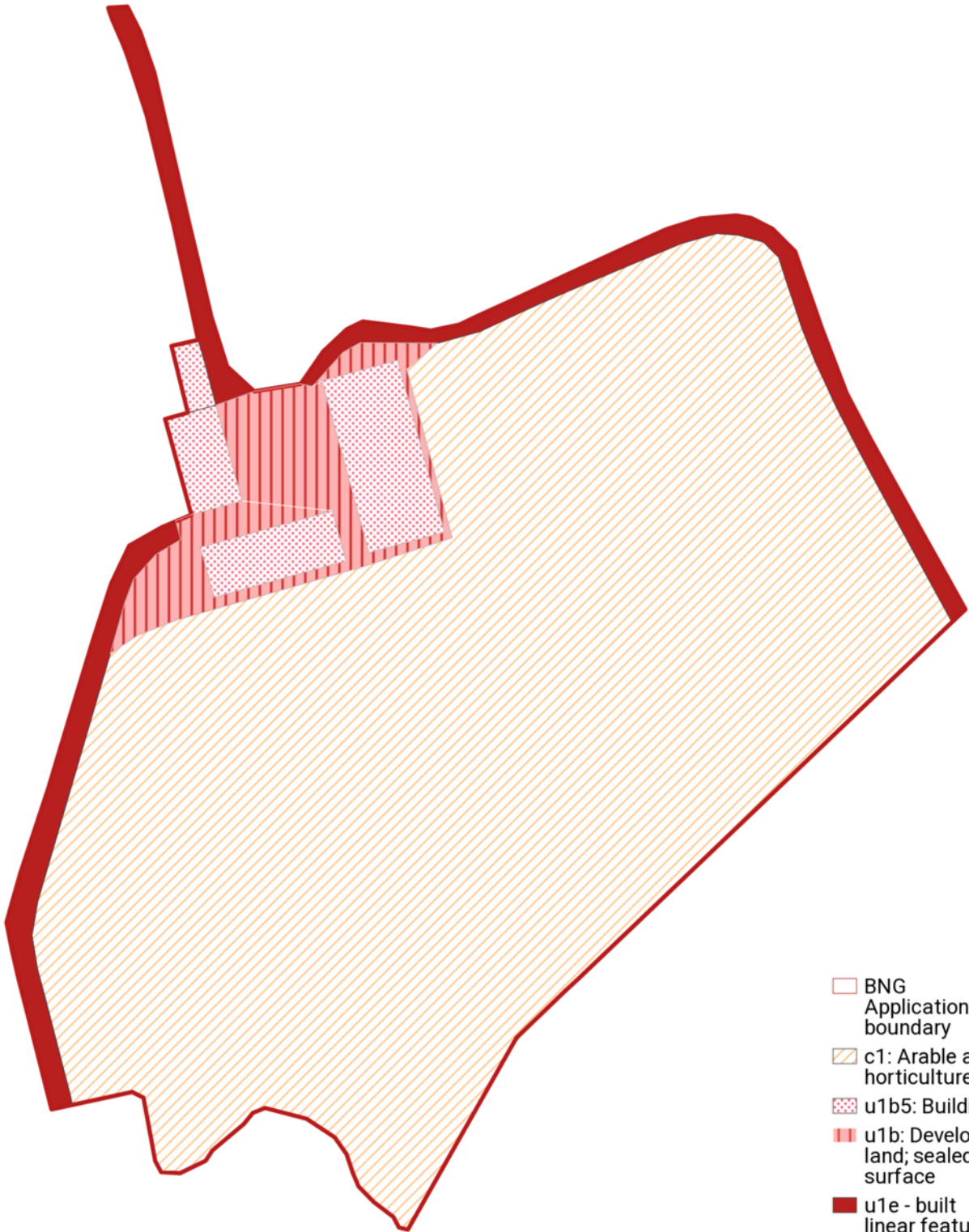
Habitat impacted by the proposed development



Pond within close proximity to the proposed works boundary (off site)



Portions of LWS within the site ownership boundary (off-site)



- BNG Application boundary
- c1: Arable and horticulture
- u1b5: Buildings
- u1b: Developed land; sealed surface
- u1e - built linear features

Site: Access and land
south of Church Wood,
Three Houses lane,
Codicote, SG4 8TB

4. Impact Assessment

Statutory and Non-statutory Sites

Extending the search with DEFRA's MAGIC Maps, one known statutory site lies within 2 km, namely Knebworth Woods. Given the small scale of the development known, no indirect or direct impacts are anticipated from the site proposals.

Nearby Non-Statutory Sites include Church Wood LWS (0.03km E) – Ancient woodland habitat, Graffridge Wood LWS (0.11km N) – Mixed woodland with ancient and secondary woodland, and Crouchgreen Woods LWS (0.02km W) – Ancient hornbeam woodland. All are designated as Local Wildlife Sites (LWS). Impacts from developments have impacted portions of The Church Wood LWS within the site ownership. It is therefore strongly advised that CEMP is implemented during the construction phase to limit further damage.

Construction works must ensure pollution prevention measures and ensure that no debris, materials, spills, or soils enter either indirectly during the construction phase. Use of a robust CEMP during the construction phase will ensure to reduce and avoid any indirect or direct impacts to the SSSI and Local Wildlife Sites.

Protected Habitats

No habitats of principle importance under the Natural Environment and Rural Community Act 2006 (NERC Act) were identified within BNG application boundary. All habitats are common and widespread in the UK.

Protected Species

Plants

All plant species recorded on site are common and widespread, and it is considered that no rare or threatened plant species are present on site.

No invasive plant species was recorded on-site.

Bats

All bat species are legally protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended) and Regulation 43 of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019), making bats a material consideration in the planning process.

The record search from Magic Map, returned no bat records within a 2km search area. The BNG application site lacked mature trees with suitable features for use by roosting bats. No direct or indirect impacts to onsite roosting opportunities are anticipated from the proposals.

The BNG site application is considered to contain 'low' quality foraging habitat, with more suitable habitat in the wider area therefore given, it is likely that the local and wider landscape supports a variety of common spread species.

New roosting opportunities can be created by adding bat boxes onto the new proposed building. To be sited away from lighting.

The proposals must incorporate an appropriately designed landscaping scheme, which will provide greater benefits for traversing and foraging bats compared to the lighting scheme.

The landscaping measures will enhance habitat connectivity, offering improved foraging opportunities and shelter. Along with the measures proposed, it is unlikely that the development will adversely affect local bat populations.

Birds

Under the Wildlife and Countryside Act (1981) as amended all birds' nests are protected from destruction – deliberate or otherwise. The site is dominated by short amenity grassland that is likely to support breeding birds. The non-native hedgerows, vegetated garden and evergreen trees may support birds' nests therefore any vegetation clearance must be undertaken outside the bird nesting season

Proposals should include the placement of bird boxes and house sparrow terraces on the new built building. Any plantings should be included, such as new hedgerows, to facilitate new nesting opportunities. Any plantings should also consider the use of berry or fruit bearing species.

Badgers

Badgers are legally protected under The Protection of Badgers Act 1992 making it a criminal offence to:

- Wilfully kill, injure, or take any badger;
- Possess or cruelly ill-treat a badger;
- Possess any dead badger or part of one;
- Possess or control a living, healthy badger;
- Intentionally or recklessly damage, destroy or obstruct access to a sett, or disturb a badger whilst it is occupying a sett

No badger setts were identified during the survey; however it is possible that they are present in the local area.

During works it is recommended that any excavations or pits are left covered over night or a means of escape (such as ramps) provided.

Reptiles

All reptiles are protected from intention or unintentional harm or killing under Schedule 5 of the Wildlife and Countryside Act (1981) as amended. Two species: smooth snake and sand lizard are European protected species under the Conservation of Habitats and Species Regulations (amendment (EU Exit) Regulations 2019) alongside GCN.

The grassland that are to be impacted is well maintained with a short sward height unsuitable for reptiles.

A toolbox talk is recommended before works commence and if reptiles are found to be present during works, an ecologist's advice is sought.

Hedgehogs

Hedgehogs are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and are listed as a species of principle importance for biodiversity conservation in the Section 41 list of the NERC Act (2006).

It is possible hedgehogs are present in the wider area and so any open excavations or trenches should be covered at night or a means of escape such as a ramp provided.

New habitats created are likely to benefit this species, and boundary fencing should allow movement in and out of the site.

Great Crested Newts

Within the site ownership boundary, one pond was recorded. The desk study showed nine (9) likely potential great crested newt breeding ponds within 250m of the site that were not separated from the site by major barriers to dispersal. Major barriers might include busy roads, walls, dense housing or similar.

The nearest pond is within close proximity, given the limited habitat that the existing modified grassland and the damage already caused to this habitat, it is to provide limited opportunities however it is advised that eDNA surveys are undertaken to determine presence or likely absence. Given the ecological sensitivity of the area, it is advisable to consult the North Hertfordshire District Council's planning department or Natural England for detailed information regarding any required licences or surveys related to Great Crested Newts for this development.

Invertebrates

The site supports common and widespread habitats that are unlikely to support rare invertebrate assemblages. Habitats such as standing dead wood are more likely to support rare invertebrates.

New plantings within the proposals should include flowering plants suitable for pollinators and include both day and night scented flowers.

Other Species

The site has limited to no linkages to the woodland populations by hedgerow links and it is not considered that the site hosts this species. It is considered unlikely that a population is on site and no further requirements are recommended.

5. Biodiversity Net Gain Assessment

Existing Baseline:

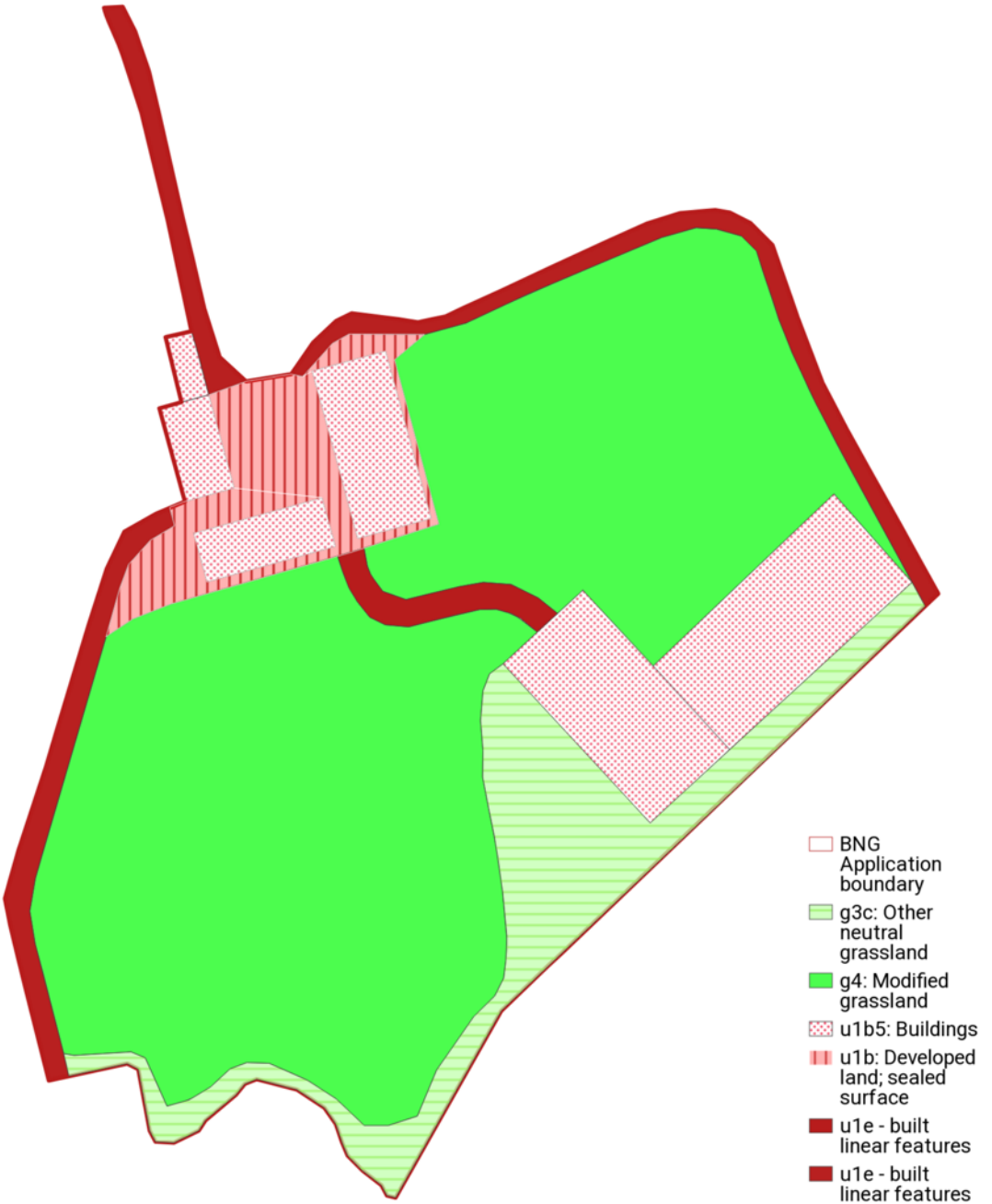
- **Total Site Area:** 18592.70 m²
- **Trees:** No existing trees on site.

UKHab Habitat - Pre-development Baseline	Area (sq m)	Value lost (Biodiversity Units)
C1; Arable and horticulture	15520.82	3.10
Built linear features	0.119249	0
Developed land: sealed surface	0.187644	0

Condition Assessment Criteria – Arable and horticulture habitat condition assessment not required

Biodiversity Unit	Pre-Development	Post-Development	Habitat unit delivered
Hardstanding (buildings/structures)	0.0	0.178453 (ha)	0
Non-cereal crops	1.155208 (ha)	0	0
Modified grassland	0	1.1561 (ha)	2.23
Other neutral grassland	0	0.19764 (ha)	1.32
Built linear features (additional access track)	0	0.022186 (ha)	0

The post-development plan involves the creation of modified grassland across much of the site, with areas of other neutral grassland introduced to the south and east. These new grassland habitats will form a buffer between the proposed development and the existing woodland, enhancing ecological connectivity. This approach is intended to compensate for the loss of cropland and provide a measurable uplift in biodiversity value, contributing positively to the overall biodiversity net gain for the site.



Site: Access and land so
pf Church Wood, Three
Houses Lane, Codicote,
SG4 8TB

Church Wood, Three Houses Lane, Codicote, Hertfordshire

Headline Results

Scroll down for final results E

Return to results menu

On-site baseline	Habitat units	3.10	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	3.55	
	Hedgerow units	0.00	
	Watercourse units	0.00	
On-site net change (units & percentage)	Habitat units	0.45	14.50%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Off-site baseline	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Off-site net change (units & percentage)	Habitat units	0.00	0.00%
	Hedgerow units	0.00	0.00%
	Watercourse units	0.00	0.00%
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.45	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Spatial risk multiplier (SRM) deductions	Habitat units	0.00	
	Hedgerow units	0.00	
	Watercourse units	0.00	
FINAL RESULTS			
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.45	
	Hedgerow units	0.00	
	Watercourse units	0.00	
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	14.50%	
	Hedgerow units	0.00%	
	Watercourse units	0.00%	
Trading rules satisfied?	Yes ✓		

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	3.10	3.41	0.00
Hedgerow units	10.00%	0.00	0.00	0.00
Watercourse units	10.00%	0.00	0.00	0.00

No additional area habitat units required to meet target ✓
No additional hedgerow units required to meet target ✓
No additional watercourse units required to meet target ✓

The Biodiversity Net Gain (BNG) metric summary confirms a successful on-site uplift. The baseline habitat units were 3.10, increasing to 3.55 post-development, resulting in a net gain of 0.45 units—equating to a 14.5% increase. No off-site units were used, and the Spatial Risk Multiplier had no impact, confirming that all enhancements are local and effective. All trading rules are satisfied.

The proposed habitats will complement and add ecological value to the existing woodland by improving habitat connectivity across the site. In particular, the introduction of neutral and modified grassland will act as transitional habitats that support species movement and enhance the ecological resilience of the surrounding landscape.

6. Summary

An Ecological Walkover was conducted to assess the site's baseline ecological value and identify constraints or opportunities for biodiversity. This included a desk study and an extended UK Habitat Classification (UKHab) survey, undertaken on 18th February 2025. The Biodiversity Net Gain (BNG) baseline results are provided in this report, with no additional ecological assessments beyond the baseline.

Key Findings & Recommendations

The proposed development site spans approximately 18592.70 m² and is primarily consisted of arable land: UKHab c1 – Arable and Horticulture. The access tracks, existing buildings and developed land (paving) will be retained as is. The ecological baseline is 3.10 habitat units.

Ecological surveys have been conducted, and no badger setts were identified within a 30m boundary survey; therefore, no further surveys are required. Bat roosts are unlikely to be present, but a sensitive lighting strategy should be implemented to prevent disturbance to commuting and foraging bats. Nesting birds may use introduced shrubs for shelter and foraging, so any vegetation clearance should be conducted outside the March–August nesting season or inspected by an ecologist. Dormice, reptiles, and other protected species do not require further surveys, but eDNA testing is recommended for Great Crested Newts (GCN) due to a nearby pond (located outside of BNG application boundary). Given the ecological sensitivity of the area, consultation with North Hertfordshire District Council and Natural England is advised regarding potential licensing requirements. Additionally, excavations should be covered overnight to prevent small mammals from becoming trapped, and deadwood should remain undisturbed to support invertebrate habitats.

The development is likely to impact no statutory designated and non-statutory sites, so an Ecological Construction Management Plan (ECMP) is recommended to ensure mitigation measures are implemented. The site also contains Ancient and Priority Woodland, designated as a Local Wildlife Site (LWS), meaning efforts should be made to minimise impacts and enhance connectivity to surrounding habitats.

According to the revised Statutory BNG Metric assessment, the development now delivers a post-intervention gain of 0.45 habitat units, resulting in a 14.5% uplift in on-site biodiversity value. This gain is achieved through the creation of modified grassland and other neutral grassland, particularly to the south and east of the site. These proposed habitats will add ecological value by acting as a buffer and improving connectivity to the adjacent woodland, thereby enhancing the ecology on site.

Conclusion

With appropriate implementation of the Ecological Construction Management Plan and ongoing consultation with relevant authorities, the development can proceed in alignment with current best practice and biodiversity policy objectives.

The revised Statutory BNG Metric assessment confirms a 0.45 habitat unit gain, equating to a 14.5% increase in on-site biodiversity. This uplift is achieved through the creation of modified and neutral grassland, enhancing habitat connectivity and providing a buffer to the adjacent woodland.

Report Validity

This report is valid for one year from the survey date. If works are delayed beyond this period, a new ecological survey will be required to account for potential habitat and species changes.

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Appendix A: Methodology

Preliminary Ecological Appraisal

The methods outlined in the CIEEM Guidance for Preliminary Ecological Appraisals (2017) were used for this survey. The field survey comprised of an extended Phase 1 survey (JNCC, 2010) and UK Habitat (UK HAB) survey of the site. This is a standard technique for obtaining baseline ecological information for areas of land, including proposed development sites.

Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support legally protected species, other species of conservation concern and any listed species of principal importance under the NERC Act (2006). When appraising the overall potential of protected species during the survey, the habitat(s) on site were assessed as present, high, moderate, low, and negligible.

Invasive species listed under Schedule 9 of the Wildlife and Countryside Act (1981 as amended) were searched for and locations recorded.

Desktop Study

Bee.Wise.Eco Limited undertook a basic internet-based search of statutory designated sites within 2km of the site using the Natural England/DEFRA web-based MAGIC database (www.MAGIC.gov.uk) for MAGIC.

Ordnance survey maps and aerial images of the site were examined online using bing.com/maps and maps.google.co.uk.

Zone of Influence (Zol)

The Zol is used to assess any potential direct and indirect impacts or risks to the site and the immediate surrounding habitats. The Zol is also used to determine the feasibility for enhancements for the site and within the surrounding areas/habitats. The Zol is based on the following: the site itself, the areas directly adjacent to the site and areas up to 1km outside of the site including statutory and non-statutory designated sites. The Zol looks for potential impacts to habitats and species with possible connectivity to the site itself.

Preliminary Ground Level Tree Roost Assessment

The surveys were carried out by Rita Smoldareva (Bat Licence number upon request), an experienced ecologist who has held a level 1 bat licence for 2.5 years, worked on numerous projects related to bats and regularly undertakes roost assessments for planning. The survey followed the guidance set out in the Bat Conservation Trust' Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edition (Collins, 2023). The trees were assessed as either negligible, low, moderate, high, or confirmed, refer to table 1 below. The tree inspections were carried out during the sub-optimal period for surveying as the trees have foliage.

Table A: Roost Classification, adapted from Collins (2023)

Suitability	Description
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.
Moderate	A structure with one or more potential roost sites that could be used by bats, but unlikely to support a roost of high conservation status.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).
Negligible	Negligible habitat features on site likely to be used by roosting bats.

Appendix B: BNG Methodology

Baseline Habitat Assessment

The baseline habitat data for the site was derived from the field survey conducted in accordance with the UK Habitat Classification System (UKHab). This included habitat mapping, condition assessments, and potential ecological constraints identified on-site.

The Statutory Biodiversity Metric, developed by Natural England, was used to quantify the baseline biodiversity value in biodiversity units (BU). The metric distinguishes between non-linear habitats (e.g., grassland, woodland) and linear habitats (e.g., hedgerows), each assessed separately based on area (ha) or length (km).

Each habitat was assigned scores based on the following criteria:

- **Distinctiveness** – Automatically assigned based on habitat type. Higher diversity habitats (e.g., ancient woodland) score highly, while modified or artificial habitats (e.g., sealed surfaces) score lower.
- **Condition** – Assessed using the Statutory Metric 4.0 Technical Supplement (Crosher et al., 2023). Habitat condition scores influence their biodiversity value.
- **Connectivity** – A default low connectivity score applies unless the habitat qualifies as high or very high distinctiveness.
- **Strategic Significance** – Assigned based on alignment with local policies, conservation strategies, or designated biodiversity areas.

BNG Calculation and Net Gain Requirements

To achieve compliance with the Environment Act 2021, developments must deliver at least a 10% net gain in biodiversity using a metric-based approach. The following steps were applied to assess net gain potential:

1. **Existing Baseline Calculation** – The site's current biodiversity value was determined using UKHab classifications and the Statutory Biodiversity Metric.
2. **Post-Development Habitat Projections** – The proposed site layout was overlaid on the baseline to determine habitat loss, retention, and enhancement opportunities.
3. **BNG Offset Considerations** – Given the small scale of the site, it is anticipated that some offsite biodiversity units may be required to meet the 10% net gain threshold. The developer will work with the Local Planning Authority (LPA) and accredited BNG providers to secure offsite biodiversity units where necessary.
4. **Risk Factors & Temporal Adjustments** – Risk multipliers were applied for habitat creation/restoration, accounting for time delays, difficulty of habitat establishment, and maintenance commitments.

BNG Compliance and Reporting

- The developer will submit a full BNG plan upon planning permission approval, detailing on-site and offsite biodiversity measures.
- Mitigation Hierarchy Compliance – The proposed development aligns with the mitigation hierarchy, prioritizing avoidance, minimisation, and on-site enhancements before considering offsite offsetting.
- Long-Term Management & Monitoring – A 30-year management and monitoring plan will be developed in line with Natural England's BNG guidance and Local Council's biodiversity strategy.

Limitations of the Biodiversity Metric

While the Statutory Biodiversity Metric provides a standardized approach, it does not replace the need for professional ecological assessment and mitigation planning. The following limitations apply:

- It is a proxy for biodiversity value, not an absolute measure of ecological importance.
- Protected species considerations remain subject to legal obligations outside the metric calculations.
- Irreplaceable habitats (e.g., ancient woodlands) require separate assessment and bespoke mitigation strategies.

This BNG methodology forms the basis for biodiversity calculations and compliance, ensuring that the proposed development aligns with both national and local biodiversity objectives.

Appendix C: Legislation and Planning Policy

This section provides an overview of legislation and national and local planning policies that are relevant to the site and are considered as part of the constraints and opportunities analysis for potential future development of the site. Any future development should this be sought in the future, this will need to demonstrate how it aligns to biodiversity legislation as well as supporting national and local policy ambitions for biodiversity and specifically identified species.

International legislation

- United Nations Convention on Biological Diversity (1992);
- The Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar Convention); and,
- European Council Directive 2009/147/EC on the Conservation of Wild Birds (the Birds Directive).

National legislation

Conservation of Habitats and Species Regulations 2019 (as amended)

All bats and their breeding sites or resting places (roosts) are protected under the Conservation of Habitats and Species Regulations 2019 (as amended) and the Wildlife and Countryside Act 1981 (as amended). The deliberate capture, disturbance, injury or killing of bats is prohibited, as is damaging, destroying or obstructing access to any place used by bats for shelter or breeding, whether they are present or not. Reckless disturbance or obstruction of access to a roost are also criminal offences.

Wildlife & Countryside Act (WCA) (1981 as amended)

The Wildlife and Countryside Act 1981 as amended provides for the legal protection of wild birds. All nesting birds including their nests, eggs and young are protected from killing, injury, taking or selling with additional protection for species listed on Schedule 1. For these species, adult birds and their young are protected from intentional or reckless disturbance while at or near the nest.

Natural Environment & Rural Communities (NERC) Act (2006)

Section 40 of the Natural Environment and Rural Communities Act (NERC) Act 2006, also known as the biodiversity duty, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. A list of habitats and species of principal importance in England, drawn up under section 41, is used to guide local and regional authorities in implementing their biodiversity duty.

The Environment Act 2021

In 2021 the Environment Act gained Royal Assent, providing a new legislative framework for developments to consider in respect of potential environmental impacts and opportunities. Within the Environment Act there is a call for all developments to deliver a 10% net gain for biodiversity using a measured approved metric approach. This is due to become mandatory from January 2024 in England.

Other relevant national legislation:

- Countryside and Rights of Way (CROW) Act (2000);
- Protection of Badgers Act (1992); and,
- Hedgerows Regulations (1997).

National Planning Policy Framework (NPPF) (MHCLG, 2023)

The revised National Planning Policy Framework (NPPF), updated in February 2019 and revised July 2021 and September 2023, sets out the Government's planning policies for England and how these should be applied. The revised NPPF continues to stress the importance of the local authority contribution to improving and protecting the environment through development of a systematic approach to enhancing biodiversity, minimising waste and pollution, and mitigation/adaptation to climate change impacts. Chapter 15 requires that local planning authorities, when considering planning applications, should aim to conserve and enhance biodiversity. This is underpinned by Planning Practice Guidance 2014 (MHCLG, revised 2019) which suggests:

The NPPF is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution;

Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include habitat restoration, re-creation and expansion; improved links between existing sites; buffering of existing important sites; new biodiversity features within development; and securing management for long term enhancement. New or improved habitat needs to be located where it can best contribute to local, national and international biodiversity restoration.;

Where a development cannot satisfy the requirements of the 'mitigation hierarchy', planning permission should be refused as per paragraph 180 of the NPPF; and

Sufficient green infrastructure should be designed into a development to make the proposal sustainable. High-quality networks of multifunctional green infrastructure contribute a range of benefits, including ecological connectivity, facilitating biodiversity net gain and nature recovery networks and opportunities for communities to undertake conservation work.

Appendix D: Wildlife-Friendly Plant Species Lists

Wildlife Friendly Trees

No.	Common Name	Scientific Name
1	Field Maple	<i>Acer campestre</i>
2	Norway Maple	<i>Acer platanoides</i>
3	Sycamore	<i>Acer pseudoplatanus</i>
4	Sugar Maple	<i>Acer saccharum</i>
5	Horse Chestnut	<i>Aesculus hippocastnum</i>
6	Judas Tree	<i>Cercis siliquastrum</i>
7	Hawthorn	<i>Crataegus monogyna</i>
8	Holly	<i>Ilex aquifolium</i>
9	Siberian Crab	<i>Malus baccata</i>
10	Apple	<i>Malus domestica</i>
11	Japanese Crab	<i>Malus floribunda</i>
12	Hupeh Crab	<i>Malus hupehensis</i>
13	Sargent's Crab Apple	<i>Malus sargentii</i>
14	Medlar	<i>Malus germanica</i>
15	Wild & Edible Cherries	<i>Prunus avium</i>
16	Wild & Edible Plums	<i>Prunus domestica</i>
17	Almond	<i>Prunus dulcis</i>
18	Damson	<i>Prunus insititia</i>
19	Japanese Apricot	<i>Prunus mume</i>
20	Bird Cherry	<i>Prunus padus</i>
21	Flowering Cherry	<i>Prunus pendula f. ascendens 'Rosea'</i>
22	Peach	<i>Prunus persica</i>
23	Pear	<i>Pyrus communis</i>
24	Goat Willow	<i>Salix caprea</i>
25	Common Whitebeam	<i>Sorbus aria</i>
26	Mountain Ash/Rowan	<i>Sorbus aucuparia</i>
27	Common Lime	<i>Tilia × europaea</i>
28	Broad-leaved Lime	<i>Tilia platyphyllos</i>
29	Spanish Traveller's Joy	<i>Clematis cirrhosa</i>
30	Tree Ivy	<i>Fatschedera lizei</i>
31	Honeysuckle	<i>Lonicera × purpusii</i>
32	Oregon Grape	<i>Mahonia spp</i>

Species-Rich Hedgerows

No.	Common Name	Scientific Name
1	Alder Buckthorn	<i>Rhamnus frangula</i>
2	Ash	<i>Fraxinus excelsior</i>
3	Beech	<i>Fagus sylvatica</i>
4	Blackthorn	<i>Prunus spinosa</i>
5	Bramble	<i>Rubus fruticosus</i>
6	Clematis / Old Man's Beard*	<i>Clematis vitalba</i>
7	Common Buckthorn	<i>Rhamnus cathartica</i>
8	Crab Apple	<i>Malus sylvestris</i>
9	Dog Rose	<i>Rosa canina</i>
10	Dogwood	<i>Cornus sanguinea</i>
11	Elder	<i>Sambucus nigra</i>
12	English Elm	<i>Ulmus minor</i> <i>Atinia</i>
13	Field Elm	<i>Ulmus procera</i>
14	Field Maple	<i>Acer campestre</i>
15	Goat Willow	<i>Salix caprea</i>
16	Gorse	<i>Ulex europaeus</i>
17	Grey Willow	<i>Salix cinerea</i>
18	Guelder Rose	<i>Viburnum opulus</i>
19	Hawthorn	<i>Crataegus monogyna</i>
20	Hazel	<i>Corylus avellana</i>
21	Holly	<i>Ilex aquifolium</i>
22	Honeysuckle*	<i>Lonicera periclymenum</i>
23	Hornbeam	<i>Carpinus betulus</i>
24	Ivy*	<i>Hedera helix</i>
25	Sea Buckthorn	<i>Hippophae rhamnoides</i>
26	Spindle	<i>Euonymus europaeus</i>
27	Wayfaring Tree	<i>Viburnum lantana</i>
28	White Bryony*	<i>Bryonia alba</i>
29	Wild Plum / Damson	<i>Prunus domestica</i> subsp. <i>insititia</i>
30	Wild Privet	<i>Ligustrum vulgare</i>
31	Yew	<i>Taxus baccata</i>

* Indicates climbers that commonly grow in hedgerows, increasing their biodiversity value.

Wildlife Friendly Shrubs

No.	Common Name	Scientific Name
1	Alder Buckthorn	<i>Rhamnus frangula</i>
2	Bell Heather	<i>Erica cinerea</i>
3	Blackthorn	<i>Prunus spinosa</i>
4	Box	<i>Buxus sempervirens</i>
5	Bramble / Blackberry (thornless varieties)	<i>Rubus fruticosus</i>
6	Briar Rose	<i>Rosa rubiginosa</i>
7	Butcher's Broom	<i>Ruscus aculeatus</i>
8	Common / Purging Buckthorn	<i>Rhamnus cathartica</i>
9	Common Broom	<i>Cytisus scoparius</i>
10	Dog Rose	<i>Rosa canina</i>
11	Dogwood	<i>Cornus sanguinea</i>
12	Elder	<i>Sambucus nigra</i>
13	Goat Willow	<i>Salix caprea</i>
14	Gorse	<i>Ulex europaeus</i>
15	Grey Willow	<i>Salix cinerea</i>
16	Guelder Rose	<i>Viburnum opulus</i>
17	Hawthorn	<i>Crataegus monogyna</i>
18	Hazel	<i>Corylus avellana</i>
19	Holly	<i>Ilex aquifolium</i>
20	Juniper	<i>Juniperus communis</i>
21	Ling Heather	<i>Calluna vulgaris</i>
22	Mezereon	<i>Daphne mezereum</i>
23	Raspberry	<i>Rubus idaeus</i>
24	Redcurrant	<i>Ribes rubrum</i>
25	Shrubby Cinquefoil	<i>Dasiphora fruticosa</i>
26	Spindle	<i>Euonymus europaeus</i>
27	Spiny Restharrow	<i>Ononis spinosa</i>
28	Spurge Laurel	<i>Daphne laureola</i>
29	Tutsan	<i>Hypericum androsaemum</i>
30	Wayfaring Tree	<i>Viburnum lantana</i>
31	Wild Privet	<i>Ligustrum vulgare</i>
32	Yew	<i>Taxus baccata</i>

Wildlife Friendly Shrubs & Climbers

No.	Common Name	Scientific Name	No.	Common Name	Scientific Name	No.	Common Name	Scientific Name
1	Primrose	<i>Primula vulgaris</i>	31	Musk Willow	<i>Salix aegyptiaca</i>	61	Ligustrum ovalifolium	<i>Garden privet</i>
2	Autumn Catchfly	<i>Silene schafta</i>	32	Sweet Box	<i>Sarcococca confusa</i>	62	Russian Sage	<i>Perovskia atriplicifolia</i>
3	Lamb's Ear	<i>Stachys byzantina</i>	33	Laurustinus	<i>Viburnum tinus</i>	63	Sage	<i>Phlomis spp</i>
4	Salvia	<i>Teucrium chamaedrys</i>	34	Japanese Barberry	<i>Berberis darwinii</i>	64	Photinia	<i>Photinia davidiana</i>
5	Tiarella	<i>Tiarella spp</i>	35	Box	<i>Buxus sempervirens</i>	65	Cinquefoil	<i>Potentilla spp</i>
6	Viola	<i>Viola spp</i>	36	Hop Tree	<i>Ptelea trifoliata</i>	66	Firethorn	<i>Pyracantha spp</i>
7	Ceanothus	<i>Ceanothus repens</i>	37	Japanese Quince	<i>Chaenomeles spp</i>	67	Dog Rose	<i>Rosa canina</i>
8	Valerian	<i>Centranthus ruber</i>	38	Cotoneaster	<i>Cotoneaster conspicuus</i>	68	Sweet Briar	<i>Rosa rubiginosa</i>
9	Snow-in-Summer	<i>Cerastium tomentosum</i>	39	Enkianthus	<i>Enkianthus campanulatus</i>	69	Japanese Rose	<i>Rosa rugosa</i>
10	Convolvulus	<i>Convolvulus cneorum</i>	40	Alpine Heath	<i>Erica carnea</i>	70	Rosemary	<i>Rosmarinus officinalis</i>
11	Cotoneaster	<i>Cotoneaster dammeri</i>	41	Hebe	<i>Hebe spp</i>	71	Blackberry	<i>Rubus fruticosus</i>
12	Sunrose	<i>Cistus spp</i>	42	Lily-of-the-Valley	<i>Pieris formosa</i>	72	Raspberry	<i>Rubus idaeus</i>
13	Heath	<i>Erica spp</i>	43	Blackthorn	<i>Prunus spinosa</i>	73	Spiraea	<i>Spiraea japonica</i>
14	Euonymus	<i>Euonymus fortunei</i>	44	Blackcurrant	<i>Ribes nigrum</i>	74	Snowberry	<i>Symphoricarpos alba</i>

15	Rockrose	<i>Helianthemum spp</i>	45	Redcurrant	<i>Ribes rubrum</i>	75	Tamarisk	<i>Tamarix ramosissima</i>
16	Perennial Candytuft	<i>Iberis sempervirens</i>	46	Flowering Currant	<i>Ribes sanguineum</i>	76	Thyme	<i>Thymus spp</i>
17	Marjoram	<i>Origanum spp</i>	47	Halberd Willow	<i>Salix hastata</i>	77	Tube Clematis	<i>Clematis heracleifolia</i>
18	Japanese Spurge	<i>Pachysandra terminalis</i>	48	Skimmia	<i>Skimmia japonica</i>	78	Silverthorn	<i>Elaeagnus pungens</i>
19	Periwinkle	<i>Vinca minor</i>	49	Stachyurus	<i>Stachyurus chinensis</i>	79	Ivy	<i>Hedera helix</i>
20	American Bittersweet	<i>Celastrus scandens</i>	50	Butterfly Bush	<i>Buddleja davidii</i>	80	Guelder Rose	<i>Viburnum opulus</i>
21	Passionflower	<i>Passiflora spp</i>	51	Heather	<i>Calluna vulgaris</i>	81	Weigela	<i>Weigela florida</i>
22	Potato Vine	<i>Solanum crispum</i>	52	Caryopteris	<i>Caryopteris × clandonensis</i>	82	Chives	<i>Allium schoenoprasum</i>
23	Wisteria	<i>Trachelospermum spp</i>	53	Old Man's Beard	<i>Clematis vitalba</i>	83	Tarragon	<i>Artemesia spp</i>
24	Mountain Laurel	<i>Kalmia latifolia</i>	54	Red Barked Dogwood	<i>Cornus alba</i>	84	Chamomile	<i>Chamaemelum nobile</i>
25	Bay Tree	<i>Laurus nobilis</i>	55	Oleaster	<i>Elaeagnus angustifolia</i>	85	Fleabane	<i>Erigeron spp</i>
26	English Lavender	<i>Lavandula angustifolia</i>	56	Grape Hyacinth	<i>Muscari armeniacum</i>	86	Wood Spurge	<i>Euphorbia spp</i>
27	Fuchsia	<i>Fuchsia spp</i>	57	Bell Heather	<i>Erica cinerea</i>	87	Hellebore	<i>Helleborus spp</i>
28	Panicle Hydrangea	<i>Hydrangea paniculata</i>	58	Escallonia	<i>Escallonia spp</i>	88	Hochtaræ	<i>Hochtaræ spp</i>
29	Climbing Hydrangea	<i>Hydrangea anomala</i>	59	Mint	<i>Mentha spp</i>	89	Blue Eyed Mary	<i>Omphalodes verna</i>

30	Hyssop	<i>Hyssopus officinalis</i>	60	Parsley	<i>Petroselinum crispum</i>	
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Appendix E: Lighting guidance - the impact of artificial light on bats

The following basic set of guidelines is summarized from the latest Guidance Note (08/18)¹ provides a concise checklist of points to consider with any lighting scheme:

- Use professional lighting design engineers to model and predict light spill so that it can be avoided.
- Reduce light levels to the minimum necessary to meet legal and safety requirements.
- Reduce horizontal and upward/downward light spillage to the minimum achievable. The use of cowling, masks, louvers etc. and limiting the height of lighting columns may be important depending on the design of the lighting units. No bare bulbs. Lighting should only light the target area.
- Use non-reflective surfaces within the area to be lit to minimise indirect (reflected) spillage of light. The use of planting or other structures to add screening.
- Reduce the duration of lighting. The use of lighting ‘curfews’ can also be helpful - especially in the vicinity of bats roosts. For example, the emergence of bats, typically within the hour after sunset, may be disrupted (delayed) by raised light levels and this may result in a loss of feeding opportunities.
- Consider the type of light to be used and whether a different type or design may reduce potential impacts on bats and other wildlife. Narrow spectrum lighting with minimal UV emission should be used.
- Use ‘screen planting’ to limit light spill into dark areas.
- Use narrow spectrum light sources to lower the range of species affected by lighting, as research has shown that spectral composition does impact biodiversity.
- Use light sources that emit minimal ultra-violet light
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin.

For more details, please refer to:

<https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

http://www.bats.org.uk/pages/bats_and_lighting.html

<http://www.batsandlighting.co.uk/index.html>

¹ <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

