
NEW DWELLINGS AT COMMON FARM, QUEMERFORD, WILTSHIRE

ECOLOGICAL APPRAISAL

On behalf of

JLS BUILDING & P MAYO

Final Report

27th September 2024

Prepared by



MALFORD
Environmental Consulting

www.malfordenvironmentalconsulting.co.uk

Contents

1	Introduction.....	1
2	Methodology.....	2
2.1	Desk-based study	2
2.2	Field survey	2
2.3	Impact appraisal.....	3
2.4	Biodiversity net gain.....	4
2.5	Survey limitations.....	5
3	Planning Policy	6
3.1	National.....	6
3.2	Wiltshire	6
4	Baseline Conditions.....	8
4.1	Designations	8
4.2	Habitats and botany	8
4.3	Mammals	9
4.4	Birds	10
4.5	Reptiles.....	11
4.6	Amphibians	11
5	Conclusion	12
6	Mitigation and Enhancement	13
6.1	Protecting animals during construction.....	13
6.2	Lighting design for new houses.....	13
6.3	Bat roost boxes	13
6.4	Bird nesting boxes	14
6.5	New garden hedge and tree planting	14
6.6	Wildflower grassland	14
7	Residual Effects	16
Appendix A	Existing and Proposed Scheme Plans	17
Appendix B	Site Photographs	19

1 Introduction

The client is seeking planning permission from Wiltshire Council to construct two residential dwellings on a small parcel of land, which is approximately 0.1ha in size, at Common Farm, Quemerford, Wiltshire, SN11 0BE. The design proposals include:

- ❖ Two new houses, which integrate wildlife features;
- ❖ New vehicle access and driveway;
- ❖ Landscape planting including new boundary hedges and streetscape trees/shrubs; and
- ❖ Establishment of a wildflower area on land to the east and north of the development plot.

The study area encompasses one small area of agricultural grassland, and all existing boundary trees and hedgerow will be retained and protected.

Plans showing the existing site and the proposed development are presented in Appendix A.

As part of the planning process an ecological survey and appraisal (incorporating a Biodiversity Net Gain calculation) of the site and proposed development has been undertaken. This report contains appropriate ecological baseline information, and an appraisal of predicted, potential impacts on protected/notable sites, habitats and species. Any potential adverse impacts are addressed with proposals for mitigation/compensation, while ecological enhancement to provide a biodiversity net gain has also been defined.

Malford Environmental Consulting was commissioned to undertake the ecological survey, BNG calculation and appraisal of the site and proposed development, and to provide a report to fulfil the requirements of nature conservation legislation and planning guidance. The ecological work was undertaken by Dr Stephen Dangerfield who has 30 years' experience, is a Chartered Environmentalist, a member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and holds Natural England (EPS) survey licences for great crested newt and bats.

2 Methodology

2.1 Desk-based study

A review of OS maps and satellite imagery was undertaken to establish the local context within which the study area sits and to identify whether any natural features of interest, particularly ponds, were located within 250m of the site.

Records of designated sites and protected/notable species from the last twenty-five years within a 1km radius of the development site were obtained from the Wiltshire and Swindon Biological Records Centre (WSBRC) on 22nd April 2022.

The Magic map (www.magic.defra.gov.uk) was reviewed for statutory designated nature conservation sites within a 5km radius of the study area. This search zone is considered to be appropriate for the location and size of proposed development, and allows notable and relevant sites, habitats and species to be highlighted and taken into consideration through the ecological appraisal process.

2.2 Field survey

A habitat and ecological survey of the development site was first undertaken on 19th April 2022, again on 9th November 2023 and then again on 16th September 2024, with habitat types categorised using industry-standard nomenclature. The survey focused on:

- ❖ A habitat survey to determine type, quality and extent of habitats present. Botanical lists of each habitat type were recorded. Rare/scarse and invasive plants were highlighted if found.
- ❖ A survey to determine the presence of, or the potential for the study area to support, protected and rare/scarse animals, which included looking for the following:
 - Potential/actual badger (*Meles meles*) setts, as well as latrines, tracks and other signs (foraging holes, hairs, etc);
 - Potential reptile habitat and terrestrial habitat for amphibians, particularly great crested newt (*Triturus cristatus*);
 - Waterbodies that had the potential to support great crested newt or water vole (*Arvicola amphibius*); and
 - Potential for breeding birds to use the site.
- ❖ An assessment of any trees within the proposed development site for the potential to support roosting bats. The survey was undertaken by a licensed bat surveyor in accordance with *Bat Survey for Professional Ecologists Good Practice Guidelines*¹.

The aim of a habitat and ecological survey is to identify the habitat types present and their relevance to nature conservation, based on species assemblage and structural diversity. It is also to identify the actual or likelihood of protected species inhabiting or frequenting the study area based on field signs or habitat quality/structure etc.

¹ Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London

The identification of protected, sensitive, threatened or scarce habitat or species within the development site or potentially affected by the proposed development could trigger the need for, and subsequent recommendation, for further Phase 2 surveys at an appropriate time of year. For this particular project no further ecological surveys were considered appropriate or necessary.

2.3 Impact appraisal

2.3.1 Appraisal process

The ecological appraisal of the proposed development is undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine², which are in full accordance with the mandatory requirements of the UK EIA Regulations. The ecological assessment will seek to obtain the best possible biodiversity outcomes by integrating the following key principles:

- ❖ **Avoidance:** seek options that avoid harm to ecological features (for example, by locating on an alternative site).
- ❖ **Mitigation:** Adverse effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed (for example, through a condition or planning obligation).
- ❖ **Compensation:** Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- ❖ **Enhancements:** Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2.3.2 Defining important ecological receptors and value

The CIEEM EcIA guidelines state that one of the key challenges in EcIA is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project. It is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable.

However, effort should be made to safeguard biodiversity in its entirety, as emphasised by the Convention on Biological Diversity and developed in the EU Biodiversity Strategy 2020. The EU Strategy and national policy documents emphasise the need to achieve no net loss of biodiversity and enhancement of biodiversity.

² 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

The importance of an ecological feature will be considered within a defined geographical context. The following frame of reference will be used:

- ❖ International and European
- ❖ National
- ❖ Regional
- ❖ Metropolitan, County, vice-county or other local authority-wide area
- ❖ River Basin District
- ❖ Estuarine system / Coastal cell
- ❖ Local

Various approaches can be adopted for defining local importance, including assessment within a district, borough or parish context or within another locally defined area.

2.3.3 Characterising ecological effects

When describing ecological impacts and effects, reference should be made to the following characteristics as required:

- ❖ Positive or negative
- ❖ Extent
- ❖ Magnitude
- ❖ Duration
- ❖ Frequency and timing
- ❖ Reversibility

The assessment only needs to describe those characteristics relevant to understanding the ecological effect of the impacts and determining its significance.

2.3.4 Defining significance of ecological effects

The CIEEM guidelines define an 'ecologically significant effect' as an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Significant effects should be qualified with reference to an appropriate geographic scale. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important.

Significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species (including extent, abundance and distribution). A significant effect is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project.

2.4 Biodiversity net gain

The Environment Act 2021 covers targets, plans and policies for, *inter alia*, 'improving the natural environment' and 'nature and biodiversity'. The Act brings in new requirements in relation to Biodiversity Net Gain (BNG).

The Environment Act establishes the precedent for achieving a biodiversity gain as a condition of planning permission and establishes that a biodiversity gain is met if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of the on-site habitat by at least 10%. Furthermore, any habitat enhancement must be maintained for at least 30 years after the development is completed.

For this scheme site habitat losses/gains have been calculated based on habitats included within the Phase 1 Habitat baseline survey and the proposed scheme plan, which are presented in Appendix A.

Habitats have been quantified in terms of area (m²) or length (m) before being used to populate the Defra Statutory Small Sites Biodiversity Metric, which has been used to calculate Biodiversity Net Gain (BNG) in terms of habitat unit gains or deficits.

The Defra BNG Metric and accompanying BNG Report³ have been submitted as part of the planning application documentation.

The BNG User Guide (Defra, February 2024) identifies a number of limitations of the biodiversity metric defined as principles that inform the use of the biodiversity metric tool, including:

- ❖ The biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice [Principle 4]
- ❖ Biodiversity units are a proxy for biodiversity and should be treated as relative values [Principle 5]
- ❖ The biodiversity metric is designed to inform decisions in conjunction with locally relevant evidence, expert input, or guidance [Principle 6]

2.5 Survey limitations

The development site was fully accessible and weather conditions were good for the ecological surveys. The botanical / habitat survey of the development zone was completed in April and September, which is an acceptable survey period.

It is concluded that the level of survey conducted is sufficient to categorise the habitats, establish likelihood of presence of protected / notable species, and as such underpin this ecological appraisal.

³ Malford Environmental Consulting (2024). *New Agricultural Barn at Wilmington Farm – Biodiversity Net Gain Report*

3 Planning Policy

3.1 National

The National Planning Policy Framework (NPPF), December 2023, requires that the planning system should conserve and enhance the natural environment (Section 15) by, *inter alia*, ‘protecting and enhancing sites of biodiversity value’ and ‘minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures’ (para 180).

To protect and enhance biodiversity, plans should ‘safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them’, ‘promote the conservation, restoration and enhancement of priority habitats, ecological networks and the restoration and recovery of priority species’ and ‘identify and pursue opportunities for securing measurable net gains for biodiversity’ (para 185).

Local planning authorities should apply the following principles (para 186):

- a) 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;
- b) 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 border impacts on the national network of Sites of Special Scientific Interest;
- c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland or ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements 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.
- e) The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects) unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site (para 188).

3.2 Wiltshire

The Wiltshire Core Strategy (Adopted January 2015) sets out the relevant policies relevant to biodiversity, as follows:

Core Policy 50: Biodiversity and geodiversity

Protection

Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource, and secure the integrity of local ecological networks and provision of ecosystem services.

All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.

Any development potentially affecting a Natura 2000 site must provide avoidance measures in accordance with the strategic plans or guidance set out in paragraph 6.70 above where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the Natura 2000 network. Any development that would have an adverse effect on the integrity of a European nature conservation site will not be in accordance with the Core Strategy.

Biodiversity enhancement

All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement measures will contribute to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character.

Local sites

Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

- i. Cannot reasonably be avoided
- ii. Are reduced as far as possible
- iii. Are outweighed by other planning considerations in the public interest and
- iv. Where appropriate compensation measures can be secured through planning obligations or agreements.

Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term.

4 Baseline Conditions

4.1 Designations

The development site is not covered by any local, national or European nature conservation designation.

There is one locally designated site within 1km, which is Calne Without Meadows Local Wildlife Site (Ref. SU06.001) covering 1.49ha of wet meadow and pond along the River Marsden. This is located 450m southwest of the development site and is physically separated by the busy A4 road and residential development. This site is not relevant for this study.

There are no national nature conservation designations within 2km of the development site, and no European nature conservation designations within 5km of the development site.

Designated sites are not relevant for this study and are not discussed further in this report.

The development site is not located within a Bat Consultation Zone and is therefore not within a core foraging area for a bat Special Area of Conservation (SAC).

4.2 Habitats and botany

4.2.1 Introduction

The development plot is bounded by residential property to the south and west, with land to the north a continuation of the grassland within the development plot and land to the east agricultural grassland separated by a vehicle access track leading to Common Farm.

There are no ponds within the study area, and there are no ponds shown on the 1:25,000 OS map located within 250m of the development site. The nearest ponds are located 450m+ to the south and southwest of the development site and are physically separated by the busy A4 road and residential development; ponds are not relevant for this study.

One nationally notable plant, dwarf spurge (*Euphorbia exigua*), and two county notable plants, narrow-leaved everlasting pea (*Lathyrus sylvestris*) and spotted medick (*Medicago arabica*), have been recorded within 1km of the development site.

A plan showing the baseline conditions of the site is presented in Appendix A, while photographs of the development site are shown in Appendix B.

4.2.2 Grassland

The two new dwellings will be located within a small southern part of a species-poor improved (nutrient enriched) grassland (UK Habs; Modified Grassland), which is horse and/or alpaca grazed, and has a restricted botanical diversity being dominated by a few common grasses and forbs.

The grass is dominated by common grasses including meadow foxtail (*Alopecurus pratensis*), rough meadow-grass (*Poa trivialis*), creeping bent (*Agrostis stolonifera*), red fescue (*Festuca rubra*), cock's-foot (*Dactylus glomerata*) and Yorkshire fog (*Holcus lanatus*).

Forbs are dominated by creeping and meadow buttercup (*Ranunculus repens*, *R. acris*) with much smaller amounts of clover (*Trifolium* sp), dandelion (*Taraxacum officinale* agg), broad-leaved dock (*Rumex obtusifolius*), spear thistle (*Cirsium vulgare*), creeping cinquefoil (*Potentilla reptans*), common vetch (*Vicia sativa*), dissected-leaved crane's-bill (*Geranium dissectum*), mouse ear (*Cerastium holosteoides*), yarrow (*Achillea millefolium*) and ragwort (*Jacobaea vulgaris*) scattered through. The field edges also support nettle (*Urtica dioica*), cleavers (*Galium aparine*), creeping thistle (*Cirsium arvense*), hairy willowherb (*Epilobium hirsutum*) and hedge bindweed (*Calystegia sepium*). The grassland continues northwards encompassing a further ca. 0.4ha – this land is under the control of the applicant.

The boundaries of the development plot are delineated by post & wire fence, with a small section of close-boarded fencing separating the residential garden abutting the western boundary. The northern boundary is open being a continuation of the grassland.

The road verge located outside the boundary fence comprises the same improved grassland but is maintained with a very low sward through regular mowing.

4.2.3 Trees and hedge (outside development plot)

There are no trees within the grassland development plot. There is a row of Lombardy poplar (*Populus nigra 'Italica'*) along the eastern boundary (lining the access road to Common Farm).

Along the western boundary to the north of the development plot is a narrow, 3m high species-poor native hedge (H1) dominated by hawthorn (*Crataegus monogyna*) with dog rose (*Rosa canina* agg) and bramble (*Rubus fruticosus* agg), which will be retained and protected.

4.2.4 Livestock shelter (outside development plot)

To the north of the development plot is a small livestock shelter, which measures ca. 4m by 4m and 2.5m high. It is constructed with a timber frame and single-skin timber ship-lap, with a flat roof clad in timber boards and corrugated fibreboard. It is open-fronted with a concrete floor. This structure does not support any external or internal gaps / hidden voids, and is open, light and draughty.

4.2.5 Notable habitats or plants

The habitat directly affected by the proposed development is of low ecological value. All plants recorded are common/widespread species, and no notifiable invasive plant species were recorded.

4.3 Mammals

4.3.1 Bats

There are records of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*), *Myotis* bats, serotine (*Eptesicus serotinus*), brown long-eared (*Plecotus auritus*) and lesser horseshoe (*Rhinolophus hipposideros*) bats located within 1km of the development site.

There are no trees or structures within the development plot. The Lombardy poplar trees along the eastern boundary do not support any potential bat roosting features (Category 1), and the small livestock shelter does not support any bat roosting features, is environmentally unsuitable for bats and there is no evidence of bats roosting or other activity found within the shelter (Category 1). Roosting bats are not a constraint for the development.

The habitat directly affected by the proposed development is of negligible to very low value for foraging bats being a very small area of improved grass paddock. Existing boundary vegetation will be retained *in situ*, and new mixed native boundary hedge will be incorporated within the scheme design. It is concluded that there are no predicted effects on foraging/commuting bats associated with habitat loss, and therefore bat activity transect surveys are not considered necessary, which is in accordance with BCT guidelines. Nevertheless, given the rural setting of the site, a sensitive lighting design for the new houses is recommended.

4.3.2 Other mammals

There are records of badger (*Meles meles*) and hedgehog (*Erinaceus europaeus*) within 1km of the development site.

There was no evidence of any other protected or notable mammal species found within or immediately adjacent to the development plot. No badger (*Meles meles*) sett was found and no confirmed signs of badger (e.g. latrines) were observed during the survey.

There are no habitats suitable for supporting water vole (*Arvicola amphibius*) or hazel dormouse (*Muscardinus avellanarius*).

Protected mammals are not a constraint for the proposed development, although given the rural setting there is potential for locally notable animals, especially hedgehog that has been recorded in the local vicinity, to traverse the site. Therefore, a precautionary approach to managing any excavations during the construction phase to ensure no accidental injury to animals is recommended as a purely precautionary approach.

4.4 Birds

There are records of farmland / urban birds within 1km of the development site including skylark (*Alauda arvensis*), linnet (*Linaria cannabina*), yellowhammer (*Emberiza citrinella*), starling (*Sturnus vulgaris*), house sparrow (*Passer domesticus*), redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*), song thrush (*Turdus philomelos*) and mistle thrush (*Turdus viscivorus*). Birds of prey include barn owl (*Tyto alba*), red kite (*Milvus milvus*) and peregrine (*Falco peregrinus*).

The development plot is unsuitable for supporting ground nesting birds being small and enclosed.

There are no trees, shrubs or hedge being removed to facilitate the development.

Nesting birds are not a constraint for the proposed development.

4.5 Reptiles

There are no records of reptiles associated with the development site or immediate surrounding environs. There are records of slow worm (*Anguis fragilis*) and grass snake (*Natrix helvetica*) from Quemerford Mill, which is located about 500m away from the development site and associated with the River Marsden valley, but this site is physically separated and disconnected from the development site by the busy A4 road and residential development.

The land within the development plot comprises an improved grass paddock and the site therefore has negligible potential to support reptiles.

Reptiles are not considered to be present on-site, are not a constraint for the development, and no further survey is required.

4.6 Amphibians

There are no records of great crested newt (*Triturus cristatus*) associated with the development site or immediate surrounding environs, and there are no ponds within the development plots or within 250m of the site.

There are records of great crested newt (*Anguis fragilis*) and toad (*Bufo bufo*) from Quemerford Mill, which is located about 500m away from the development site and associated with the River Marsden valley, but this site is physically separated and disconnected from the development site by the busy A4 road and residential development.

The land within the development plot comprises an improved grass paddock and the site therefore has negligible potential to support amphibians in their terrestrial phase.

Great crested newt and other amphibians are not considered to be present on-site, are not a constraint for the development, and no further survey is required.

5 Conclusion

The development site encompasses grazed improved grassland, which supports a very restricted range of common plants. This habitat is not scarce or sensitive. All existing boundary vegetation will be retained and protected. All plants recorded on site are common and widespread. No invasive plant species are present.

There is no bat roosting habitat and there are no protected mammals inhabiting the development plot, but given the rural setting there is potential for common animals to move or forage through the site. Consequently, the development has low potential to adversely affect individual foraging animals (e.g. through entrapment), but this potential impact will be removed through implementing appropriate mitigation (see Section 6.1). Recommendations for sensitively designed external lighting on the new houses to maintain dark skies and protect foraging bats is provided (see Section 6.2).

The development site is unsuitable for supporting nesting birds, reptiles and great crested newt. It is considered that the integrity of any surrounding habitats, communities or species will have negligible reliance upon the habitat within the development site.

In accordance with national and local biodiversity planning policy and CIEEM best practice ecological impact assessment guidelines, adverse ecological impacts have been completely removed or significantly reduced by appropriately siting the proposed development within habitat of very low ecological value.

Ecological enhancement features that will be integrated into the new houses and gardens as well as compensatory habitat enhancement, which provide an overall net biodiversity gain, are discussed in Sections 6.3 to 6.6.

6 Mitigation and Enhancement

6.1 Protecting animals during construction

There will be the need for excavations, trenches, pits or pipes to be created or installed as part of the development construction. Therefore, to ensure protection of any foraging / commuting animals that may traverse the site during the construction phase the following actions will be implemented:

- ❖ Any excavations that need to be left overnight will either be covered, appropriately profiled (i.e. 1 in 2) or fitted with a ramp to ensure that any animals that enter the hole can safely escape.
- ❖ Any open pipework with an outside diameter of greater than 120 mm must be covered at the end of each work day to prevent animals entering/becoming trapped.
- ❖ Any excavations or pipes left overnight should be inspected first thing the next morning, and if an animal is found an appropriately qualified person should be contacted.

6.2 Lighting design for new houses

New development should aim to limit the impact of light pollution by keeping external lighting on the new houses to a minimum (in terms of coverage, use and type/luminosity), and directed away from integrated bat roosting bricks (see Section 6.3), to ensure that future ambient night-time light levels are maintained at a low level.

The new houses should restrict the location of external lighting, for example to just doorways, and should be designed in compliance with guidelines on Bats and Lighting in the UK⁴ to ensure significant adverse impact on bats is minimised to an acceptable level. This could include the following elements:

- ❖ Using low powered LED lighting to minimise/avoid ultraviolet and infrared emissions and which have a sharp cut-off;
- ❖ Minimising outward light spill and avoiding upward light spill through the correct positioning of downward pointing luminaires and/or use of shields/hoods; and
- ❖ Limiting the timing of external lighting use, preferably with lights set on a motion detector, ensuring lights are only used as and when required, and ensuring a long period of complete darkness during each night.

6.3 Bat roost boxes

To provide new roosting habitat for crevice-dwelling bats a bat roosting brick will be incorporated into each new house. The bat brick will be integrated into the fabric of an east and west-facing elevation, with the bat brick placed as high above the ground as possible (e.g. at the apex of a gable elevation or directly under eaves) – see Appendix A. These locations are suitable as they provide sufficient height and warmth.



⁴ Bat Conservation Trust and Institution of Lighting Professionals (2018). *Bats and artificial lighting in the UK (Guidance Note 08/18)*. Bats and the built environment series.

A range of bat bricks can be viewed on-line (e.g. www.nhbs.com or www.wildcare.co.uk) with a 'Habibat' plain and brick-faced bat tube shown here. These tubes can be integrated and then faced with render, brick or stone. This or equivalent should be used.

Clear lines of flight to the bat tube entrance will be maintained at all times, and no external lighting must be used adjacent to or shine directly at the entrance slot (see Section 6.2).

6.4 Bird nesting boxes

A pair of swift nesting boxes will be incorporated into each new house. Integrated nest-boxes, i.e. ones integrated into the fabric of an external wall, will be used. Swift nest boxes will be installed on the east and west-facing side elevations (facing each other) near the apex of gable – see Appendix A. These locations are suitable as they provide sufficient height and shelter from direct sunlight.

The provision of swift boxes recognises the fact that swift populations are in decline and therefore the scheme aims to provide additional breeding sites for this species. Swift nesting boxes are also readily used by a range of other small passerine birds such as house sparrow (*Passer domesticus*) and are seen as a 'universal bird box' for new development.

A range of alternative nest boxes are available and can be viewed on-line (for example www.nhbs.com or www.wildcare.co.uk), with a Vivara Pro Cambridge swift box (chamber and entrance brick) is shown here. This or an equivalent should be used.



6.5 New garden hedge and tree planting

The new development will include 42m of new mixed native hedge with trees along the northern garden boundary, and 30.6m of mixed native hedge along the eastern boundary.

The new development will include 10 small trees / shrubs at the front of the houses to enhance the streetscape.

The new hedges will include a mix of eight native species and the trees will include a mix of six native varieties as shown on the Proposed Site Plan, Drawing No. 2338.03.02 Rev B dated 27/11/2023 (see Appendix A).

6.6 Wildflower grassland

A strip of land (road verge) to the immediate east and an area of land to the north of the development plot, which is a continuation of improved grassland paddock, are under the control of the applicant. The road verge (ca. 52m²) and an area of paddock 18m deep by 40m wide (720m²) located to the immediate north of the dwellings will be enhanced botanically to achieve a grassland sward with increased wildflower diversity.

The existing grassland will be prepared and sown with wildflowers, which will provide a source of pollen and nectar for invertebrates including butterflies, moths and bees. Only wildflowers will be sown as the matrix of grasses is already present.

The grassland will be suitably prepared and then seeded using an appropriate seed mix obtained from a reputable seed house such as Emorsgate EM2F (standard general purpose wild flowers), see www.wildseed.co.uk, or equivalent.

The existing strip of grassland will be prepared in late summer by cutting the sward very hard, while creating gaps in the sward (aiming to create 50% bare soil) by harrowing or by raking. Seeds will be sown at the rate specified by the supplier.

The grassland seed mix will be sown preferably in the autumn (August-September) or alternatively spring (March-April). On bare soil the sown seed must not be covered with additional soil but instead rolled to give good soil/seed contact.

The grassland wildflower area will be left un-grazed or uncut (using livestock/electric fencing) from spring through to early August to allow plants to flower and set seed. After flowering a cut will be undertaken to about 50mm sward height with cuttings left *in situ* to dry and shed seed for 1-7 days (depending on prevailing weather) then collected and removed off-site to stop nutrient build-up in the soil.

Re-growth will be controlled with after-math sheep grazing or mowing through to late autumn to keep the sward at about 50mm height before onset of winter.

Weed control may be implemented when required, which could involve a combination of hand pulling (woody species) and the targeted use of herbicides for docks/thistles or other invasive or undesirable species which may appear.

7 Residual Effects

In accordance with biodiversity planning policies and CIEEM best practice guidelines adverse ecological impacts have been removed or significantly reduced by the correct positioning and design of the proposed new houses, which impacts a habitat of very low ecological value.

Residual adverse impacts include the permanent loss of a small area of improved grassland, which will be replaced by the new buildings, driveway and gardens. This residual adverse impact is not considered to be significant.

As part of the scheme design and landscaping approximately 73m of new mixed native hedge, 10 small trees/shrubs, two integrated bat roosting bricks and four integrated swift nesting boxes will be planted or installed. In addition, to compensate for the loss of grassland and further increase the overall ecological benefit, ca. 770m² of modified grassland located to the immediate east and north of the development plot will be enhanced to create a wildflower rich area.

The replacement and new habitats will enhance the site for a range of wildlife including protected/notable species found in the local landscape.

The proposed development provides a significant biodiversity gain in terms of creation of semi-natural habitats (BNG targets met). The Defra Statutory Small Sites Metric has been used to quantify habitat losses/gains based on information from the phase 1 habitat baseline survey and the scheme design as presented in Appendix A.

For this development, baseline habitat and hedgerow units are:

- ❖ *Habitat*: 0.7387 units
- ❖ *Hedgerow*: 0.0 units

For this development, habitat and hedgerow gains are calculated to be:

- ❖ *Habitat*: total net unit change = 0.1672 units and total net percentage change = **+22.64%**
- ❖ *Hedgerow*: total net unit change = 0.4872 units (total net percentage change = n/a, assumed **+100%**)

The proposed development will not alter the functioning of the retained habitats and, critically, the scheme design and new planting/habitat creation will significantly enhance the overall habitat and structural diversity found within and adjacent to the application area. This will contribute to biodiversity targets and benefit a range of local wildlife species and groups.

Given the absence of a significant residual impact associated with the proposed scheme combined with appropriate habitat creation/enhancement that enhances the study area for a range of wildlife, the residual ecological effect of the proposed development is considered to be positive in a Local (Site) context.

The proposed development complies with both national and local planning policies (NPPF and Wiltshire Council Core Policy 50) to maintain and enhance biodiversity (provide >10% biodiversity net gain), in particular for those habitats and species found on or adjacent to the application area that are identified as priorities in the UK and Wiltshire.

Appendix A Existing and Proposed Scheme Plans





Key

- Proposed new dwelling
- Proposed new dwelling grassed area
- Proposed new dwelling drive and path area
- Proposed new communal grassed area
- Proposed new boundary fencing
- Proposed new tree landscaping
- Proposed dwelling parking bays 2.5 x 5m
- Proposed new hedging
- Location of integrated swift brick
- Location of integrated bat box

Landscaping

Hedging
Native country hedge mix to rear of the plots and along east boundary of plot 4

60% Crataegus monogyna (Hawthorn)
10% Prunus spinosa (Blackthorn, sloe)
5% Acer campestre (Field maple)
5% Cornus sanguinea (Dogwood)
5% Corylus avellana (Hazel)
5% Euonymus europaeus (Spindle tree)
5% Malus sylvestris (Crab Apple)
5% Viburnum lantana (Wayfaring tree)

Double row planting with plants staggered to those in adjacent rows. The rows should be 20cm apart and the plants 40cm apart in each row making a total of 5 plants per metre.

Trees
To be a mix of native species to include some or all of the following:
Sorbus aucuparia (Rowan)
Sorbus aria (Whitebeam)
Acer campestre (Field Maple)
Betula pendula (Silver Birch)
Malus sylvestris (Crab Apple)
Prunus Cerasifera nigra (Cherry Plum)

Dwellings

Plot 1 - Type A
3 bedroom house - Estimated 88sqm (including external walls)

Plot 2 - Type B
3 bedroom house - Estimated 88sqm (including external walls)

Note:
All information shown on this drawing is to be used for planning or building regulation purposes only and not to be used in conjunction with any other information or drawings including contract, working drawings, construction and as built papers.

No responsibility is taken by Concept Drawing & Design Architects for any measurements taken on this drawing. All dimensions shown on this drawing must be checked on site by the project manager and/or contractor to ensure that they are accurate. Any dimensions that can not be achieved, the client, project manager and architect must be made aware immediately.

Concept Drawing and Design Architects have not surveyed the external landscape, or the boundary line, external ground levels, and profile/size of adjoining buildings. This information, if shown on the drawings, are just a representation of what might be there. Concept Drawing and Design Architects take no responsibility for the accuracy of the information relating to these topics.

The Party Wall Act may apply if any of the following categories of building work apply:
1. Work on an existing wall or structure shared with another property.
2. Building a new retaining wall or a wall of a building up to, near or outside the boundary with a neighbouring property.
3. Excavating near a neighbouring building.

It is the responsibility of the client/owner to determine whether the act applies and if so notify all adjoining owners in accordance with the act. Further information can be found on the government and local government websites.

A - 14.11.2023
Alteration to boundary
B - 22.11.2023
Alterations as per clients email

PROJECT
2338 - Quemerford Dwellings
Mr Mayo

Quemerford
Wiltshire, SN11 8UB

Proposed Dwellings

DRAWING
Proposed Site Plan
1:200, 1:100@A1

Drg No:2338.03.02 Rev B Rev:
27/11/2023

CONCEPT DRAWING & DESIGN
SERVICES

Telephone: 07557505990
Email: concept@drawinganddesign.co.uk
Website: www.drawinganddesign.co.uk
You can also find us on Facebook and Twitter

Appendix B Site Photographs

November 2023



Development plot comprising improved, grazed grassland looking west towards houses (left) and east towards line of poplars (right)



Road verges along southern boundary (left) and eastern boundary that will be enhanced as wildflower grassland (right)



Continuation of grassland – some to be enhanced as wildflower grassland (left) and species-poor hedge H1 (right)



Livestock shelter located north of the development plot with no bat roosting potential

September 2024



Grass road verge and paddock looking west along southern boundary (left) and looking north (right)



Grass paddock looking west (left) and looking south (right)