
**LAND OFF WOODWAY ROAD,
SIBFORD FERRIS, OXFORDSHIRE**

ECOLOGICAL APPRAISAL

On behalf of

BLUE CEDAR HOMES LTD

Final Report

13th December 2021

Prepared by



MALFORD
Environmental Consulting

www.malfordenvironmentalconsulting.co.uk

Contents

1	Non-Technical Summary	1
2	Introduction	2
3	Methodology.....	3
3.1	Phase 1 field survey.....	3
3.2	Desk-based study	3
3.3	Impact appraisal.....	4
4	Planning Policy	6
4.1	National.....	6
4.2	Cherwell District.....	6
5	Baseline Conditions.....	8
5.1	Designations	8
5.2	Landscape review	8
5.3	Habitats and botany	9
5.4	Bats	10
5.5	Other mammals	11
5.6	Birds	12
5.7	Reptiles.....	13
5.8	Amphibians	13
5.9	Invertebrates.....	13
6	Important Ecological Receptors	14
7	Predicted Impacts and Significance	15
7.1	Introduction	15
7.2	Boundary hedgerow and trees	15
7.3	Oak trees with PRF	15
7.4	Foraging/commuting bats.....	15
7.5	Notable mammals	15
7.6	Nesting birds.....	15
8	Mitigation and Enhancement	16
8.1	Protecting foraging/commuting bats	16
8.2	Protecting animals during construction.....	16
8.3	Protecting nesting birds.....	17
8.4	Bat roosting boxes	17
8.5	Bird nesting boxes	18
8.6	Hedgerow planting	18
8.7	Tree planting.....	19
8.8	Species-rich grassland.....	19
8.9	Wildlife hibernacula.....	20
8.10	Garden fencing	20
9	Residual Effects	21
10	References	22
Appendix A	Aerial Image with Ecology Target Notes	23
Appendix B	Site Photographs	24
Appendix C	Location of Bat and Bird Boxes.....	26

1 Non-Technical Summary

Blue Cedar Homes Ltd is submitting a planning application to Cherwell District Council for a 6 dwelling housing scheme on land located to the east of Woodway Road, Sibford Ferris, Oxfordshire, OX15 5QW.

An ecological survey and appraisal of the site and proposed development has been undertaken that identifies impacts, mitigation and enhancement opportunities. An ecological survey was undertaken on the 23rd September 2021. The survey was supported with a desk-based review of maps, satellite imagery, and information supplied by the Thames Valley Environmental Records Centre.

The proposed development site is not covered by any statutory or non-statutory nature conservation designations, and there are no potentially affected designated sites in the local landscape.

The development site encompasses a single, small arable field and boundary vegetation, and all plants on site are common. No invasive plant species are present.

Boundary hedgerow used by common bats and two oak trees, which have low potential to support roosting bats, will be protected. The habitat affected by the development is of negligible value for foraging bats. Badger and other common mammals possibly move through the study area.

The site is not suitable for supporting ground nesting birds, and the vast majority of boundary hedgerow that could support low numbers of nesting common birds will be retained and protected. The site is not considered to support reptiles or great crested newt.

Residual impacts include the permanent change of arable land and a small cut through of an existing hedge to facilitate vehicle access to the site. Mitigation is included to protect bats, badgers/mammals and nesting birds.

The scheme design can include new mixed native hedgerow, trees and species-rich grassland, while five bat roosting boxes and twelve swift nesting boxes will be installed on new buildings.

The proposed development complies with both national and local planning policies to maintain and enhance biodiversity, in particular those habitats and species identified as priorities in the UK and Oxfordshire, and the scheme provides a net biodiversity gain.

The residual ecological effect of the proposed development is considered to be positive in a Local context.

2 Introduction

Blue Cedar Homes Ltd is submitting a planning application to Cherwell District Council for a proposed residential housing scheme, comprising six dwellings, on part of a small (0.75ha) field located to the east of Woodway Road, Sibford Ferris, Oxfordshire, OX15 5QW (see Appendix A).

As part of the planning process an ecological survey and appraisal 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 sites, protected/notable species and biodiversity in general associated with new housing on this site. Any potential adverse impacts are addressed with proposals for mitigation/compensation, while opportunities for enhancement are also identified.

Malford Environmental Consulting was commissioned to undertake this latest ecological survey 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 ca 30 years' professional experience, is a Chartered Environmentalist, a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and holds Natural England European Protected Species survey licences for bats and great crested newt.

The study area encompasses a single arable field, which is bounded by a combination of hedgerows and garden fences/planting. Residential housing is located adjacent to the northern and eastern boundaries, while arable farmland (and Woodway Road) abuts the other two boundaries of the site. Farmland immediately to the south of this proposed development site has received outline planning permission for a 25 unit residential development (Ref. 18/01894/OUT) and is currently subject to a reserved matters planning application (Ref. 21/02893/REM).

This proposed development will include the construction of six dwellings with associated gardens, green open space, garages/parking, access road and other associated infrastructure. Vehicle access will be from the south connecting to the consented southern residential development, requiring a small section of boundary hedge to be removed. Other boundary hedges will be retained and protected, with some planting to in-fill some gaps.

3 Methodology

3.1 Phase 1 field survey

An extended Phase 1 habitat and ecological survey was undertaken on the 23rd September 2021 with habitats categorised using standard habitat-type 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 as far as possible. Rare/scarce 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/scarce 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 mature trees or structures within the site, and potentially affected, for the potential to support roosting bats. The bat roost potential survey was undertaken by licensed bat surveyors in accordance with Bat Conservation Trust guidelines (Collins, J (ed.), 2016) and Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals (Andrews, 2018).

The aim of an extended Phase 1 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. 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, targeted ecological surveys were considered appropriate or necessary.

3.2 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 250-500m of the site.

Records of designated sites and protected/notable species within 2km of the development site were obtained from the Thames Valley Environmental Records Centre (TVERC). In addition, a specific request for records of great crested newt within 1km of the proposed development site was also requested from TVERC (GCN Package service).

In addition, the MAGIC website (www.magic.defra.gov.uk) was reviewed for European designated sites located within a 10km radius of the study area.

These search zones are considered to be appropriate for the 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.

As part of the ongoing planning application for residential development to the immediate south of this development site ecological baseline surveys and an appraisal were undertaken. This report has reviewed and, where relevant, cross-references information contained within the following reports:

- ❖ Prime Environment (2018a). *Ecological Impact Assessment, Land West of Hook Norton Road, Sibford Ferris, Oxfordshire.*
- ❖ Prime Environment (2018b). *Bat Activity Results Report, Land West of Hook Norton Road, Sibford Ferris, Oxfordshire.*

3.3 Impact appraisal

3.3.1 Assessment 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 Marine (CIEEM, 2018), 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.

3.3.2 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.

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.

3.3.3 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.

3.3.4 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.

4 Planning Policy

4.1 National

Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC Act) requires all public bodies to have regard to biodiversity conservation when carrying out their functions.

The National Planning Policy Framework (NPPF), July 2021, 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 and providing net gains for biodiversity' (para 174).

Scheme plans should 'promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species' and 'identify and pursue opportunities for securing measurable net gains for biodiversity' (para 179).

Local planning authorities should aim to protect and enhance biodiversity by applying the following principles (para 180):

- 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.

4.2 Cherwell District

The Cherwell Local Plan 2011 - 2031 (Part 1 adopted 20 July 2015) sets out the relevant policy relevant to biodiversity, as follows:

Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment

Protection and enhancement of biodiversity and the natural environment will be achieved by the following:

- ❖ In considering proposals for development, a net gain in biodiversity will be sought by protecting, managing, enhancing and extending existing resources, and by creating new resources.
- ❖ The protection of trees will be encouraged, with an aim to increase the number of trees in the District.

- ❖ The reuse of soils will be sought.
- ❖ If significant harm 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 development will not be permitted.
- ❖ Development which would result in damage to or loss of a site of international value will be subject to the Habitats Regulations Assessment process and will not be permitted unless it can be demonstrated that there will be no likely significant effects on the international site or that effects can be mitigated.
- ❖ Development which would result in damage to or loss of a site of biodiversity or geological value of national importance will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site and the wider national network of SSSIs, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity.
- ❖ Development which would result in damage to or loss of a site of biodiversity or geological value of regional or local importance including habitats of species of principal importance for biodiversity will not be permitted unless the benefits of the development clearly outweigh the harm it would cause to the site, and the loss can be mitigated to achieve a net gain in biodiversity/geodiversity.
- ❖ Development proposals will be expected to incorporate features to encourage biodiversity, and retain and where possible enhance existing features of nature conservation value within the site.
- ❖ Existing ecological networks should be identified and maintained to avoid habitat fragmentation, and ecological corridors should form an essential component of green infrastructure provision in association with new development to ensure habitat connectivity
- ❖ Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value.
- ❖ Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution.
- ❖ Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably.
- ❖ A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.

Policy ESD 11: Conservation Target Areas

Where development is proposed within or adjacent to a Conservation Target Area biodiversity surveys and a report will be required to identify constraints and opportunities for biodiversity enhancement. Development which would prevent the aims of a Conservation Target Area being achieved will not be permitted. Where there is potential for development, the design and layout of the development, planning conditions or obligations will be used to secure biodiversity enhancement to help achieve the aims of the Conservation Target Area.

5 Baseline Conditions

5.1 Designations

There is no European nature conservation designation covering the study area or located within 10km of the study area.

There is no national 'nature conservation' designation covering the study area or located within 2km of the study area.

The nearest Site of Special Scientific Interest is Sharp's Hill Quarry SSSI located 2km to the southwest of the study area, which is designated for geological interest.

There is no local nature conservation designation covering the study area. The nearest locally designated site is Temple Mills Quarry Local Wildlife Site (LWS), which is located 1km to the southwest of the study area. This site is designated for lowland calcareous and neutral grassland, which have strong acidic and calcareous influences indicating the varied geology, with ash woodland and wetland habitat.

Lambs Pool, which is a Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) Nature Reserve, is located 1km south of the study area comprising a man-made lake, hedges and pollarded willows that support aquatic plants and nesting birds.

Due to the distance and lack of connectivity, these designated sites will not be impacted by the proposed development and are not discussed further in this report

5.2 Landscape review

A review of the OWLS identifies that the study area is located in the Cherwell District within the Parish of Sibford Ferris. The study area is covered by a single Landscape Type designated as 'Rolling Village Pastures'. The landscape is characterised by a distinctive landform of small rounded hills and narrow valleys dominated by small to medium-sized fields with mixed land uses, but predominantly pasture. Much of the main biodiversity interest, where it survives, is associated with the steeper valley sides and valley bottom. Bioscores are low-medium (medium-high in valleys) and priority habitats include calcareous, neutral and marshy grassland.

The key recommendations of the Biodiversity Strategy for this Landscape Type are:

- ❖ Safeguard and enhance the landscape character of the hedgerow network, small woodlands and tree-lined watercourses; and
- ❖ Ensure that all priority habitats are in favourable condition and management.

The study area is not located within or immediately adjacent to a Conservation Target Area (CTA), with the nearest CTA being the 'Swere Valley and Upper Stour CTA', which is located 1km to the south of the study area. This is not relevant for this project.

5.3 Habitats and botany

5.3.1 Introduction

There are records of a number of locally and nationally notable plants, but the majority of these plants are associated with species-rich grassland, woodland and wetland habitats within designated sites located south of the study area. There is a single record of cornflower (*Centaurea cyanus*) and corn marigold (*Glebionis segetum*) in the local landscape, but these are both very likely to be introduced plants.

There are no ponds within the study area and no ponds within 500m as shown on the 1:25,000; 1:5,000; and 1:2,500 OS maps.

An aerial image of the study area with ecological target notes is provided in Appendix A and photographs of the study area are presented in Appendix B.

5.3.2 Field

The field is arable, which had recently been cropped during the survey. Interspersed among the crop are very common plants, typical of arable or disturbed ground, including hogweed (*Heracleum sphondylium*), dissected-leaved crane's-bill (*Geranium dissectum*), groundsel (*Senecio vulgaris*), ribbed melilot (*Melilotus officinalis*), prickly sow thistle (*Sonchus asper*), nipplewort (*Lapsana communis*), knotgrass (*Polygonum aviculare*), dandelion (*Taraxacum officinale* agg), scentless mayweed (*Tripleurospermum inodorum*), fat-hen (*Chenopodium album*), field forget-me-not (*Myosotis arvensis*), creeping thistle (*Cirsium arvense*) and shepherd's purse (*Capsella bursa-pastoris*).

The field margins, typically 1-2m wide, support common grasses and tall herb/ruderal vegetation typical of nutrient enriched soils, as well as some plants associated with shadier conditions at the base of boundary hedges.

Grasses include rye grass (*Lolium perenne*), false oat grass (*Arrhenatherum elatius*), cock's-foot (*Dactylus glomerata*), rough meadow-grass (*Poa trivialis*) and Yorkshire fog (*Holcus lanatus*). Flowering plants include nettle (*Urtica dioica*), cleavers (*Galium aperiene*), cow parsley (*Anthriscus sylvestris*), hogweed, broad-leaved dock (*Rumex obtusifolius*), white dead nettle (*Lamium album*), creeping thistle, burdock (*Arctium* sp), broad-leaved plantain (*Plantago major*), ragwort (*Jacobaea vulgaris*), willowherb (*Epilobium* sp), ivy (*Hedera helix*), cuckoo pint (*Arum maculatum*), herb Robert (*Geranium robertianum*) and hedge bindweed (*Calystegia sepium*).

5.3.3 Boundaries

Western boundary (Adjacent to Woodway Road)

The western boundary comprises a mixed native hedge (H1), which is approximately 2m high and 2m wide. Shrubs include hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), ash (*Fraxinus excelsior*), dog rose (*Rosa canina* agg) and bramble (*Rubus fruticosus* agg), with two mature oak (*Quercus robur*) trees within the hedge.

Southern boundary

The southern boundary comprises a relatively recently planted mixed native hedge (H2), which is approximately 2-3m high and 2m wide. The hedge is dominated by hawthorn with interspersed dogwood (*Cornus sanguinea*), and occasional ash, field maple (*Acer campestre*) and elder (*Sambucus nigra*) with bramble growing through. There are four semi-mature oak trees within the hedge.

Eastern and northern boundaries

The eastern and northern boundaries abut residential gardens and are delineated by a variety of garden fencing and walls with garden/ornamental planting located behind (outside study area boundary). Trees and shrubs include oak, yew (*Taxus baccata*), cherry/plum (*Prunus* sp), apple (*Malus pumila* agg), cypress (*Cupressus* sp), hazel (*Corylus* sp), beech (*Fagus sylvatica*), rose (*Rosa* sp), privet (*Ligustrum* sp), mahonia (*Mahonia* sp), smoke bush (*Cotinus* sp) and buddleia (*Buddleja davidii*). A few small specimens grow along the boundary within the study area including small oak, ash, cherry, plum and buddleia.

5.3.4 Notable habitats or plants

The habitats directly affected by the proposed scheme are of negligible to low ecological value. All plants recorded are common/widespread species, and no notifiable invasive plant species were recorded.

5.4 Bats

5.4.1 Existing data

There are records of bats in the local landscape including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*), brown long-eared (*Plecotus auritus*), *Myotis* species and lesser horseshoe (*Rhinolophus hipposideros*). Roosts of common pipistrelle and lesser horseshoe have been confirmed within 2km of the study area.

5.4.2 Roosting bats

There are no structures within the study area. Trees within or bordering the arable field were visually inspected for the potential to support roosting bats. Most trees are classed as having 'no potential' for roosting bats (Category 1) given their age, size, structure and the fact that they do not support any of the potential roosting features (PRF) that bats are known to use (Andrews, 2018).

The two mature oak trees within the western boundary hedge do support PRF in the form of dead wood, splits/cracks, rot holes and lifted bark, which could support individual or low numbers of crevice-dwelling bats during the summer months, and are thus classed as having low potential to support roosting bats (Category 2). However, these trees will be retained and protected with a large stand-off from the houses.

No other properties or trees outside the proposed development site will be directly or indirectly adversely affected by the development proposals. As such any other roost that may be present will not be damaged, disturbed or adversely affected to prevent bats from accessing or using it.

Roosting bats are not a significant constraint for the proposed development. No further bat roost survey is required for this proposed development.

5.4.3 Foraging/commuting bats

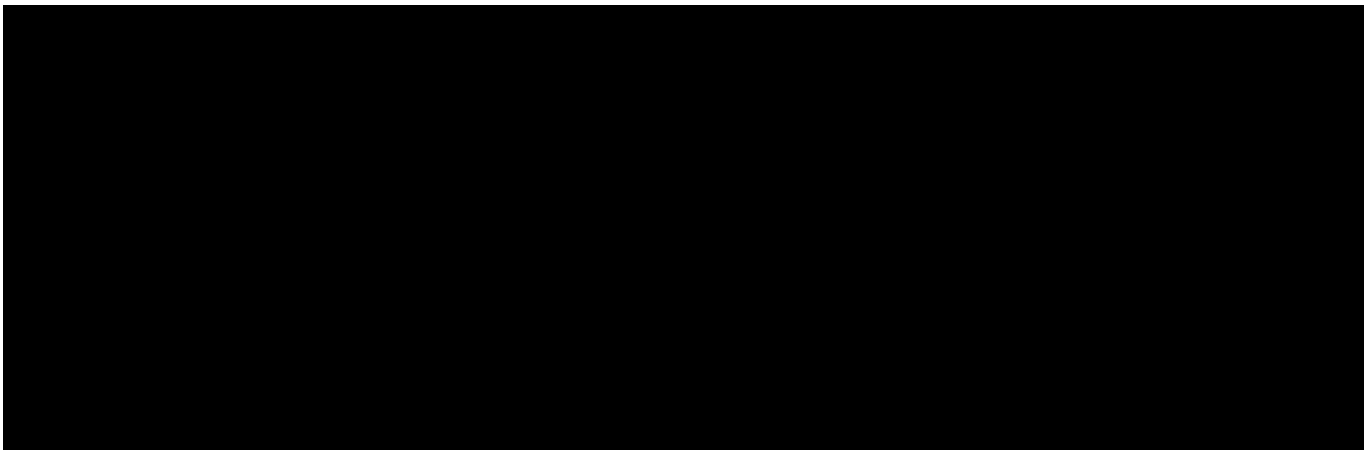
The habitat directly affected by the proposals is of negligible value for foraging bats being intensively managed arable land.

Bats are likely to forage or commute along boundary hedges (H1 and H2), while the residential boundary habitats provide lower value habitat. Based on experience of surveying similar habitats it is considered very likely that any bat activity will be very likely restricted to common/widespread species using boundary habitat or attracted to adjacent residential gardens.

Bat activity surveys undertaken by Prime Environment during the summer 2017 (Prime Environment, 2018b) recorded a minimum of five common bat species using boundary hedges, including H1 and H2, which were common pipistrelle, soprano pipistrelle, brown long-eared, noctule and *Myotis* species. Common pipistrelle dominated, accounting for 80% of recorded activity, and *Myotis* species accounted for 15% of recorded activity, with much of the bat activity recorded along the hedge bordering Hook Norton Road to the east (away from the current study area). No horseshoe (*Rhinolophus* sp) bats were recorded during the 2017 survey. Given that boundary habitats and land use, comprising intensively managed arable land, has not changed in the intervening period it is reasonable to conclude that these bat results are representative of the habitats found within the current study area, and are therefore still valid to underpin this ecological appraisal.

Boundary hedgerows will remain largely intact, except for a small cut through of H2 to facilitate vehicle access, but this is not considered significant. Boundary hedgerows will be protected both physically and environmentally, as well as being enhanced through appropriate in-fill planting where appropriate.

As such foraging and commuting bats are not considered to be a significant constraint for the proposed development. Further bat survey is not considered necessary to underpin this ecological appraisal or define appropriate mitigation to ensure safeguarding of bats, which is in accordance with BCT guidelines. The hedgerow and associated trees will be protected with an appropriate stand-off and an appropriate external lighting scheme for the new development (see mitigation section).



5.6 Birds

5.6.1 Existing data

A number of nationally notable (legally protected, UKBAP, and red / amber list) birds have been recorded in the local landscape, with many associated with wetland habitats to the south of the study area.

Farmland birds recorded include skylark (*Alauda arvensis*), lapwing (*Vanellus vanellus*), starling (*Sturnus vulgaris*), tree sparrow (*Passer montanus*), linnet (*Carduelis cannabina*), yellowhammer (*Emberiza citrinella*), corn bunting (*Emberiza calandra*), yellow wagtail (*Motacilla flava*), grey partridge (*Perdix perdix*) and quail (*Coturnix coturnix*).

Hedgerow species include dunnock (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), song thrush (*Turdus philomelos*), mistle thrush (*Turdus viscivorus*) and house sparrow (*Passer domesticus*).

Summer migrants including swift (*Apus apus*) and house martin (*Delichon urbica*) have been recorded, while Farraday House, a property immediately north of the study area, has been identified by Cherwell District Council as being a 'hot spot' for swift and swallow (*Hirundo rustica*). All three species are likely to forage over the study area during the summer months.

Winter visiting birds including fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*) have been recorded and could forage on-site.

Birds of prey recorded include barn owl (*Tyto alba*), tawny owl (*Strix aluco*), kestrel (*Falco tinnunculus*), red kite (*Milvus milvus*), merlin (*Falco columbarius*) and hobby (*Falco subbuteo*), and any of these species could potentially hunt over the study area at certain times of year. However, being a small site these species are highly unlikely to be reliant upon this site.

5.6.2 Field survey

Birds heard or observed during the survey was restricted to wood pigeon (*Columba palumbus*), robin (*Erithacus rubecula*) and blackbird (*Turdus merula*).

The site is unsuitable for ground nesting species being small, enclosed and having telegraph wires crossing the site, which provide perches for raptors.

A few common birds could nest within the boundary vegetation, with only a small section of Hedgerow H2 scheduled for removal. All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act, 1981 as amended. This act makes it an offence to:

- ❖ Intentionally, or recklessly, kill, injure or take any wild bird
- ❖ Take, damage or destroy the nest of any wild bird while it is in use or being built
- ❖ Take or destroy the egg of any wild bird

5.7 Reptiles

There are no records of reptiles within 2km of the site. The arable field has negligible potential to support reptiles as it does not support refugia habitat and is highly disturbed. Furthermore, the development site is disconnected and isolated within an intensively managed arable farmland landscape. Reptiles are not considered to be present within the application site, and are not a constraint for the proposed development.

5.8 Amphibians

There are no records of great crested newt or other amphibians within 2km of the site. The proposed development site does not contain any ponds, there are no ponds within 500m of the study area, and the habitat within the study area is unsuitable for supporting great crested newt in their terrestrial phase. Great crested newt is not a constraint for the proposed development.

5.9 Invertebrates

The habitats within the study area will not support a notable invertebrate community or any of the notable butterfly species recorded in the local landscape, which include brown hairstreak (*Thecla betulae*), dingy skipper (*Erynnis tages*) and small heath (*Coenonympha pamphilus*).

Given the habitats on-site it is expected that only very common, wider countryside species that are resilient and use a broad range of widely distributed habitats will frequent the site (Peterken, 2013). Invertebrates are not a constraint for the proposed development.

6 Important Ecological Receptors

The proposed development site is not covered by any statutory or non-statutory nature conservation designations, and there are no potentially affected designated sites in the local landscape.

The development site encompasses mainly intensively managed agricultural (arable) land, which is not scarce, threatened or sensitive, and all plants recorded on site are common and widespread. No invasive plant species are present.

The proposed scheme does not impact upon boundary hedgerow/vegetation that support commuting/foraging bats or mature trees that have low potential to support roosting bats in the summer. The habitat directly affected by the proposed development is of negligible value for foraging bats.

The site is not suitable for supporting ground nesting birds, and the vast majority of boundary hedgerow that could support low numbers of nesting common birds will be retained and protected. Some individual shrubs will be removed, and there is a low potential for very low numbers of very common hedgerow birds to nest within this vegetation.

The site is not considered to support reptiles or great crested newt.

It is considered that the integrity of any surrounding habitats, communities or species will have very low reliance upon the habitat within the development footprint.

Based on the ecological surveys and desk-based review of ecological data the following are considered to be important ecological receptors that require an assessment of potential impacts:

- ❖ Boundary hedgerow and trees. Important is a Local context.
- ❖ Oak trees (in H1) with potential bat roosting features. Important in a Local context;
- ❖ Foraging/commuting bats. Low numbers of common bats. Important in a Local context;
- ❖ Notable mammals. Badger and other animals could move through the study area. Important in a Local (Site) context; and
- ❖ Nesting birds. Low numbers of common birds using boundary vegetation. Important in a Local (Site) context.

7 Predicted Impacts and Significance

7.1 Introduction

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 negligible to low ecological value, with a general absence of protected or notable wildlife within the development footprint, which only encompasses a part of the arable field and a small section of boundary hedge. The proposed development further avoids/minimises adverse impacts by maximising the retention of boundary hedgerow and associated mature trees. The following impacts on importance ecological receptors are predicted.

7.2 Boundary hedgerow and trees

The vast majority of boundary hedgerow, all standard trees and residential boundary planting will be retained and protected using appropriate best practice tree protection measures to prevent physical damage or compaction of root zones. This is a *neutral* impact.

7.3 Oak trees with PRF

There are two mature oak trees in the western boundary hedgerow (H1) that support potential bat roosting features. These trees will be retained and will remain unaffected by the proposed development being protected with a wide buffer providing both physical and environmental protection. This is a *neutral* impact.

7.4 Foraging/commuting bats

The vast majority of boundary vegetation and all standard trees on the site boundaries will be retained and protected, with a small section of hedgerow H2 being removed to facilitate vehicle access. The development will remove arable land. New habitats will include some new boundary vegetation, gardens, tree planting and other green open space that bats can use for foraging/commuting. Appropriate scheme design will ensure no adverse effects on foraging/commuting bats are manifest and that enhancements can be provided (see Sections 8.1 and 8.6-8.8). This is a *positive* impact in a *local (site)* context.

7.5 Notable mammals

Badger and other common mammals could move through the study area. The proposed development has the potential to injure / cause mortality to these species if undertaken without appropriate safeguards. If this were to happen this is a *negative* impact in a *local (site)* context. This potential adverse impact will be removed by implementing mitigation (see Section 8.2).

7.6 Nesting birds

Low numbers of common birds could nest within boundary hedgerow. A small section of hedgerow H2 will be removed to facilitate vehicle access into the development site. If this vegetation is removed without appropriate safeguards then there is the potential to damage, destroy or disturb nesting birds. This is a potential *negative* impact in a *local (site)* context. This potential adverse impact will be removed by implementing mitigation (see Section 8.3).

8 Mitigation and Enhancement

8.1 Protecting foraging/commuting bats

In line with national and local planning policy, the new development will seek to limit the impact of light pollution on foraging/commuting bats by keeping external lighting on the new buildings to a minimum (both in terms of coverage, use and type/luminosity) and directed away from boundary hedgerow and vegetation that is used by foraging/commuting bats to try to ensure there is no significant increase in ambient night-time light levels along these linear, boundary features.

The new buildings should restrict the location of external lighting, for example to just over doorways, and should be designed in compliance with guidelines on bats and lighting in the UK (Bat Conservation Trust and Institution of Lighting Professionals, 2018) to ensure adverse impacts on foraging/commuting bats are avoided or minimised to an acceptable level. This includes the following elements:

- ❖ Use of correct 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 use of shields/hoods; and
- ❖ The artificial lighting should not operate through the night preferably being set on a motion detector or timer so as to be used as and when required, thereby ensuring a long period of complete darkness during each night.

These design features mean that no significant adverse effect on foraging/commuting bats is predicted. This will protect bats in accordance with Cherwell District Council Policy ESD10.

8.2 Protecting animals during construction

There will be excavations, trenches, pits or pipes to be created or installed as part of the development construction. Therefore, to ensure protection of badger and other 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.
- ❖ Vegetation removal will proceed with care (any shrubs cut by hand to ground level) so as to allow animals to disperse if they are present at the time of the work.

This will protect animals in accordance with Cherwell District Policy ESD10.

8.3 Protecting nesting birds

The proposed development will remove a small section of hedgerow H2 currently available for nesting birds to use. To ensure compliance with the Wildlife and Countryside Act, 1981 (as amended) the following action is required:

- ❖ Undertake any hedgerow removal outside the bird breeding season, which is generally considered to be from 1st March to 31st August (to cover all bird species, particularly multiple brood species). This option will avoid the need for a pre-works inspection to determine the presence of nesting/breeding birds.

If this option is not feasible and hedgerow removal has to go ahead within the bird breeding season, as defined above, then the following action will be taken:

- ❖ A nesting bird inspection immediately prior to the commencement of the vegetation removal (maximum of 2 weeks prior to work starting) will be undertaken. If nesting birds or birds constructing a nest are subsequently identified to be present, work in that area must cease until the nest is clear.

Regardless of time of year or findings from previous surveys, if nesting birds are found in the development site then work in the immediate vicinity should stop and an ecologist consulted.

This will protect nesting birds in accordance with Cherwell District Council Policy ESD10.

8.4 Bat roosting boxes

To provide an enhancement for roosting bats, five integrated bat roosting boxes (installed within the fabric of a cavity wall) will be installed; one on each house in Plots 1, 3, 4, 5 and 6, which provide suitable locations for bat boxes (see Appendix C and scheme elevation drawings).

The bat boxes will be installed as close to the roof apex on a southerly or westerly facing gable elevation of the new buildings (photo shows a bat brick *in situ* on a new building). No external lighting will be used adjacent to or shine directly at the bat box entrance slots. Clear lines of flight to the bat roost box entrances will be maintained at all times.



A range of bat boxes are available on-line (e.g. www.nhbs.com or www.wildcareshop.co.uk) with 'Habibat' and 'Ibstock' integrated bat bricks shown here, which can be set into the wall or faced with brick or timber.



The type and location of bat boxes will be determined during detailed design or as a condition of planning.

8.5 Bird nesting boxes

To provide an enhancement for nesting birds, a pair of swift nesting boxes will be incorporated into each new house within the proposed development providing a total of twelve nest boxes (see Appendix C and scheme elevation drawings).

The provision of swift boxes recognises the fact that the local area already supports a good population of breeding swifts in the summer and therefore aims to provide additional breeding sites for this existing population to allow it to expand. Swift nesting boxes are also readily used by a range of other small passerine birds such as house sparrow (*Passer domesticus*).

Integrated nest-boxes, i.e. ones fitting into the fabric of an external wall, will be installed. Each pair of swift boxes will be installed as high as possible under eaves of a northerly or easterly facing gable elevation. These locations provide shelter from direct sunlight.

A range of alternative bird boxes are available and can be viewed on-line (for example www.nhbs.com or www.wildcareshop.co.uk), with an example swift nest box shown below.



Vivara Pro Cambridge swift box (chamber and entrance brick)

This enhancement is in accordance with Cherwell District Council Policy ESD10.

8.6 Hedgerow planting

8.6.1 Habitat establishment

The opportunity to integrate new hedgerow within the proposed development or to in-fill gaps in existing field boundary hedgerows (H1 and H2) is encouraged. This enhancement is in accordance with Cherwell District Council Policy ESD10.

Species for hedgerow planting should be selected to complement hedgerows found locally, and plants should be native and sourced from a reputable nursery. Species could include hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), hazel (*Corylus avellana*), field maple (*Acer campestre*), spindle (*Euonymus europaeus*), dogwood (*Cornus sanguineum*), wild privet (*Ligustrum vulgare*) and wayfaring-tree (*Viburnum lanthanum*).

Trees that could be included in new hedgerow planting could include pedunculate oak (*Quercus robur*), field maple (*Acer campestre*), crab apple (*Malus sylvestris*) and wild cherry (*Prunus avium*).

Hedgerows should be planted as a minimum double-belt hedge (rows 500mm apart) at 330mm centres. Small groups (4-7 specimens) of the same species should be planted along the line of the hedgerow to ensure good heterogeneity.

Planting should take place between November and March. Newly planted areas should be inspected regularly for the first 3-5 years, and any significant gaps or dead plants must be replaced with new specimens.

8.6.2 Habitat management

Newly planted shrubs and trees will require annual maintenance after planting that could include: weeding (hand-pulling and herbicide application); fertiliser application; watering; and crown thinning of young trees ensuring development of a single strong leader.

Once established, boundary hedgerows should be managed to create a dense, bushy structure at a height of 2-3m with foliage down to ground level (internal hedges may be managed at a lower level). This would be achieved by an appropriate cutting regime as follows:

- ❖ Sides of the hedge managed less intensively than the tops of the hedge allowing sides to thicken-up. Cutting will not reduce the hedge height lower than 2m.
- ❖ Cutting should occur in January/February to maximise retention of berries.
- ❖ The specimens identified to grow into standard trees will be allowed to mature.

8.7 Tree planting

8.7.1 Habitat establishment

The opportunity to integrate new specimen trees within the proposed development is encouraged. This enhancement is in accordance with Cherwell District Council Policy ESD10.

Tree species should preferably be native specimens or cultivars, and sourced from a reputable nursery. Species could include pedunculate oak (*Quercus robur*), field maple (*Acer campestre*), wild cherry (*Prunus avium*), small-leaved lime (*Tilia cordata*), whitebeam (*Sorbus aria* agg) and silver birch (*Betula pendula*).

Planting should take place between November and March, and newly planted areas should be inspected regularly for the first 3-5 years, and any significant gaps or dead plants must be replaced with new specimens.

8.7.2 Habitat management

Trees should be formatively pruned or trimmed every 5-7 years. Specimen trees will be allowed to mature, and in the long-term some trees could be managed as pollards to add structural diversity.

8.8 Species-rich grassland

8.8.1 Habitat establishment

Floristically-rich, grassland could be created on communal open space on land to the west of the new houses. This enhancement is in accordance with Cherwell District Council Policy ESD10.

Species-rich grassland should be established using an appropriate seed mix obtained from a reputable seed house, for example, Emorsgate EM2 (Standard General Purpose Meadow Mixture), or equivalent. To improve the chances of a desired outcome the seed of yellow rattle (*Rhinanthus minor*), an annual root-hemi-parasite often present in moderate to low fertility grasslands, should be included in the specified seed mix.

Grassland seed mix should be sown preferably in the autumn (August-September) or alternatively in the spring (March-April). The seed will be surface sown and must not be covered with additional soil but instead rolled to give good soil/seed contact. Seeds will be sown at the rate specified by the supplier.

8.8.2 Habitat management

Most sown grassland species will be perennial and will be slow to germinate and grow, and will not usually flower in the first growing season. There will often be a flush of annual weeds from the soil in the first growing season, which will be controlled by topping or mowing. A minimum of three cuts will be undertaken in the first year with the clippings removed. This regime may also be required in the second year.

Once established the grassland will preferably be managed with an annual cut in late July / early August to give the sown flowering species an opportunity to flower and set seed. After flowering a cut will be undertaken to about 50mm sward height. The cut 'hay' will be left *in situ* to dry and shed seed.

Cut grass must be collected and removed from the grassland to avoid a build-up of nutrients that would favour more competitive, vigorous and undesirable plants.

Re-growth of the sward will be kept at a height of about 50mm by regular mowing, which should continue until late autumn (e.g. end of October).

Some weed control may need to be implemented when required, which could involve hand pulling of self-set, young woody species as well as the targeted use of herbicide for docks/thistles or other invasive or undesirable species which could appear.

8.9 Wildlife hibernacula

Two wildlife hibernacula (refugia piles) should be constructed by stacking 1-2m lengths of cut logs on top of each other. Openings into the log piles should be maintained at ground level, providing access for wildlife to seek refugia within the interior of the piles. The log piles should be inspected every 5 years and topped-up as required.

The log piles could be located at the base of boundary hedges. These decaying wood piles provide ideal habitat for saproxylic invertebrates (feed on deadwood), fungi and mosses. The log piles will also provide shelter for a variety of wildlife including small mammals.

8.10 Garden fencing

The use of close-boarded garden fencing within the development should be minimised if possible. However, where such fencing is used they should be fitted with small gaps at the base, approximately 10cm by 10cm, to allow small mammals to move between gardens. This is in accordance with Cherwell District Council Policy ESD10.

9 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 residential development, which avoids and protects the key habitats found along the boundaries of the application area and within the local landscape.

Residual adverse impacts include the permanent change of intensively managed arable land and a small cut through of an existing hedge to facilitate vehicle access to the site. Part of the arable land will be replaced by buildings and hard-standing. This residual impact is not considered to be significant.

As part of the scheme landscaping the remainder of the arable land will be established with gardens and green open space including some semi-natural habitats. Existing boundary hedgerows may be enhanced with in-fill planting, while new mixed native hedgerow, trees and species-rich grassland could be included within the scheme landscape design. Five bat roosting boxes and twelve swift nesting boxes, which provide additional nesting habitat for a local swift breeding population, will be installed within the development. The habitats and wildlife features will be managed in the long-term for the benefit of a range of wildlife including local protected/notable species.

In the long-term the proposed development will not alter the functioning of the retained boundary hedgerow habitat and, critically, appropriate habitat creation, enhancement and management will increase the overall habitat and structural diversity found within the application area. This will contribute to national and local biodiversity targets as well as providing a biodiversity gain in accordance with the Environment Act 2021.

The proposed scheme will not have adverse impacts on the ability of local wildlife to survive, breed or reproduce, to rear or nurture their young or to hibernate or migrate, and would actively improve the situation for target species especially bats and birds. The proposed scheme will not adversely affect the local distribution or abundance of local wildlife species.

Given the absence of a significant residual adverse impact combined with appropriate long-term habitat creation/enhancement and management that enhances the study area in the medium- to long-term for a range of wildlife, including protected and notable/priority species, found within the local landscape, the residual ecological effect of the proposed development is considered to be positive in a Local context.

The proposed development complies with both national and local planning policies (NPPF and Cherwell District Council Policy ESD10) to maintain and enhance biodiversity, in particular those habitats and species found on or adjacent to the application area that are identified as priorities in the UK and Oxfordshire.

10 References

Andrews, H (2018). *Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*. Pelagic Publishing

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.

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

Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London

Prime Environment (2018a). *Ecological Impact Assessment, Land West of Hook Norton Road, Sibford Ferris, Oxfordshire*.

Prime Environment (2018b). *Bat Activity Results Report, Land West of Hook Norton Road, Sibford Ferris, Oxfordshire*.

Appendix A Aerial Image with Ecology Target Notes



Appendix B Site Photographs



View across arable field looking northwest (left) and southwest (right)



View across field looking southeast (left) and northeast (right)



View along hedgerow H1 on western boundary (left) and along hedgerow H2 on southern boundary (right)



Views along eastern boundary at southern end (left) and northern end (right)



Two mature oak trees in H1 with low potential to support roosting bats (left) and four semi-mature oak trees in H2 with overhead wires (right)



Woodway Road adjacent to the western boundary (left) and arable field immediately south of the development site (right)

Appendix C Location of Bat and Bird Boxes



- 1no. Bat Brick (Habitat)
Total - 5 Bat Bricks
- 2no. Swift Bricks
Total - 12 Swift Bricks

Rev	Date	Details	Rev	Status
4349	3	52	-	FOR COMMENT

Scale	Size	Drawn	Check	Creation
1:500	A3 L	BG	IB	2021.12.09

Sibford Ferris
OX15 5QW
Bat & Bird Brick Location Plan
As Proposed



THIS DRAWING IS COPYRIGHT ©
Responsibility is not accepted for errors made by others in scaling from this drawing
All construction information should be taken from figured dimensions only
Discrepancies must be reported to the Architect before proceeding