



ECOLOGYSOLUTIONS

Part of the ES Group

ASTERLEIGH FARM,
KIDDINGTON

Ecological Assessment

October 2023
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1. INTRODUCTION

1.1. Background and Proposals

- 1.1.1. Ecology Solutions (Manchester) Limited were commissioned by Juxon Limited to undertake an assessment of the buildings and land at Asterleigh Farm, Kiddington, hereafter referred to as the Application Site.
- 1.1.2. The Development Proposals are for conversion of the traditional farm buildings into three residential plots with associated amenity gardens. The plots utilise the existing access and parking arrangements.

1.2. Application Site Characteristics

- 1.2.1. The Application Site is located at Asterleigh Farm, Kiddington, and is surrounded by arable land. The Site is centred at OS Grid Reference SP402222, located in the area of Kiddington.
- 1.2.2. The Application Site itself comprises 12 farm buildings and associated hardstanding. Semi-natural habitats include small sections of a managed grass field (paddock), a small collection of mature trees, scattered scrub, and hedgerows.
- 1.2.3. The wider area is almost entirely comprised of arable farmland, with open countryside, including woodland further afield.

1.3. Ecological Assessment

- 1.3.1. This document assesses the ecological interest of the Application Site as a whole. The importance of the habitats present is evaluated with regard to current guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)¹.
- 1.3.2. This report also sets out existing baseline conditions for the Application Site, setting these in the correct planning policy and legal framework, and assessing any potential impacts which may occur as a result of the Proposed Development. Appropriate mitigation, where necessary, is identified such that it will offset any negative impacts, whilst opportunities to deliver significant ecological enhancements are sought within the Application Site, in accordance with relevant planning policy.

¹ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1*. Chartered Institute of Ecology and Environmental Management, Winchester.

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas; namely desk study, habitat survey, and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the Application Site and its immediate surroundings, Ecology Solutions contacted the Thames Valley Records Centre (TVRC).

2.2.2. Information has been provided by TVRC and is referenced within this report, where appropriate. Information regarding designated sites is also shown where appropriate on Plan ECO1.

2.2.3. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)² database. This information is included, where appropriate, on Plan ECO1.

2.3. Habitat Survey Methodology

2.3.1. Habitat surveys were carried out in July and August 2022, to ascertain the general ecological value of the land contained within the boundaries of the Application Site, and to identify the main habitats and associated plant species, with notes on fauna utilising the Site where relevant (not least, opportunities for roosting bats).

2.3.2. The Application Site was surveyed based around extended UK Habitat Classification (UKHab), as recommended by Natural England (NE), whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the Application Site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The habitats within the Application Site are illustrated on Plan ECO2.

2.3.4. All the species that occur in each habitat would not necessarily be detected during survey work carried out at any given time of the year, since different species are apparent during different seasons.

2.3.5. However, given the survey was undertaken at an optimal time of year, and noting the Application Site predominantly comprises developed land with very little semi-natural habitat, it is considered an accurate and robust assessment has been made.

² <http://magic.defra.gov.uk>

2.4. Faunal Survey

- 2.4.1. General faunal activity, observed during the course of the survey, whether visually or by call, was recorded. Specific attention was paid to the potential presence of any protected, rare, notable or Priority Species. In addition, specific surveys were undertaken for bats, Barn Owl *Tytus alba* and Badgers *Meles meles*.
- 2.4.2. **Bats.** Initial bat survey work was undertaken in July 2022 to assess the potential for roosting bats within trees and structures on and adjacent to the Site. Updated internal and external surveys were also undertaken in October 2023 to assess if any changes had occurred to the structures. The work was overseen by an experienced bat worker and aimed to establish the likely presence/absence of bats. This survey also provided an evaluation of the quality of habitats present within the Site for foraging and commuting bats.
- 2.4.3. Field surveys were undertaken with regard to best practice guidelines issued by NE (2004³), the Joint Nature Conservation Committee (JNCC) (2004⁴) and the Bat Conservation Trust (2016⁵).
- 2.4.4. The probability of a building/structure being used by bats as a summer roost site increases if it:
- is largely undisturbed;
 - dates from pre 20th century;
 - has a large roof void with unobstructed flying spaces;
 - has access points for bats (though is not too draughty);
 - has wooden cladding or hanging tiles; and
 - is in a rural setting and close to woodland or water.
- 2.4.5. Conversely, the probability decreases if a building/structure is of a modern or pre-fabricated design/construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.
- 2.4.6. The main requirements for a winter/hibernation roost site are it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include trees with cavities/holes, underground sites, and parts of buildings. Whilst different species may show a preference for one of these types of roost site, none are solely dependent on a single type.
- 2.4.7. All trees within or adjacent to the expected 'development footprint' were assessed for their potential to support roosting bats.
- 2.4.8. For a tree to be classed as having some potential for roosting bats it must usually have one or more of the following characteristics:

³ Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

⁴ Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.

⁵ Collins, J. (Eds.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. Bat Conservation Trust, London.

- obvious holes, e.g. rot holes and old Woodpecker holes;
- dark staining on the tree below a hole;
- tiny scratch marks around a hole from bats' claws;
- cavities, splits and/or loose bark from broken or fallen branches, lightning strikes etc.;
- very dense covering of mature Ivy *Hedera helix* over the trunk.

2.4.9. Evening emergence surveys and dawn re-entry surveys were undertaken in July, August, September, and early October 2022, to ascertain if any of the buildings on Site were utilised by roosting bats. Surveyors were positioned in suitable locations to observe all potential aspects of the buildings, and establish whether any bats were entering or emerging from the buildings surveyed. Surveyors utilised EchoMeter Touch 2 Pro (EMT 2 pro) bat detectors to record the data which, together with direct observation, was used to identify the species present and record the number of bat passes. If bats were detected, walking stopped and observations were made on the bat's behaviour i.e. foraging or commuting, species identification, and numbers present.

2.4.10. Evening emergence surveys were undertaken from approximately 15 minutes before sunset until between 1.5 to 2 hours after sunset, and dawn re-entry surveys were undertaken approximately 1.5 hours before sunrise until fifteen minutes after sunrise.

2.4.11. Following the completion of the surveys, all the recorded data was subsequently analysed using the Kaleidoscope Pro bat sound analysis software.

2.4.12. Surveys were conducted when night-time temperatures were above 10°C. The insectivorous diet of bats means there is reduced food available when temperatures fall below this level, and consequently levels of activity are low and may not accurately reflect the value of the Site for bats. The weather conditions for the surveys were recorded and any limitations noted.

2.4.13. **Badgers.** A Badger survey was undertaken at the Application Site in August 2022 and updated in October 2023. This comprised two main elements. The first of these was a thorough search for evidence of Badger setts. For any setts encountered each sett entrance was recorded and plotted, even if the entrance appeared disused. This included recording the following information where appropriate:

- The number and location of well used or very active entrances; these are clear of any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently;
- The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance;

- The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground, where the hole once was, and the remains of the spoil heap.
- 2.4.14. Secondly, evidence of Badger activity, such as well-worn paths and run-throughs, snagged hair, footprints, latrines, and foraging signs, was also searched for in order to build up a picture of Badger usage in the area.
- 2.4.15. **Barn Owl.** Detailed surveys for Barn Owl were initially undertaken in July 2022 and updated in October 2023 by an experienced Barn Owl surveyor. These surveys included for internal and external inspections of all buildings on Site using the 'bottom up' survey approach endorsed by the Barn Owl Trust. This approach involves the completion of detailed internal and external searches, beginning in the least suitable buildings/features and progressing towards more suitable habitats.
- 2.4.16. Any confirmed or potential evidence of Barn Owl, including direct observations of animals, or evidence such as feathers, nesting materials or pellets were recorded, including observations on the age of this evidence.
- 2.4.17. In addition to daytime internal/external surveys, specific attention was paid to Barn Owl during the completion of night-time bat survey work in 2022, with any observations of Barn Owl emergence or re-entry to buildings recorded.

Survey Approach and Limitations

- 2.4.18. **Bats.** Due to adverse weather conditions, one of the bat re-entry surveys scheduled in late September was cancelled, with an emergence survey undertaken in early October 2022 instead. It is noted that whilst this survey is outside the 'optimal' emergence/re-entry survey period, weather conditions remained unseasonably mild into autumn, and the data set gathered from the suite of surveys is concluded to be sufficiently robust.
- 2.4.19. **Barn Owl.** Barn Owl were recorded within the Application Site and, based on both field evidence and reports from the landowner, are considered to be breeding within the Site.
- 2.4.20. Due to the poor structural condition of building B7, the suspected to be a nest site, the precise nest location was not located. Nonetheless, based on the surveys undertaken, not least the extensive night-time observations, it is considered the presence of a nest site in the conjoined roof space of B3/B7 is highly likely. This is considered a reasonable and precautionary stance and is sufficient for robust impact assessment and mitigation to be identified.

3. ECOLOGICAL FEATURES

- 3.1. The Application Site was subject to ecological habitat survey work by Ecology Solutions in July and August 2022. The vegetation present enabled the habitat types to be satisfactorily identified and an accurate assessment of the ecological interest of the habitats to be undertaken.
- 3.2. The following main habitat/vegetation types were identified within the Application Site:
 - Buildings and hardstanding
 - Modified grassland
 - Tree belt
 - Hedgerow.
- 3.3. The location of these habitats is shown on Plan ECO2.
- 3.4. Each habitat present is described below with an account of their representative plant species.

Buildings and Hardstanding

- 3.5. The majority of the Application Site comprises a collection of built form and associated hardstanding. There are 12 buildings in total (**B1 to B12**) within the Application Site, excluding a residential farm house, which is located to the west of the Site and will remain unaffected by the Proposed Development. Please see building photographs at Appendix 1.
- 3.6. Six of the buildings (**B4, and B8 to B12**) comprise modern, prefabricated industrial sheds, while the remaining buildings comprise traditional stone agricultural buildings with slate tile rooves.
- 3.7. Each of these buildings are described below, and their locations are illustrated on Plan ECO2.
- 3.8. **B1** and **B2** are single storey stable blocks, with thick stone and brick walls. They have pitched slate tile roofs, with many slipped and hanging tiles present. There is no internal roof lining, and the tiles are laid directly on timber struts and beams forming the roof's structural components. The stone walls are in poor condition, with gaps and crevices in the brick work. There is no loft void present.
- 3.9. **B3** comprises a series of adjoining stone barns which are connected internally. B3 is split into five sections; **B3a to B3e**. Generally, B3 is in poor condition with many gaps and crevices in the stone and brick work. The roof complex has many slipped tiles, and large gaps where tiles are missing. Detailed descriptions of each building section are considered below.
- 3.10. **B3a** is a tall, two-storey agricultural building, historically used as a threshing barn. As such, on the northern aspect is a double height, corrugated iron sliding door. Underneath a gap in the stone wall is boarded up with wooden slats with large gaps between them. It has a pitched slate tile roof and stone walls, with three slit windows on the north

aspect, two to the west of the door and one to the east of the door. These windows are approximately 5cm wide and 50cm long. The eastern gable end attaches directly onto B3b. The roof is in poor condition with multiple missing and broken tiles, including missing and broken ridge tiles. There is no loft void in B3a.

- 3.11. The interior of **B3a** is similar to **B3c**, to which it is directly connected. It is light and airy with no loft void. It is also directly connected to **B3b** via a low doorway.
- 3.12. **B3b**, directly adjacent to B3a, is a two-storey agricultural barn, also historically used as a threshing barn. It has a pitched slate tile roof and walls comprising half stone (ground storey) and half red brick (second storey). There are three square windows on the northern aspect of the ground floor, these are boarded over, and two smaller rectangular windows in the second storey, northern aspect. B3b is in poor condition and, due to being structurally unsound, the second storey of the building was not directly accessed during the survey.
- 3.13. The interior of B3b on the ground floor is considerably darker than B3a, with the boarded windows allowing almost no natural light to enter. A dead Barn Owl carcass (suspected juvenile) was found on the floor of B3b. Hundreds of Barn Owl pellets were noted on the floor.
- 3.14. It is evident from the internal inspection that the roof of B3b includes for large gaps and openings, resulting in a light, exposed interior to the loft void / first storey.
- 3.15. **B3c** comprises a tall agricultural barn; timber and steel framed with stone walls and a pitched slate roof. In the southern aspect of the building there are large double, sliding, corrugated iron doors, in a style similar to B3a. Above the doors is a round window, currently boarded up with wooden slats. B3c adjoins B3a and is surrounded by B3e and B3d to the west and east respectively. There is no loft void in B3c.
- 3.16. The interior of B3c is bright, open, and airy. It was historically used as an agricultural shed, and although it is two storeys tall has no internal second storey. It possesses a vaulted ceiling with many wooden and steel beams criss-crossing the internal space. It is currently used for informal storage and recreational purposes (sport and gym equipment present).
- 3.17. **B3d** is a single storey, agricultural barn constructed in the same style as B1 and B2. It has a stable door and one rectangular window (boarded up) on the eastern aspect. A large section of the roof on the eastern aspect has collapsed and thus the interior is almost completely exposed to the elements. On account of its poor condition the building was only partially accessible. It is understood there is no loft void in B3d.
- 3.18. **B3e** is a small single storey outhouse with a pitched slate tile roof attached to the west wall of **B3c**. There are many slipped and missing roof tiles, and multiple cracks and crevices in the stone walls on each aspect. An internal examination was not possible at the time of survey.

- 3.19. The interiors of B3d and B3e were inaccessible at the time of survey due to concerns over structural soundness.
- 3.20. **B5** is a single storey agricultural barn (formerly a piggery), now disused. It has stone walls and a pitched slate tile roof, as per B1 and B2. Four wooden stable doors are evenly spaced along the northern aspect of the building, which faces the courtyard framed by B5, B3d, B7 and B6. There are no windows. The building is in moderate condition but, as with the other stone buildings, has many slipped and missing tiles from the roof. The interior of B5 was inaccessible at the time of survey but it is understood there is no loft void present.
- 3.21. **B6** is a two-storey agricultural barn, formerly a hay barn, now utilised as a stone mason storage unit with temporary lighting. It has stone walls and a pitched slate tile roof. There are two small windows in the southern gable end of the building, and a wooden door and small, second storey window in the western aspect of the building. There is a rectangular wooden door set into the second storey of the northern aspect. As per B5, the roof is in generally poor repair with many slipped and missing tiles. There are also several cracks and crevices in the stone work of the walls on each aspect. The interior of B6 was inaccessible at the time of survey.
- 3.22. **B7** is a large two-storey stone walled barn with slate tile pitched roof. The walls support many gaps and crevices in the stonework exterior. The roof has many slipped and missing tiles and gaps beneath the apex ridge tiles. B7 was also formerly used as a threshing barn, it contains a hay door on the northern aspect of the building which is covered with a wooden sliding door, approximately 2m above the ground.
- 3.23. **B9** is a modern single-storey agricultural barn, approximately 5m tall, with metal panel walls and an asbestos corrugated roof. There is wooden cladding on the upper section of exterior walls, many of the planks are damaged and have warped. Overall the building is in good condition. The barn is currently used for storing farm machinery. There is no loft void present.
- 3.24. **B10** is a modern, single storey agricultural building, approximately 4m tall, with a stone gable end, breeze block walls and corrugated asbestos cladding. Insulation is packed behind the asbestos cladding on the walls. The type of insulation could not be discerned due to the presence of asbestos. The roof appears to be corrugated asbestos. The building is used for grain storage. There is no internal loft void. There were some cracks in the asbestos cladding but otherwise the building appeared to be in generally good condition.
- 3.25. **B4, B8, B11** and **B12** are all open sided modern barns with metal or asbestos corrugated roofs. They all have open, exposed interior spaces with no interior walls. They are all in generally good condition with some limited damage to the roofs and walls.
- 3.26. It was noted during the internal survey within **B8** had a large number of Owl pellets located on the floor.

- 3.27. Hardstanding within the Application Site comprises concrete, surrounding the buildings, with no significant vegetation present. A gravel road runs through the Site from east to south around the main cluster of buildings.

Modified Grassland

- 3.28. The majority of the semi natural habitat on Site comprises species poor modified grassland in poor or moderate condition.
- 3.29. **F1**. This is the largest area of grassland on the Application Site. It is classified as modified grassland, in moderate condition, with a localised patch of ruderal within. It supports <8 species per m² on average. The sward is dominated by grass species (75%) including Yorkshire Fog *Holcus lanatus*, with abundant Cock's Foot *Dactylis glomerata* and False-oat Grass *Arrhenatherum elatius*. Couch Grass *Elytrigia repens* and Perennial Rye *Lolium perenne*, with occasional Annual Meadow Grass *Poa annua* and Creeping Bent *Agrostis stolonifera*. Tufted Hair Grass *Deschampsia cespitosa* and Smaller Cat's Tail *Phleum bertolonii* appeared localised and rarely occur across the sward.
- 3.30. Herbs noted throughout the sward were only rarely recorded and include Ladies Bedstraw *Galium verum*, Ragwort *Jacobaea vulgaris*, Yarrow *Achillea millefolium*, Bristly Oxtongue *Helminthotheca echioides*, Broad Leaved Dock *Rumex obtusifolius*, Ribwort Plantain *Plantago lanceolata*, Red Bartsia *Odontites vernus* (single individual), Field Bindweed *Convolvulus arvensis*, Bush Vetch *Vicia sepium*, Groundsel *Senecio vulgaris*, with Common Knapweed *Centaurea nigra* appearing rarely across **F1**.
- 3.31. The patch of **ruderal vegetation** in **F1** is on the west side of **B7** and **B8**, north of **B1**, and is surrounded by grassland on all sides. Primarily it consists of Common Nettle *Urtica dioica* with occasional Teasel *Dipsacus fullonum*, Common Thistle and rare occurrences of Greater Burdock *Arctium lappa*.
- 3.32. **F2** is modified grassland surrounding B8, with a very short, regularly mown sward that shares margins with an arable field to the east and south. It is considered in poor condition due to lack of species diversity and sward structure (with less than 6 species per m² on average). Grass species make up 85% of the sward and is predominantly Perennial Rye and Cocksfoot *Dactylis glomerata*. The margins contain Red Fescue *Festuca rubra*, Yarrow, Smaller Cats Tail. Occasional Dandelion *Taraxacum officinale*, Ribwort Plantain *Plantago lanceolata*, White Clover *Trifolium repens*, Creeping Buttercup *Ranunculus repens* and Yorkshire Fog is present in **F2**, and rarely Field Bindweed and Herb Robert *Geranium robertianum*.
- 3.33. **F3**, as per **F2**, appears to be used mostly for corralling horses, and as such has a short sward (approximately 5cm) that is regularly grazed but has a higher proportion of bare ground (approximately 65%). As well as the species present in **F2** there is an addition of rare Bramble *Rubus fruticosus* and Purple Mallow *Malva sylvestris*.

- 3.34. **F3a** has a very similar species composition to **F3** but with a higher percentage of Yarrow. Both **F3** and **F3a** are considered in poor condition due to lack of species diversity (with less than 6 species per m² on average) and structure.
- 3.35. **F4**. This modified grassland is located adjacent to the access road running east to west. It is modified grassland in moderate condition, and borders arable fields to the north and south of the road. The species composition is broadly comparable to that of F2 with additional, infrequent examples of Mallow *Althaea officinalis*, Red Campion *Silene dioica*, Timothy *Phleum pratense*, Ox-eye Daisy *Leucanthemum vulgare* and Crested Dogs-Tail *Cynosurus cristatus*. The margins of the grassland contain Ivy *Hedera helix*, Greater Plantain *Plantago major* and Cow Parsley *Anthriscus sylvestris*.
- 3.36. Overall, the incidental areas of modified grassland, F2, F3, F3a and F4 are considered of low ecological value. F1 has a slightly elevated value in the context of the site, simply on account of its larger extent and less intensive management. It is understood F1 and F4 will remain unimpacted by the Proposed Development.
- 3.37. **Bare Ground**. A small area of bare ground with very limited vegetation cover, comprising species such as Broad Leaved Dock and Ragwort, is located to the north of B9, bordering the arable field to the north. It is of no intrinsic ecological value.

Tree Belt and Hedgerow

- 3.38. Within the Application Site there is one hedgerow (**H1**) and two tree lines (**TL1** and **TL2**). All the linear features are proposed to remain unaffected by the Proposed Development.
- 3.39. **H1** is a mature, mixed native and non-native hedgerow located along the southern boundary of a private garden in the west of the Application Site. It is dominated by Hawthorn *Crataegus monogyna* with occasional Ivy and Ornamental Privet *Ligustrum ovalifolium*.
- 3.40. **TL1**. A treeline located adjacent to the access road to the east of the Application Site. The trees range from semi-mature to mature and the species composition consists of predominantly Sycamore *Acer pseudoplatanus* with occasional Wild Cherry *Prunus avium*.
- 3.41. **TL2**. This tree line is located adjacent to the farmhouse on the western side, bordering **F1**. The species composition includes for Plum *Prunus subg. Prunus*, Blackthorn *Prunus spinosa* and Elder.
- 3.42. **Background Information**
- 3.42.1. The desk study undertaken with TVERC returned no records of any protected or notable species from within or directly adjacent to the Application Site.
- 3.42.2. Four records of Bluebell *Hyacinthoides non-scripta* were returned, with the closest and most recent relating to a location approximately

1.2km south-west of the Application Site at its closest point, dating from 2017. Two records of Bird-Nest Orchid *Neottia nidus-avis* were returned at 2km west of the Application Site in 2002. Ten records of Downy Woundwort *Stachys germanica* were returned, with the closest point and dates relating to a location 2km south of the Application Site in 2004.

4. WILDLIFE USE OF THE APPLICATION SITE

4.1. During the survey work undertaken across the Application Site, general observations have been made of any faunal use, with specific attention paid to the potential presence of protected or notable species. Moreover, specific surveys were completed for bats, Badgers and birds.

4.2. Bats

Internal/External Surveys

4.2.1. As described above, the buildings within the Application Site were subject to external and, where possible, internal surveys in July and August 2022. This involved detailed searches within the buildings for evidence of current and past use by bats. The internal and external surveys were updated in October 2023 to assess if any significant changes had occurred in the intervening period.

4.2.2. No evidence of the presence of bats was recorded in any of the buildings present within the Application Site during the initial assessment. An individual account of the potential suitability of each building to support roosting bats is provided below.

4.2.3. **B1** and **B2**. As above, no evidence of roosting bats was recorded during the internal and external inspections of **B1** and **B2**, either in the form of droppings or other signs, such as scratches or staining. Notwithstanding the absence of any evidence, it was noted the buildings supported a moderate number of features suitable to support roosting bats, such as slipped or broken tiles, gaps at eaves, gaps between roof tiles, and crevices in the stone walls. Due to the lack of an enclosed void or roof lining (considered to temper opportunities for both void and crevice dwellers), **B1** and **B2** were deemed to be of moderate potential suitability to support roosting bats.

4.2.4. **B3**. No evidence of roosting bats was noted during the internal and external surveys of this building complex. Notwithstanding the absence of any evidence, it was noted the buildings supported a moderate number of features suitable to support roosting bats. This includes overhanging eaves, slipped and broken tiles, as well as extensively damaged walls with cracks and crevices present throughout. Again, the lack of roof lining and existing damage (large gaps in the roof leading to exposed internal conditions) means **B3** was initially deemed to be of moderate bat roosting potential. It is noted bat potential was subsequently upgraded, following observations during the emergence surveys (see below).

4.2.5. **B5**, **B6** and **B7**. Whilst no evidence of roosting bats was observed during the internal and external surveys, these buildings support many features suitable for bat roosting. They each have slipped and broken tiles, as well as gaps beneath the apex tiles. These buildings all have overhanging tiles and gaps in the eaves. The stone walls have many cracks and crevices present throughout. Due to the frequency of these features **B5**, **B6** and **B7** were all deemed to have a high potential for roosting bats.

- 4.2.6. **B9.** Showed no evidence of roosting bats during the internal and external survey. This building is comprised of metal girders, breeze blocks with exterior wood cladding, and a corrugated roof with no lining. It has some limited features suitable for roosting bats. The upper half of the external walls has lengths of wooden plank panelling, with some damage and warping allowing for crevices. These spaces, however, are still more exposed than would be suitable for bats. On a precautionary basis, **B9** was deemed to have low potential for roosting bats.
- 4.2.7. **B10.** There were no signs of bat roosting found during the internal and external survey, and the building supports only a limited number of sub-optimal features suitable for roosting bats. The external corrugated asbestos cladding offers some access to the crevices and packed insulation behind it. Due to this feature **B10** has been deemed to have a low potential for roosting bats and, as with **B9**, underwent one precautionary night-time survey.
- 4.2.8. **B4, B8, B11 and B12.** Showed no evidence of roosting bats during the internal and external surveys. They are all modern, open and exposed barns, generally in good condition, with a distinct lack of crevices or other potentially suitable roosting features. The metal-based fabrication means the buildings can be expected to fluctuate greatly in temperature, contributing to them being unsuitable for roosting bats. For the aforementioned reasons these buildings were deemed to have no bat potential.
- 4.2.9. On the basis of the above, follow up emergence and re-entry surveys were conducted on relevant buildings at the Application Site in 2022, the findings of which are detailed below (see Emergence/Re-entry Surveys and Table 2).
- 4.2.10. **Trees.** The Application Site supports a small number of trees, with ages ranging from semi-mature to mature. A detailed inspection of those trees located in/adjacent to the Proposed Development footprint were undertaken in August 2022 and updated in October 2023. Two trees were deemed as having potential for roosting bats.
- 4.2.11. **T1** is a mature Sycamore, adjacent to the entrance of the eastern access road. One rot hole was present (historic limb loss), approximately 3m up, on the south side of the tree. Another knot hole, which cannot be seen from the ground, is present on the western side of the tree. This tree has been deemed to have a high potential for roosting bats.
- 4.2.12. **T2** is a mature Sycamore on the southern side of the eastern access road. There is a crack present along a dead limb providing a small space for crevice dwelling bats. This tree has been deemed to have low potential for roosting bats.
- 4.2.13. No trees with potential for roosting bats are considered adversely impacted by the Development Proposals on the Application Site.

Bat Emergence/Re-entry Surveys

4.2.14. In order to ascertain whether any of the buildings within the Site were being utilised by roosting bats, a suite of bat emergence and re-entry surveys were undertaken at eight of the twelve buildings in July, August, September and October 2022. The number of surveys for each building are summarised below:

- One survey (low potential): B9, B10
- Two surveys (moderate potential): B1, B2
- Three surveys (high potential/bat evidence recorded): B3, B5 to B7

4.2.15. The remaining buildings were not subject to further survey.

4.2.16. The dates, times and weather conditions for the surveys are detailed in Table 1 below.

Date	Survey type	Buildings Surveyed	Weather Conditions
26.07.2022	Emergence Start: 20:50 Finish: 22:30	B6 & B7	18C, clear sky, still, dry
28.07.2022	Emergence Start: 20:47 Finish: 22:32	B9	19C, 100% cloud cover, slight breeze, dry
04.08.2022	Emergence Start: 20:36 Finish: 22:30	B3 & B5	17C, cloud cover 30%, light breeze, dry
05.08.2022	Re-entry Start: 03:30 Finish: 05:45	B10 & B2	13C, 10% cloud cover, very light breeze, dry
09.08.2022	Emergence Start: 20:42 Finish: 22:30	B1	25C, 10% cloud cover, clear, dry
17.08.2022	Re-entry Start: 04:24 Finish: 06:05	B6 & B7	16C, 75% cloud cover, light wind, dry
25.08.2022	Emergence Start: 19:55 Finish: 22:10	B2	16C, clear sky, no wind, dry
26.08.2022	Re-entry Start: 04:10 Finish: 06:25	B1	13C, 20% cloud cover, light breeze, dry
26.08.2022	Emergence Start: 19:50 Finish: 22:06	B3 & B5	20C, 10% cloud cover, no wind, dry
27.09.2022	Emergence Start: 18:44 Finish: 20:53	B6 & B7	13C, 50% cloud cover, light breeze, dry
11.10.2022	Emergence Start: 18:05 Finish: 19:50	B3 & B5	12C, 5% cloud cover, no wind, dry

Table 1: Dates, timing, and weather conditions experienced during bat emergence surveys

Buildings B1 and B2

4.2.17. With regards buildings **B1 and B2**, no bats were observed emerging from these buildings during either the emergence or re-entry survey. These surveys were conducted in optimal weather conditions with two surveyors covering each building.

4.2.18. On the basis of this survey work, **B1 and B2** are not considered to support roosting bats.

Building B3

4.2.19. With regards to building **B3**, three emergence surveys were conducted, with a total of five surveyors, in August, September and October 2022.

4.2.20. B3 is subdivided into B3a, B3b, B3c, B3d and B3e (please see Plan ECO2) for ease of reporting and accuracy regarding roost location.

4.2.21. As mentioned above, B3 was initially considered to be of moderate bat roosting potential but, upon observing two bats emerge from B3c and B3d on the 4 August 2022, it was elevated to confirmed roost status and therefore the entire building was subject to an additional survey (three surveys in total).

4.2.22. One Common Pipistrelle *Pipistrellus pipistrellus* was observed emerging from B3d, from beneath a tile at the edge of the roof at the southern aspect of the building, on the 4 August 2022 at 21:36.

4.2.23. One Soprano Pipistrelle *Pipistrellus pygmaeus* was observed emerging from B3c, from beneath a tile above the southern aspect of the building, on the 4 August 2022 at 21:13.

4.2.24. On 26 August 2022 at 20:55, one Common Pipistrelle and a Brown Long-eared bat *Plectous auritus* was observed emerging from the interior of B3a, through a gap in horizontal wooden boards approximately 3m from the ground, on the northern aspect of the building.

4.2.25. A *Myotis* sp. bat was observed emerging from a window slit in the stone wall of the northern aspect of building B3a, approximately 2m from the ground, at 20:36 on the 26 August 2022. The gap is approximately 5cm wide and 50cm long. Detailed call analysis of this registration was undertaken to further assist species identification. On the basis of sound analysis, alongside consideration of the ecological preferences of the species, it is concluded the emergence likely pertained to Whiskered bat *Myotis mystacinus*.

4.2.26. On the 11 October 2022, seven separate emergences were observed from the roof of B3d and B3c, each emergence is further detailed below.

4.2.27. One Common Pipistrelle was observed emerging at 18:47 from a gap under a slipped tile on the roof of B3d, approximately 5m from the southern aspect of the building, approximately 20cm from the apex on the eastern aspect of the roof.

- 4.2.28. One Brown Long-eared bat was observed emerging at 18:51 from a gap between broken and slipped tiles on the eastern aspect of the roof of B3d, approximately 15cm from the edge of the roof.
- 4.2.29. Two Common Pipistrelles were observed emerging from the same location as the above at 18:53 and 18:59 respectively.
- 4.2.30. A Common Pipistrelle was observed at 18:51 emerging from a gap in slipped and broken tiles located midway up the eastern aspect of the roof of B3d, approximately 10m from the southern aspect of the building.
- 4.2.31. A single Soprano Pipistrelle was observed emerging at 18:55 from beneath a broken tile at the gable end of the roof of B3c.
- 4.2.32. On the basis of this survey work B3a, B3c and B3d are considered to support summer day roosts for low numbers of Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bats.

Building B5

- 4.2.33. No bats were observed emerging from B5 during either emergence or re-entry. These surveys were conducted in optimal weather conditions, with two surveyors covering the building.
- 4.2.34. On the basis of this survey work, **B5** is not considered to support roosting bats.

Building B6

- 4.2.35. A single Common Pipistrelle was observed re-entering building **B6** at 05:34 on the 17 August 2022. It re-entered a small crevice, approximately 2cm wide, in the stone wall of the western aspect of the building, approximately 2m from the ground.
- 4.2.36. No other emergences or re-entries of this building were observed during the course of the surveys. On the basis of this survey work, **B6** is considered to support a summer day roost for low numbers of Common Pipistrelle bats.

Building B7

- 4.2.37. No bats were observed emerging from **B7** during either emergence or re-entry. These surveys were conducted in optimal weather conditions with two surveyors covering the building.
- 4.2.38. On the basis of this survey work, **B7** is not considered to support roosting bats.

Buildings B9 and B10

- 4.2.39. No bats were observed emerging from B9 or B10 during either emergence or re-entry surveys. These surveys were conducted in optimal weather conditions, with two surveyors covering the building.

- 4.2.40. On the basis of this survey work, **B9** and **B10** are not considered to support roosting bats.

Buildings B4, B8, B11 and B12

- 4.2.41. These buildings were all considered to have negligible bat roosting potential and so were not subject to presence/absence surveys.

Roost Summary

- 4.2.42. A summary of the emergence and re-entry observations are detailed in Table 2 below.

Building	Surveys	Observations
B1	Emergence 09.08.2022	No emergence/re-entry observed
	Re-entry 26.08.2022	No emergence/re-entry observed
B2	Re-entry 05.08.2022	No emergence/re-entry observed
	Emergence 25.08.2022	No emergence/re-entry observed
B3	Emergence 04.08.2022	1 Soprano Pipistrelle observed emerging from B3d at 21:36 1 Common Pipistrelle observed emerging from B3c at 21:13
	Emergence 26.08.22	1 Common Pipistrelle and 1 Brown Long-eared emergence at 20:55 from B3a 1 <i>Myotis sp</i> emergence at 20:36 from B3a (suspected Whiskered Bat)
	Emergence 11.10.22	1 Common Pipistrelle emergence at 18:47 1 Brown Long-eared emergence at 18:51 1 Common Pipistrelle emergence at 18:53 1 Common Pipistrelle emergence at 18:59 All from B3d 1 Common Pipistrelle emergence at 18:51 from B3d 1 Soprano Pipistrelle emergence at 18:55 from B3c
B4	N/A (unsuitable)	
B5	Emergence 04.08.2022	No emergence/re-entry observed
	Emergence 26.08.22	No emergence/re-entry observed

Building	Surveys	Observations
	Emergence 11.10.22	No emergence/re-entry observed
B6	Emergence 26.07.2022	No emergence/re-entry observed
	Re-entry 17.08.2022	1 Common Pipistrelle observed re-entering a crevice in the wall of B6 at 05:34
	Emergence 27.09.2022	No emergence/re-entry observed
B7	Emergence 26.07.2022	No emergence/re-entry observed
	Re-entry 17.08.2022	No emergence/re-entry observed
	Emergence 27.09.2022	No emergence/re-entry observed
B8	N/A (unsuitable)	N/A
B9	Emergence 28.07.2022	No emergence/re-entry observed
B10	Re-entry 05.08.2022	No emergence/re-entry observed
B11 & 12	N/A (unsuitable)	N/A

Table 2: Observations made at Building B1 to B3, B5, B6 and B7, B9 and B10 during emergence/re-entry surveys in 2022.

Bat Activity

- 4.2.43. Given its small size and developed nature, the Application Site is deemed highly unlikely to be of any significant value to foraging and commuting bats in the local area. In any event, the vast majority of potential suitable habitat for bats is to be retained as part of the Proposed Development.
- 4.2.44. Noting the above and that, in any event, sufficient contextual information was gathered during the completion of emergence and re-entry survey work (indeed this was a secondary objective of those surveys), it was not considered necessary to complete specific bat activity surveys at the Application Site.
- 4.2.45. Bat species recorded as utilising the wider Site during the completion of the emergence and re-entry surveys included for Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared Bat, Barbastelle, *Myotis sp.*, Serotine, Noctule and Leisler's.
- 4.2.46. Overall, the surveys recorded a modest level of bat activity across the Application Site. Common Pipistrelle were by far the most frequently recorded.

- 4.2.47. The species/genus of bats and number of registrations noted across the course of each survey are summarised in Table 3 below.

Survey Date	Species and Number of Registrations*
Emergence 26.07.2022	Common Pipistrelle 87; Soprano Pipistrelle 1; <i>Myotis</i> sp. 34; Nyctalus 2; Brown Long Eared 1.
Emergence 28.07.2022	Common Pipistrelle: 41; Soprano Pipistrelle 12; <i>Myotis</i> sp.: 10; Noctule: 5; Barbastelle: 4.
Emergence 04.08.2022	Common Pipistrelle: 44; Soprano Pipistrelle 5; <i>Myotis</i> sp.: 10; Noctule: 3; Barbastelle 2; Brown Long eared: 4.
Re-entry 05.08.2022	Common Pipistrelle: 1; Soprano Pipistrelle 8; <i>Myotis</i> sp.: 19; Noctule: 10; Brown Long eared: 6.
Emergence 09.08.2022	Common Pipistrelle: 44; Soprano Pipistrelle 6; <i>Myotis</i> sp: 15; Brown Long eared: 2.
Re-entry 17.08.2022	Common Pipistrelle: 400; Soprano Pipistrelle: 3; <i>Myotis</i> sp.: 1; Noctule: 10; Brown Long eared: 18; Serotine: 1; <i>Nyctalus</i> sp: 9.
Emergence 25.08.2022	Common Pipistrelle: 208; Soprano Pipistrelle: 27; <i>Myotis</i> sp.: 2; Noctule: 2; Brown Long eared: 1.
Re-entry 26.08.2022	Brown Long eared: 43.
Emergence 26.08.2022	Common Pipistrelle: 897; Soprano Pipistrelle: 142; Brown Long eared 20; <i>Myotis</i> sp. 15.
Emergence 27.09.2022	Brown Long eared 6; <i>Myotis</i> sp. 3.
Emergence 11.10.2022	Common Pipistrelle: 114; Soprano Pipistrelle: 8; Brown Long eared 6; <i>Myotis</i> sp. 2; Noctule 4; Barbastelle 1; Leisler's 2; <i>Nyctalus</i> sp 4; Serotine 1.

Table 3. Summary of bat activity levels recorded across emergence and re-entry surveys

* Note, these are cumulative registrations recorded across two to six separate detectors

- 4.2.48. **Background information.** The desk study undertaken with TVERC returned no records of bats within or directly adjacent to the Site. A

total of 57 recordings were made in the surrounding area, including Brown Long-eared Bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Daubenton's Bat *Myotis daubentonii*, Natterer's Bat *Myotis nattereri*, Noctule *Nyctalus noctula*, Lesser Noctule *Nyctalus leisleri*, and one record of Western Barbastelle.

- 4.2.49. A total of five recorded roosts/emergence/re-entry locations were described within a 2km radius. The closest record related to a Brown Long-eared, located approximately 1.2km north-east of the Application Site at its closest point. The most recent recording was in 2017. This is also the most recent record of a roost.

4.3. Badgers

- 4.3.1. Badger surveys were undertaken at the Application Site in May and August 2022 and updated in October 2023. No evidence of Badger setts was recorded.
- 4.3.2. Evidence of foraging behaviour was found on the Site in the form of direct Badger observations made during bat surveys in 2022. However, it is considered highly unlikely, considering the small size of the Site and predominance of built form and hardstanding, that the Site would offer any significant opportunities for Badger populations in the wider area.
- 4.3.3. **Background information.** The data search from TVERC returned no records of Badgers within or directly adjacent to the Site.
- 4.3.4. Eight instances of Badger sightings were returned within a 2km radius of the Site. These included a pair of sightings in 2018, approximately 1.8km to the north of the Site, along with a single sighting in the same year, due slightly east. Another pair, to the south of the Site, approximately 1.5km distant, were reported in 2018. To the south-east of the Site, around 1.5km distant, there was a report from 2006, and another from 2013 around 2km away. Finally, north-west of the Site a reported sighting was recorded in 2004 approximately 1.8km away.

4.4. Birds (Barn Owl)

- 4.4.1. Detailed surveys for Barn Owl confirmed their presence within the Site, primarily within B3a, B3b and (suspected) B7.
- 4.4.2. During the initial internal surveys in July 2022, a large number (hundreds) of Barn Owl pellets were recorded on the ground floor of B3b, alongside the carcass of a juvenile Barn Owl. The pellets varied considerably in age, indicating a long-standing and active roost site. No obvious nest site was recorded on the ground floor. However, the buildings support multiple metal vents which may lead/connect to upper levels of the buildings. During a subsequent visit to B3a/B3b in August 2022, an adult Barn Owl was flushed from a vent, where it was suspected of roosting.

- 4.4.3. Scattered Barn Owl pellets were also recorded at the ground level of B3a in 2022, and it is considered likely the upper level of this building is utilised as a roost site.
- 4.4.4. During the update survey in October 2023, a large number of Barn Owl pellets were also found on the ground level of Building B8. Given the open sided nature and with no obvious nest building within the roof beams / structure, it is considered that B8 is utilised as a feeding location for Barn Owl.
- 4.4.5. On the basis of the adult Barn Owl sighting, and the large number of pellets (which range from historic to fresh), the ground floors of B3a/B3b, is concluded to represent a long-standing roost site for Barn Owl.
- 4.4.6. Given the poor structural condition of B3a/B3b, internal surveys of the first storey/loft voids were not possible. However, a partial assessment was possible from scaling existing scaffolding adjacent to B3b. This allowed a partial assessment of the void of B3b, where scattered Barn Owl pellets and droppings were noted. No potential nesting site was confirmed within the visible survey area. It is noted B3b connects internally to B7, which was not accessible for survey.
- 4.4.7. Careful attention was paid to Barn Owls during the completion of night-time bat survey work, including for three surveys of B3 and B7. During the course of these surveys, Barn Owls were regularly recorded within the Site, including observations of adult birds emerging from and returning to a roof gap in B3b (see Plan ECO3). In particular, during the nocturnal survey on 26 July, two adult Barn Owls were observed emerging from B3b soon after dusk (these emergences were approximately 15 minutes apart), with a single adult observed re-entering later during the survey.
- 4.4.8. On the basis of internal and external inspections, the completion of nocturnal work, and information provided by the landowner / manager, it is considered likely a Barn Owl nest site is present within the Application Site. On the basis no direct sighting of a nest site was recorded in B3b, it is considered probable a nest site is located within the adjoining B7.
- 4.4.9. With the exception of Barn Owl, the Application Site is assessed to offer only limited opportunities for urban/garden birds. The small extent of the Application Site would prevent it from supporting any significant or notable assemblages. No breeding evidence of other urban bird species, such as Swallow, House Martin or Swift were recorded during the surveys.
- 4.4.10. Bird species recorded within and passing over the Application Site during the habitat survey included Blackbird *Turdus merula*, Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Blue Tit *Cyanistes caeruleus*, Great Tit *Parus major*, Chaffinch *Fringilla coelebs* *Phylloscopus collybita*, Chiffchaff *Phylloscopus collybita*, Wood Pigeon *Columba palumbus*, Barn owl *Tyto Alba* and Magpie *Pica pica*.

- 4.4.11. **Background Information.** The desk study undertaken with TVERC returned records of Barn owls present in and around the application site. Further search resulted in 1,408 recordings of various species of bird within 2km. the most recent record of Barn owl *Tyto alba* is from 2011 and was sighted 2km to the southwest. The closest recoding was from 2009 and was sighted at around 1km away. Other notable species recorded within 2km of the site are; Brambling *Fringilla montifringilla*, Bullfinch *Pyrrhula pyrrhula*, Common Sandpiper *Actitis hypoleucos*, Corn Bunting *Emberiza calandra*, Crane *Grus grus*, Crossbill *Loxia curvirostra*, Cuckoo *Cuculus canorus*, Curlew *Numenius arquata*, Dunnock *Prunella modularis*, Fieldfare *Turdus pilaris*, Gadwall *Mareca strepera*, Golden Plover *Pluvialis apricaria*, Hobby *Falco subbuteo*, Kestrel *Falco tinnunculus*, Kingfisher *Alcedo atthis*, Hen Harrier *Circus cyaneus*, Merlin *Falco columbarius* and Yellowhammer *Emberiza citrinella*.
- 4.4.12. The closest records relate to the village of Over Kiddington approximately 0.6km east of the Application Site at its closest point and refer to a Barn owl recording made in 2009. The most recent record relates to Little Egret *Egretta garzetta* located approximately 1.7km north of the Application Site at its closest point and dates from 2018.

4.5. Invertebrates

- 4.5.1. The habitats at the Site are likely to support a range of common invertebrate species, however there is no reason to suggest any protected or notable species may be present, and there is a lack of floristic diversity across the habitats present.
- 4.5.2. **Background Records.** The desk study undertaken with TVERC returned a few records of invertebrates within a 2km radius of the site. None were notable species and the most recent recording within the radius was made in 2000.
- 4.5.3. 20 records of Invertebrates were returned including Small Heath *Coenonympha pamphilus*, Common Darter *Sympetrum striolatum* and the Large Black Slug *Arion (Arion) ater*. The closest record relates to a Large Black Slug located approximately 0.7km southeast of the Application Site at its closest point and dates from 2017. The most recent record relates to a Small Heath located approximately 1.7km north of the Application Site at its closest point and dates from 2020.

4.6. Other Notable Species

- 4.6.1. Given the limited extent semi-natural habitats present within the Application Site, there is nothing to indicate the Application Site is likely to be of significant value for any other protected or notable species.
- 4.6.2. F1 and the hedgerows and tree belts at the boundaries of the Site would likely provide limited suitability for European Hedgehog

Erinaceus europaeus. However, no evidence of this species was observed as part of the surveys in May or August 2022.

- 4.6.3. With regards amphibians, there are no ponds within the Site, whilst the terrestrial habitats on Site are generally unsuitable. The closest ponds are in excess of 500m from the Site. On this basis, amphibians are considered highly unlikely to be present or in any way reliant on the Site and are not further considered within this assessment.
- 4.6.4. **Background records.** The desk study undertaken with TVERC returned no records of notable species within or adjacent to the application site.
- 4.6.5. A single record of European Hedgehog *Erinaceus europaeus* within the 2km radius of the search. This was recorded in 2020 Northeast of the site approximately 1.3km away.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

- 5.1.1. The latest guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.
- 5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe⁶. These are broadly used across the United Kingdom to rank sites, so priorities for nature conservation can be attained. For example, current Site of Special Scientific Interest (SSSI) designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.
- 5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of 'typicalness', potential value, intrinsic appeal, recorded history and the position within the ecological/geographical units are also incorporated into the ranking procedure.
- 5.1.4. Any assessment should not judge sites in isolation from others since several habitats may combine to make it worthy of importance to nature conservation.
- 5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.
- 5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). Oxfordshire's BAP currently lists several priority species and habitats, in addition to several Conservation Target Areas (CTA). CTAs are considered the most important areas for wildlife within the county. Within these areas the aim is to restore biodiversity at the landscape level, primarily through the restoration, creation, and maintenance of BAP priority habitats. The Application Site is in close proximity to the Glyme and Dorn Valleys CTA. An area characterised by wooded pastures, valleys, and slopes. It includes habitats such as limestone grasslands, lowland meadows, fens, swamps, reed beds, woodland, and parklands.
- 5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.

⁶ Ratcliffe, D A (1977). *A Nature Conservation Review: the Selection of Sites of Biological National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

- 5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

5.2. Habitat Evaluation

Designated Sites

- 5.2.1. **Statutory Sites.** There are no statutory designated sites of nature conservation interest located within or immediately adjacent to the Application Site.
- 5.2.2. The closest statutory site designated on nature conservation grounds is Out Wood SSSI, which is located approximately 1.3km to the South of the Application Site at its closest point. This site is designated on account of four rare woodland types; calcareous Hazel-Ash woodland, wet Maple woodland, dry Ash-Maple wood and some suckering Elm. these are represented and integrated freely across the SSSI. This site can support a diverse range of fauna and flora and is one of the few localities in Oxfordshire that the spiked star-of-Bethlehem *Ornithogalum pyrenaicum* is found.
- 5.2.3. Noting the significant separation of this (and indeed any other) designated site from the Application Site and noting the nature of the proposals (i.e. small residential development) it is not considered the proposals have any potential to impact on these designated sites. In reaching this conclusion, it is noted the Application Site does not lie within an 'Impact Risk Zone' (IRZ) where residential development of any form is identified to result in 'likely impacts'.
- 5.2.4. **Non-statutory Sites.** There are no non-statutory designated sites of nature conservation interest located within or immediately adjacent to the Application Site.
- 5.2.5. Given the significant separation from any designated sites from the Application Site, and noting the small scale of the proposals (i.e. a replacement dwelling), it is not considered there would be any potential for adverse impacts to arise.
- 5.2.6. In any event, best practice measures would be adopted during construction to ensure potential adverse impacts on any off-site habitats are avoided.
- 5.2.7. **Conservation Target Areas (CTAs).** The site is located in close proximity to the Glyme and Dorn Valleys CTA (Conservation Target Area). An area characterised by wooded pastures, valleys, and slopes. It includes habitats such as limestone grasslands, lowland meadows, fens, swamps, reed beds, woodland and parklands.
- 5.2.8. Considering the small size of the Application Site and nature of proposed development, it is highly unlikely there will be any adverse impacts on the neighbouring CTA. Indeed, through sensitive development and the adoption of appropriate mitigation and enhancement measures for a range of faunal species, the proposals

offer opportunities to maintain and enhance the Favourable Conservation Status of faunal species which are likely to be sustained within the wider CTA.

Habitats within the Application Site

- 5.2.9. The habitats within the Site are of generally low ecological value, comprising predominantly species-poor grassland alongside extensive areas of hardstanding and built form.
- 5.2.10. The buildings and areas of hardstanding are of no intrinsic ecological value, and no mitigation would be required for any losses / impacts.
- 5.2.11. The modified grassland is of very limited ecological value, with low species diversity poor structure (on account of an intensive management regime). Given this and the very small size of the affected areas, no specific mitigation would be required.
- 5.2.12. It is understood that F1 is anticipated to be retained in full as part of the proposals. Opportunities exist to enhance this habitat to a species rich meadow under an appropriate management scheme, ensuring enhancements relative to the existing situation.
- 5.2.13. While losses to existing trees and shrub are unlikely to arise, if necessary for construction/access purposes, these would be more than mitigated for through the provision of new native tree and shrub planting elsewhere within the Application Site. In particular, this could include for new native shrub planting at the northern boundary of F1 and infill planting of TL2 with native species such as Blackthorn and Hazel *Corylus avellana*.
- 5.2.14. Where existing trees would be retained, appropriate construction safeguards would be employed to ensure potential adverse impacts are avoided.
- 5.2.15. In summary, there is ample opportunity for the proposals of the Application Site to fully mitigate and enhance for any small scale losses and achieve a long-term biodiversity net gain, relative to the existing baseline.

5.3. Faunal Evaluation

- 5.3.1. Detailed consideration is given below to mitigation and enhancement opportunities for faunal species within the Site.

Bats

- 5.3.2. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as Amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”), as Amended. These include provisions making it an offence:

- To deliberately to kill, injure or take (capture) bats;
To deliberately disturb bats in such a way as to:

- i. be likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or to hibernate or migrate; or
 - ii. affect significantly the local distribution or abundance of the species to which they belong.
 - To damage or destroy any breeding or resting place used by bats;
 - To intentionally or recklessly obstruct access to any place used by bats for shelter or protection.
- 5.3.3. While the legislation is deemed to apply even when bats are not in residence, NE guidance suggests certain activities such as re-roofing can be completed outside sensitive periods when bats are not in residence, provided these do not damage or destroy the roost.
- 5.3.4. The words 'deliberately' and 'intentionally' include actions where a court can infer the defendant knew the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.
- 5.3.5. The offence of damaging or destroying a breeding site or resting place (which can be interpreted as making it worse for the bat) is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.
- 5.3.6. European Protected Species licences are available from NE in certain circumstances, and permit activities that would otherwise be considered an offence.
- 5.3.7. Licences can usually only be granted if the development is in receipt of full planning permission and it is considered that:
- (i) The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
 - (ii) There is no satisfactory alternative; and
 - (ii) The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 5.3.8. **Site Usage.** None of the trees which are to be lost or adversely impacted by the proposed development support features of potential roosting value to bats.
- 5.3.9. The completion of a suite of bat emergence and re-entry surveys at the Application Site confirmed the presence of roosting bats within the loft void/roof of **B3a, B3c, B3d and B6.**
- 5.3.10. Specifically, **B3a** was identified to support small numbers of Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared bats and Whiskered bat. The building is deemed to provide summer day roosting opportunities for each of these species.

- 5.3.11. **B3c** was identified to support small numbers of Common Pipistrelle bats. The building is deemed to provide summer day roosting opportunities for this species.
- 5.3.12. **B3d** was identified to support small numbers of Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bats. The building is deemed to provide summer day roosting opportunities for these species.
- 5.3.13. **B6** was identified to support small numbers of Common Pipistrelle bats. The building is deemed to provide summer day roosting opportunities for this species.
- 5.3.14. No evidence of roosting bats was recorded during surveys of **B1, B2, B5, B7, B9** or **B10** and these structures are not deemed to support roosting bats.
- 5.3.15. The above buildings within the Site are to be renovated, modified or otherwise lost as part of the Development Proposals.
- 5.3.16. Given its small size, the Application Site is deemed highly unlikely to be of any significant value to foraging and commuting bats in the local area. In any event, the vast majority of potential suitable habitat for bats is to be retained as part of the proposed development options.
- 5.3.17. **Avoidance, Mitigation and Enhancement Opportunities.** No trees with bat potential are to be lost to, or impacted by, development proposals and no mitigation would be required in this respect.
- 5.3.18. It is anticipated that impacts will occur on buildings B1, B2, B3a, B3b, B3d, B3e, B6 and B7 (as shown in Plan ECO3) as part of the proposals. This is result in the likely loss of roosting opportunities to bats within the Application Site, in the absence of mitigation. Those roosts that will be lost relate specifically to a daytime roost for each of Common Pipistrelle (6x roost access locations), Soprano Pipistrelle (2x roost access locations), Brown Long-eared bats (2x roost access locations) and suspected Whiskered bat (1x roost access location).
- 5.3.19. Whilst precise mitigation measures will need to be informed by the detailed design in due course, as well as within a NE Bat Licence, an overview of the suggested mitigation and enhancement proposals are detailed below.
- 5.3.20. With reference to the Bat Mitigation Guidelines (2004) and the information provided for proportionate mitigation illustrated therein at Figure 4, there is flexibility on the precise nature of mitigation in this instance. English Nature guidance states the following for day roosts of individual bats or small numbers of common species: *Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring.*

- 5.3.21. Noting the above, it is suggested that the following mitigation measures be incorporated into the Development Proposals as mitigation for the loss of the aforementioned buildings:
- Works to buildings to be preceded by a soft strip / exclusion exercise as required to ensure that construction phase impacts on bats can be avoided;
 - Retention of external crevices wherever possible as part of renovations;
 - The provision of integrated bat roosting features within new built form, with this to include the provision of features suitable for both crevice dwelling species (such as Pipistrelle and *Myotis* bats) as well as cavity/void dwelling species (such as Brown Long-eared bats).
- 5.3.22. A minimum of 15 roost features/locations could be created within the replacement/refurbished dwellings. These would include for raised bat access tiles and integrated roosting features in walls. Where wall integrated roost features are proposed, and whilst 'off the shelf' opportunities would be appropriate, opportunities exist to create bespoke crevices and voids within the stonework of buildings. The creation of bespoke features would allow for additional variation between roosts, and is an approach endorsed by Natural England. Examples of purpose built integrated features are included at Appendix 2.
- 5.3.23. On a precautionary basis, the proposals should come forward with sensitively designed lighting, with this ensuring adverse light spill is avoided onto new and retained roost features, as well as linear / boundary features and off-site habitats.
- 5.3.24. It is understood the design of lighting (internal and external) will give due regard to best practice measures detailed within the Bat Conservation Trusts Guidance Note 08/18 *Bats and Artificial Lighting in the UK*. This would include the adoption of a sensitive lighting configuration to avoid light spill onto areas of woodland/linear features. Additionally, accessories (such as baffles, hoods or louvres) can be utilised to further minimise light spillage and direct light below the horizontal plane to where it is required (limiting light to an angle of 70 degrees or below wherever possible). Additionally, external lighting could comprise LED luminaries with no UV content and a colour temp of <2700K.
- 5.3.25. In terms of potential impacts on foraging and commuting bats, and noting the Site's small size and ornamental nature, potential impacts are considered to be limited to lighting impacts upon boundary habitats during the construction and operational phase. These can be adequately avoided / mitigated for through adoption of a sensitive lighting scheme, secured by condition in due course.
- 5.3.26. Moreover, the retention of the majority of higher interest habitats and the provision of new semi-natural habitats (see Habitat Section above) would have meaningful enhancements for roosting, foraging and commuting bats within the Site.

- 5.3.27. The above mitigation and enhancement measures would ensure opportunities for bats are retained and enhanced as part of the Development Proposals. These measures would therefore secure the Favourable Conservation Status of on Site populations post development, and contribute towards the conservation of species recorded in local and national Biodiversity Action Plans.

Badgers

- 5.3.28. **Legislation.** The Protection of Badgers Act 1992 consolidates the previous Badgers Acts of 1973 and 1991. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain, with particularly high populations in the south.
- 5.3.29. As well as protecting the animal itself, the 1992 Act also makes the intentional or reckless destruction, damage or obstruction of a Badger sett an offence. A sett is defined as “any structure or place which displays signs indicating current use by a Badger”.
- 5.3.30. In addition, the intentional elimination of a sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting ‘cruel ill treatment’ of a Badger.
- 5.3.31. Previous guidelines were issued by NE on the types of activity it considers should be licensed within certain distances of sett entrances. They stated that works that may require a licence include using heavy machinery within 30 metres of any entrance to an active sett, using lighter machinery within 20 metres, and light work such as hand digging within 10 metres. However, guidance issued by NE in September 2007 specifically stated that:
- “It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no Badger is disturbed and the sett is not damaged or obstructed.”*
- 5.3.32. More recent guidance produced by NE in 2009 states that Badgers are relatively tolerant of moderate levels of disturbance and that low levels of disturbance at or near to Badger setts do not necessarily disturb the Badgers occupying those setts. However, NE’s guidance continues by stating that any activity that will or is likely to cause one of the interferences defined in Section 3 (such as damaging a sett tunnel or chamber or obstructing access to a sett entrance) will continue to be licensed.
- 5.3.33. This guidance no longer makes reference to any 30/20/10m radius as a threshold for whether a licence would be required. Nonetheless, it is stated that tunnels may extend for 20m so care needs to be taken when implementing excavating operations within the vicinity of a sett, appropriate precautions taken with vibrations and noise, etc. Fires/chemicals within 20m of a sett should specifically be avoided.

- 5.3.34. This interim guidance allows greater professional judgement as to whether an offence is likely to be committed by a particular development activity, and therefore whether a licence is required or not. For example, if a sett clearly orientates southwards into an embankment, it may be somewhat redundant to have a 30m exclusion zone to the north.
- 5.3.35. **Application Site Evaluation.** Evidence of Badger foraging activity was recorded within the Application Site. However, given the nature of the Site (i.e. majority built form and hardstanding) it is considered highly unlikely the site would offer any significant opportunities for Badger populations in the wider area.
- 5.3.36. No sett entrances were found on or immediately adjacent to the Application site, the activity observed on the site during night survey work was limited to foraging behaviour. The presence of large wooded areas in the wider area makes it likely that site is simply within the Badgers very large foraging catchment, as they are a highly mobile species.
- 5.3.37. **Avoidance, Mitigation and Enhancement Opportunities.** Noting the distance of any potential Badger activity from areas of proposed construction, no specific mitigation would be required.
- 5.3.38. On a precautionary basis, noting the presence of Badger within the area, construction should adopt the following precautionary measures:
- Site personnel to attend a tool-box talk such that they can be made aware of the potential presence of Badgers within the Site, and the implications this will have on their working methodology.
 - Wherever possible, new excavations (such as trenches or pits) will not be left open overnight. Should excavations be required, scaffolding board (or similar) will be left within the feature in order to provide a means of escape for any animals which may become trapped.
 - Where soil bunds (or similar) cannot be avoided, it is recommended that these features are subject to regular checks (daily where possible) in order to identify any areas of digging. Any new excavations will be filled in before a full sett is excavated, wherever possible.
- 5.3.39. In line with best practice, and noting Badgers are a mobile species which can rapidly excavate new setts, an updated survey should be undertaken if construction works are not commenced within 12 months of the previous surveys.

Breeding Birds

- 5.3.40. **Legislation.** Section 1 of the Wildlife & Countryside Act is concerned with the protection of wild birds. With certain exceptions, all wild birds and their eggs are protected from intentional killing,

injuring and taking; and their nests, whilst being built or in use, cannot be taken, damaged or destroyed.

- 5.3.41. Schedule 1 of the Wildlife & Countryside Act 1981 is a list of the nationally rarer and uncommon breeding birds for which all offences carry special (i.e. greater) penalties. These species also enjoy additional protection whilst breeding, as it is also an offence to disturb adults or their dependant young when at the nest.
- 5.3.42. **Application Site Evaluation.** Detailed surveys for Barn Owl confirmed their presence within the Site, primarily within B3b and (suspected) B7. On the basis of the surveys undertaken, it is concluded that these buildings support at least two roosting sites, alongside one nest site.
- 5.3.43. With the exception of Barn Owl, the Application Site is assessed to offer only limited opportunities for urban/garden birds. The small extent of the Application Site would prevent it from supporting any significant or notable assemblages. No breeding evidence of other urban bird species, such as Swallow *Hirundinidae*, House Martin *Delichon urbicum* or Swift *Apodidae* were recorded during the surveys.
- 5.3.44. **Mitigation and Enhancements.** As all species of birds receive general protection whilst nesting, to avoid a possible offence it is recommended any clearance of suitable nesting habitat is undertaken outside the breeding season (March to August inclusive) or alternatively, checks be made for nesting birds, by an ecologist, immediately prior to removal.
- 5.3.45. Where minor losses to suitable nesting habitat are proposed (i.e. tree removal), it is considered such opportunities will be more than mitigated for through the implementation of new landscaping proposals for the Site, as detailed in the Habitat Section above.
- 5.3.46. The provision of 10 varying designs of integrated bird nesting features in due course, such as for Swallow, House Martin, or House Sparrow, would offer an opportunity to enhance the value of the Application Site for nesting birds. Such opportunities could be readily achieved.

Barn Owl

- 5.3.47. The renovation of B3b and B7 is likely to directly impact on the Barn Owl nest and roost sites present within these buildings, resulting in the loss of these sites in the absence of mitigation.
- 5.3.48. Regarding indirect impacts, works to the remainder of B3 would also have the potential to cause disturbance to Barn Owl, noting their proximity. At this stage, noting the Site comprises an active farmyard and buildings within which noise is commonplace, it is not considered works to other buildings would have the potential to result in 'disturbance'. In this regard, it is noted that disturbance is the 'unexpected', i.e. where there is a significant and sudden change

in activity or noise (etc) relative to the baseline situation. Where Barn Owls are visually screened from activity (i.e. within a void), and where baseline noise is commonplace, it is unlikely construction noise would amount to disturbance for Barn Owl.

- 5.3.49. **Construction Stage Mitigation.** Prior to construction works commencing (inclusive of any building demolition/modification), two Barn Owl nest boxes will be installed on suitable buildings and two Barn Owl nest boxes will be installed on trees or poles within the Site or adjacent area (where this lies in the Applicants control). These boxes would be sited away from any potentially disruptive construction works associated with the Proposals.
- 5.3.50. The provision of nest boxes will ensure continued nesting and roosting opportunities during construction, prior to 'permanent' provision being secured (see below).
- 5.3.51. Whilst Barn Owls are most likely to nest between the period of March to August, individuals have been recorded exhibiting nesting behaviour at all times of year. As such, prior to construction works commencing (inclusive of any building demolition/modification), a pre-commencement check will be undertaken by an appropriately qualified ecologist.
- 5.3.52. Subject to the ability to safely access all areas of the affected buildings, it may be necessary for initial works to buildings B3 and B7 to be overseen by an ecological clerk of works (ECoW). This oversight would provide a further safeguard against potential disturbance to an active nest site, and would moreover allow for the presence of a nest site to be confirmed (currently this is only assumed). In the event nesting is observed, potentially disruptive works would cease until such a time as the nest was no longer in use.
- 5.3.53. **Long Term Mitigation/Enhancement.** In order to mitigate for direct impacts on Barn Owl, replacement nest and roosting provision will be required as part of the Proposals. For nesting sites in particular, the Barn Owl Trust advocate nest site losses to be mitigated for through 'permanent provision'. This means the provision of nesting sites integrated into built form, rather than nest box provision.
- 5.3.54. Consistent with the position of the Barn Owl Trust, it is proposed for the loss of the nesting site to be more than mitigated for through the provision of two integrated nest features within new built form. Whilst the exact siting and design of these features would be detailed at a later stage of planning, precedent examples are included at Appendix 3.
- 5.3.55. In addition to integrated features, the Proposals would also include for the provision of two Barn Owl nest boxes either within the Site or within adjacent land under the Applicants control. These boxes will provide additional roosting and nesting opportunities post development but will also ensure immediate opportunities to mitigate construction stage impacts (as detailed above).

- 5.3.56. The provision of a range of new nesting and roosting opportunities within the Site will ensure the local conservation status of Barn Owl can be retained post development. Indeed, relative to a no development scenario, where some of the buildings on Site are at risk of collapse in the short to medium term, the Proposals can be viewed as a long-term enhancement for Barn Owls in the local area.

Invertebrates

- 5.3.57. **Application Site Evaluation:** Based on the habitats present the Application Site is not considered to be of any heightened importance to notable or protected invertebrate species or assemblages.
- 5.3.58. **Enhancement Opportunities.** The scope of the landscaping proposals for the Site, e.g. creation of species rich grassland, would ensure a range of optimal microhabitats for invertebrates within the Site. These habitats in turn would also support a varied floristic resource, offering an improved nectar and pollen resource for a range of pollinator insects.
- 5.3.59. Moreover, it is proposed for a proportion of deadwood habitat, arising from any tree removal works, to be retained within the Application Site as log piles, of benefit to saproxylic insects.

Other Species

- 5.3.60. **Application Site Evaluation:** Given the small size of the Application Site and that, where present, semi-natural habitats are primarily of an amenity nature, the Application Site is unlikely to offer significant opportunities for any other protected or notable faunal species or assemblages which may be present in the wider area.
- 5.3.61. **Enhancement Opportunities.** Should they be present in the local area, Hedgehog would benefit from new habitat creation measures, not least new areas of meadow creation. It is also suggested hedgehog tunnels could be provided within the Site. Hedgehog tunnels would comprise small (13cm x 13cm) openings in the base of boundary features, providing a means for this species to migrate freely within and beyond the Application Site.
- 5.3.62. As above, the creation of log piles, using arisings from any on-Site works (both during construction and operational phases of the development), would provide high quality nesting and hibernation sites for this species, should they be present in the local area.

6. PLANNING POLICY CONTEXT

- 6.1. The planning policy framework that relates to nature conservation in Over Kiddington, Oxfordshire is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPPF); and at the local level through the West Oxfordshire District Council Local Plan Part 1, which sets out the vision for the West Oxfordshire District up to 2031. It was adopted in September 2018.
- 6.2. Any proposed development will be judged in relation to the policies contained within these documents.
- 6.3. **National Policy**

National Planning Policy Framework

- 6.3.1. Guidance on national policy for biodiversity and geological conservation is provided by the NPPF, published in March 2012, revised on 24 July 2018, 19 February 2019 and again on 20 July 2021. It is noted, the NPPF continues to refer to further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system provided by Circular 06/05 (DEFRA/ODPM, 2005) accompanying the now defunct Planning Policy Statement 9 (PPS9).
- 6.3.2. The key element of the NPPF is there should be “a presumption in favour of sustainable development” (paragraphs 10 to 11). It is important to note this presumption “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” (paragraph 182). ‘Habitats site’ has the same meaning as the term ‘European site’ as used in the Habitats Regulations 2017.
- 6.3.3. Hence, the direction of Government policy is clear. That is, the presumption in favour of sustainable development is to apply in circumstances where there is potential for an effect on a European site, if it has been shown there will be no adverse effect on that designated site as a result of the development in prospect.
- 6.3.4. A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to biodiversity (paragraph 174).
- 6.3.5. The NPPF also considers the strategic approach local authorities should adopt with regards to the protection, maintenance and enhancement of GI, priority habitats, and ecological networks, and the recovery of priority species.
- 6.3.6. Paragraphs 179 to 181 of the NPPF comprise a number of principles local authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given

to European sites to potential Special Protected Areas (SPA), possible Special Areas of Conservation (SAC), listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European sites; and the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats – unless there are 'wholly exceptional reasons' (for instance, infrastructure projects where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

- 6.3.7. National policy therefore implicitly recognises the importance of biodiversity and that, with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

West Oxfordshire Local Plan 2031 (2018)

- 6.4.1. The West Oxfordshire Local Plan 2031 is a planning framework document which has been produced with the aim of ensuring new development has a positive impact on the environment. This document considers the long-term vision and objectives for West Oxfordshire and contains the policies for delivering these objectives, and outlines how they will be implemented in a cohesive manner.
- 6.4.2. This document contains five policies of relevance to ecology and biodiversity conservation, these being policies Environment and Heritage 2 (**EH2**), **EH3**, **EH4**, **EH7** and **EH8**.
- 6.4.3. **Policy EH2** relates primarily to landscape character. However, it identifies the need for new developments to conserve Oxfordshire's natural environment, with specific reference made to its biodiversity.
- 6.4.4. Policy **EH3** relates to biodiversity and geodiversity. It refers to the protection afforded to statutory and non-statutory designated sites, as well as the protection of protected species and habitats. The policy also states that developments should be designed to conserve and achieve a net gain in biodiversity interest, and secure ecological networks at a landscape scale, especially within CTA's. The policy identifies that in some situations (i.e. for major developments), applications may need to be supported by a Biodiversity Impacts Assessment Calculator (BIAC).
- 6.4.5. Policy **EH4** relates to the public realm and GI within new developments and identifies requirements for GI design and extent. New developments should contribute to the overall GI of the local area.
- 6.4.6. Policy **EH7** relates to flood risk, it primarily concerns flood risk but identifies the importance of natural sustainable drainage systems (SuDS) in new settlements.
- 6.4.7. Policy **EH8** relates to environmental protection including impacts on air quality, artificial lighting, noise, water resources, and waste.

Biodiversity and Planning in Oxfordshire (2014)

- 6.4.8. The Biodiversity and Planning in Oxfordshire document provides additional guidance in relation to local biodiversity, and has been produced to assist those involved in planning. The document provides further detail and context to the adopted Local Plan, covering subject areas including statutory and non-statutory sites, priority habitats, protected and notable species, and other features of biodiversity importance.

6.5. Discussion

- 6.5.1. Recommendations have been put forward in this report which would allow the Development Proposals to retain and enhance the existing ecological interest of the Application Site. Wherever possible measures to enhance biodiversity value have been clearly indicated, with these giving regard to the setting of the Application Site, and opportunities to contribute positively to local and national biodiversity targets. Based on the surveys undertaken, and the assessment for the presence and potential presence of protected species, due regard to the necessary measures to mitigate and enhance the Application Site for such species have been put forward in this report.
- 6.5.2. Regarding the use of a DEFRA Metric, noting the small scale of the Application Site and that, in any event, new landscaping is proposed to off-set any potential impacts, and secure overall enhancements for the Application Site relative to the existing situation, no net losses of significance to biodiversity are predicted as part of the Proposals. Indeed, a guiding principle of the Proposals is to ensure biodiversity net gains.
- 6.5.3. Based on surveys undertaken and assessment, the presence and potential presence of protected species has been given due regard, and measures to enhance the Application Site for such species have been put forward.
- 6.5.4. In conclusion, implementation of the measures set out in this report enable the Proposals to fully accord with planning policy for ecology and nature conservation at all administrative levels

7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions (Manchester) Limited were commissioned by Juxon Limited to undertake an assessment of the buildings and land at Asterleigh Farm, Kiddington, referred to as the Application Site.
- 7.2. The Development Proposals are for conversion of the traditional farm buildings into three residential plots with associated amenity gardens. The plots utilise the existing access and parking arrangements.

Designated Sites

- 7.3. There are no non-statutory designated sites of nature conservation interest located within or immediately adjacent to the Application Site. The closest such sites are in excess of 1km from the Application Site at their closest point.
- 7.4. Given the significant separation of these designated sites from the Application Site, and noting the small scale of the Proposals (i.e. a small residential development), it is not considered there would be any potential for adverse impacts to arise.

Habitats

- 7.5. The Application Site predominantly comprises a residential dwelling within a working farmyard. A majority of the habitats present are of no ecological significance, overwhelmingly comprising areas of built form, hardstanding, and modified species poor grassland.
- 7.6. Subject to the adoption of mitigation and enhancement measures outlined within this report, the Proposals may readily retain and enhance the ecological interest on the Site, ensuring net gains in biodiversity can be achieved in due course. In particular, the creation of species rich meadow grassland within the Site offers opportunities for meaningful long-term enhancements to be delivered.

Protected and Notable Species

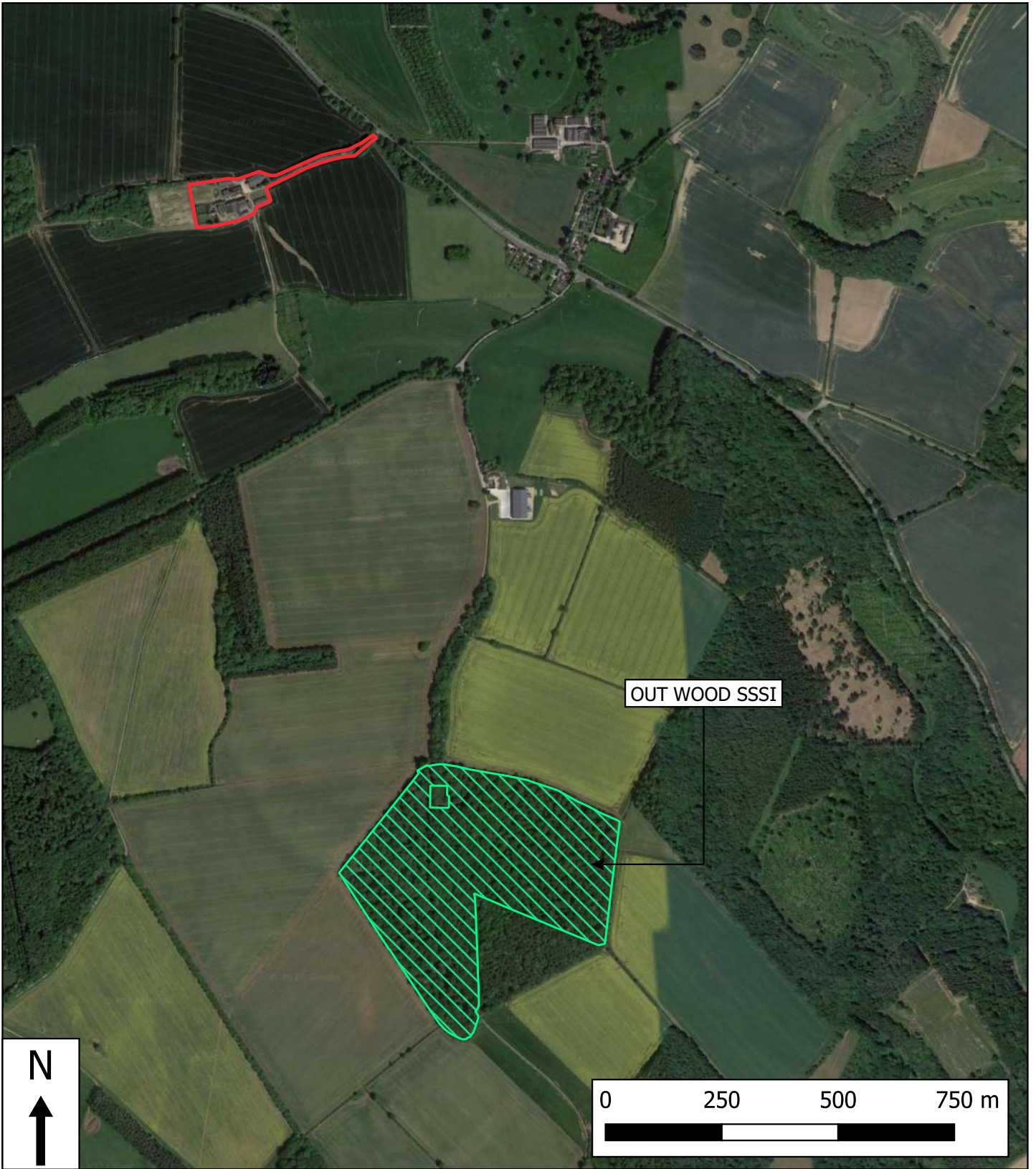
- 7.7. Specific surveys were undertaken in respect of bats and Badgers. These have confirmed the presence of roosting bats in B3a, B3c, B3d and B6. As well as a suspected Barn Owl nest in B7 and confirmed roost sites in B7 and B3b.
- 7.8. The presence of protected and notable species has been carefully considered as part of the Development Proposals, with appropriate mitigation and enhancement measures identified such that continued and improved opportunities would be available for all faunal groups post development.
- 7.9. In respect of bats, a range of new roosting features are proposed, including integrated roosting features in proposed built form.

Summary

- 7.10. In summary, the Development Proposals could easily mitigate for any minor habitat impacts and indeed realise qualitative enhancements to on Site habitats, relative to the existing situation.
- 7.11. With reference to protected and notable species, the recommendations set out within this report would be sufficient to mitigate potential impacts and would in many instances realise significant enhancements to the range of protected and notable species recorded on Site, or considered to have potential to colonise in future years. This will ensure the FCS of on Site species (i.e. bats and Barn Owl) is retained and enhanced.
- 7.12. In conclusion, the Development Proposals would avoid or minimise potential adverse effects and strive to provide opportunities for the delivery of enhancements to biodiversity which will more than mitigate any minor impacts. On this basis, the Development Proposals accord with all legislation and planning policy of relevance to ecology and nature conservation.

PLANS & APPENDICES

PLAN ECO1
Application Site Location and
Ecological Designations



- Key:
- Application Site
 - Site of Special Scientific Interest (SSSI)



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PLAN ECO1: APPLICATION SITE
 LOCATION & ECOLOGICAL
 DESIGNATIONS

Rev: A
 Oct 23

PLAN ECO2
Ecological Features



RESIDENTIAL FARMHOUSE TO REMAIN UNIMPACTED BY THE PROPOSED DEVELOPMENT.



Key:

- Application Site
- Hedgerow
- Tree Line
- Bare Ground
- Buildings
- Garden
- Hardstanding
- Modified Grassland
- Ruderal

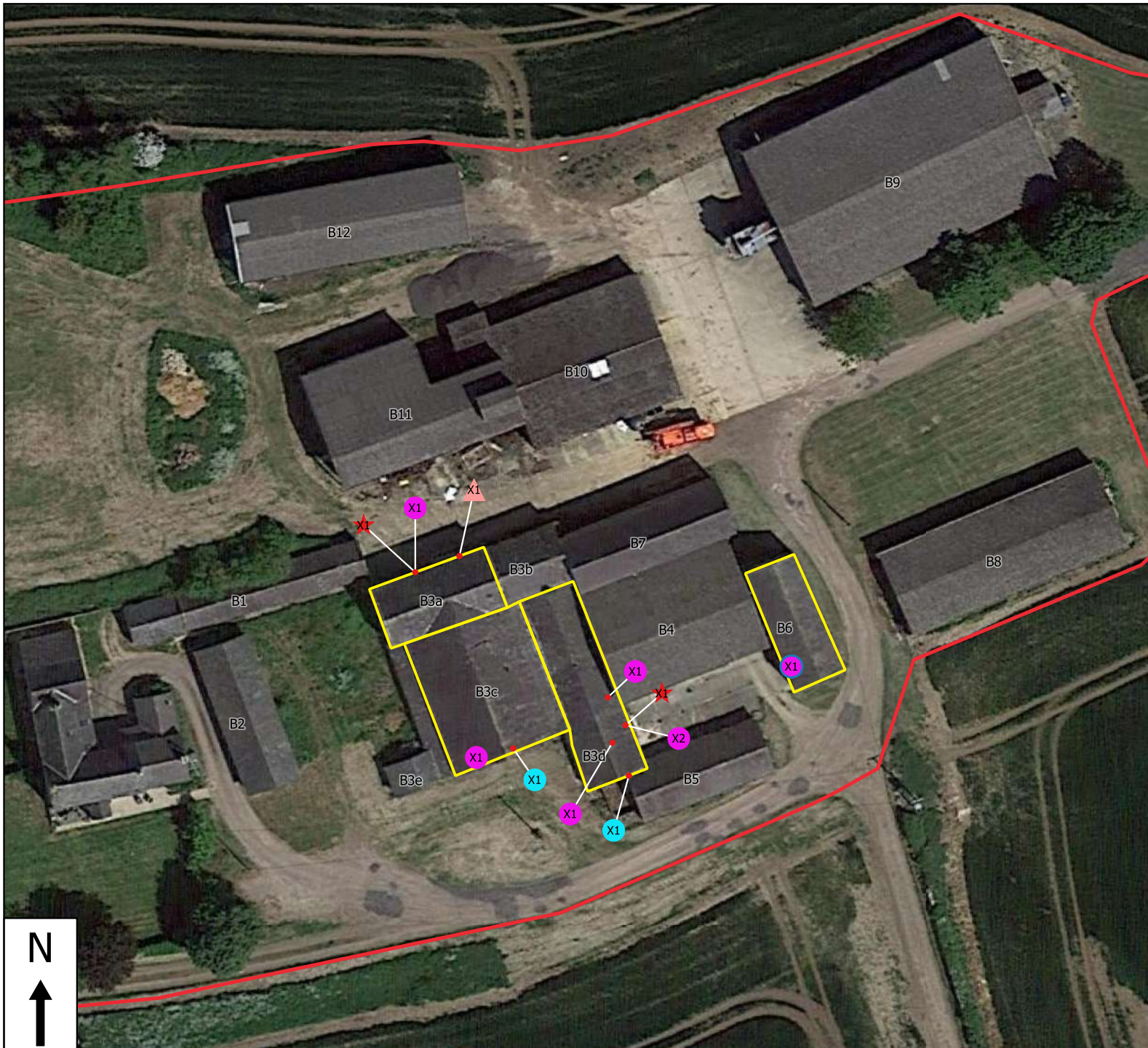
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PLAN ECO2: ECOLOGICAL FEATURES	Rev: A Oct 23
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PLAN ECO3
Protected Species
(Bat Roost Locations)



Key:

- Application Site
- Building With Bat Roost
- ★ Brown Long-eared Bat (Emergence)
- Common Pipistrelle (Emergence)
- Common Pipistrelle (Re-entry)
- Soprano Pipistrelle (Emergence)
- ▲ Whiskered Bat (Emergence)



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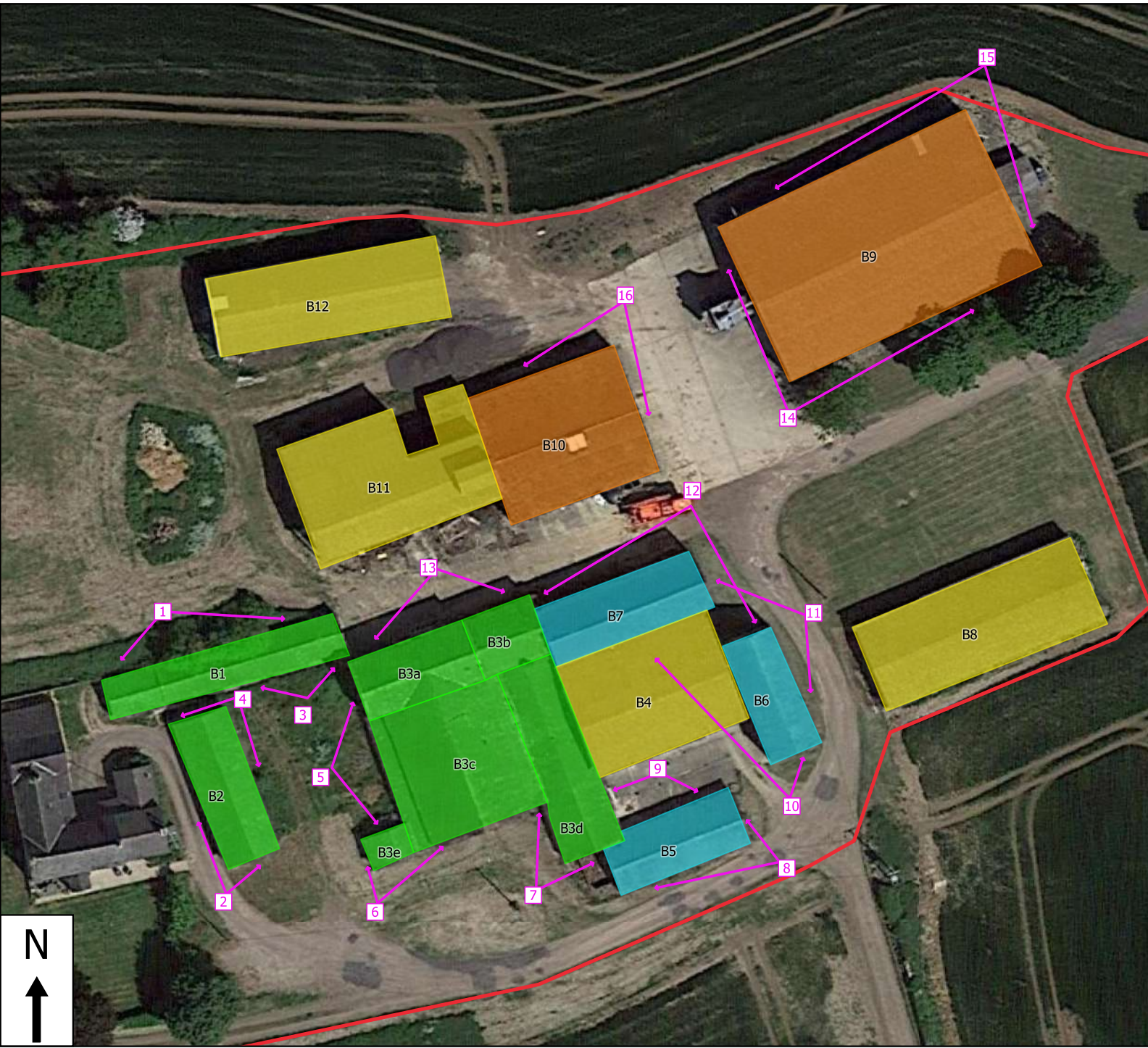
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PLAN ECO3: BAT
ROOST LOCATIONS

Rev: A
Oct 23

PLAN ECO4
Bat Roost Potential
(Buildings)



Key:

- Application Site
- Indicative Surveyor Location
- Building No Bat Potential
- Building Low Bat Potential
- Building Moderate Bat Potential
- Building High Bat Potential

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10623M: ASTERLEIGH FARM, OXFORDSHIRE

PLAN ECO4: BAT ROOST POTENTIAL	Rev: A Oct 23
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APPENDIX

APPENDIX 1
Building Photographs

PHOTOGRAPH 1: BUILDING B1



PHOTOGRAPH 2: BUILDING B2



PHOTOGRAPH 3: BUILDING B3A



PHOTOGRAPH 4: BUILDING B3B



PHOTOGRAPH 5: BUILDING B3C



PHOTOGRAPH 6: BUILDING B3D



PHOTOGRAPH 7: BUILDING B3E



PHOTOGRAPH 8: BUILDING B4



PHOTOGRAPH 9: BUILDING B5



PHOTOGRAPH 10: BUILDING B6



PHOTOGRAPH 11: BUILDING B7



PHOTOGRAPH 12: BUILDING B8



PHOTOGRAPH 13: BUILDING B9



PHOTOGRAPH 14: BUILDING B10



PHOTOGRAPH 15: BUILDING B11



PHOTOGRAPH 16: BUILDING B12



PHOTOGRAPH 17: BUILDINGS AND MODIFIED GRASSLAND (LOOKING WEST)



PHOTOGRAPH 18: TREE LINE TL1 LOOKING EAST



APPENDIX 2
Suitable Bat and Bird Features

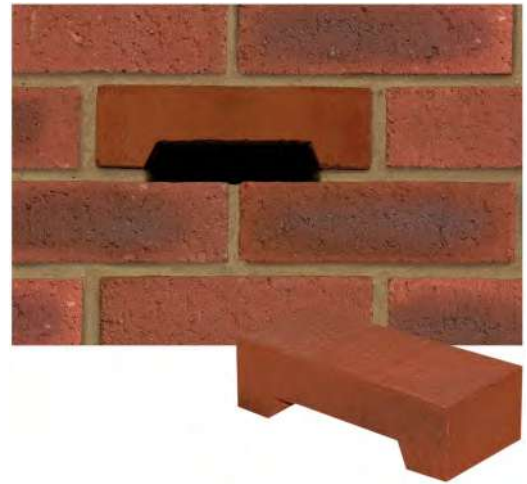
Bat Boxes

Ibstock Bat Box A

A discrete, easy to install single bat brick that allows bats to create a natural home habitat within the cavity of the building

*Height: 215mm
Width: 65mm*

Please note that this box is designed to be installed flush with a wall.



Enclosed Bat Box B

This bat box is designed specifically for the pipistrelle bats, providing a discrete roosting feature which is available in all brick types.

Bats are contained within the bat box itself, within which several roosting zones are provided.

This feature is maintenance free and ideal for new build & conservation work

*Height: 290mm
Width: 215mm*

Please note that this box is designed to be installed flush with a wall.

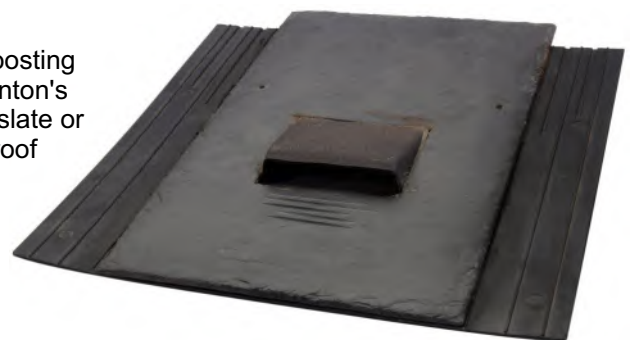


Habibat Bat Access Slate

The Bat Access Slate consists of a standard sized slate, with a capped vent which allows access to roof felt (for roosting Pipistrelles) or roof space (for Serotine, Leisler's, Daubenton's and Barbastelle Bats). We can supply either a standard slate or custom slate that is coloured and sanded to match your roof exactly.

*Height: 215mm
Width: 65mm
Depth: 80mm*

Habibat Bat Access Slates are made to order and you may need to provide a slate to the manufacturer for customisation. Slates are shipped direct from the manufacturer and will incur a shipping cost of £30-40 (ex VAT) for between one and ten slates. Delivery time is expected to be 2 - 3 weeks.



Images and text adapted from manufacturer's websites:

www.ibstock.com/eco-products
www.habibat.co.uk

Bird Boxes



1SP Schwegler Sparrow Terrace

A Woodcrete bird box which allows for several Sparrow pairs to nest in a single location. The box can either be integrated within the fabric of a building or otherwise fitted to the exterior of the building walls.

Dimensions: 245 x 430 x 200mm
Weight: 15kg

Vivara Pro Invisible Swift Box

The Vivipara Pro Invisible Swift Box is manufactured to UK brick sizes. This nest box is made from WoodStone®, a mixture of wood fibre and concrete.

It is designed to be built into a wall, where narrow cavity is present. An entrance hole of at least 3 x 6cm should be left, by leaving a slightly larger entrance, around 3.5cm will encourage other species such as house sparrows to occupy the nest. Leaving most of the entrance exposed and siting the box below five metres will encourage robins, wagtails and black redstarts to occupy the nest box.

Dimensions: 440 x 140 x 150mm



Habitat Starling Nest Box

This box provides an insulated concrete nesting chamber with a hole that is specifically designed to attract Starlings.

The box is designed to be integrated into the structure of the building and can be supplied with brick, block, stone, wood and rendered faces or can be left unfaced.

Dimensions: 215 x 215 x 120mm
Weight: 3kg

Images and text adapted from manufacturer's websites:

www.schwegler-natur.de
www.viviparapro.co.uk
www.habitat.co.uk



Examples of Swift Boxes

Ibstock Swift Box

A specially designed Swift nesting feature which can be integrated into the fabric of the building.

Size / Width / Height - 327 x 140 x 140mm.



Schwegler Type 25 Nest Brick

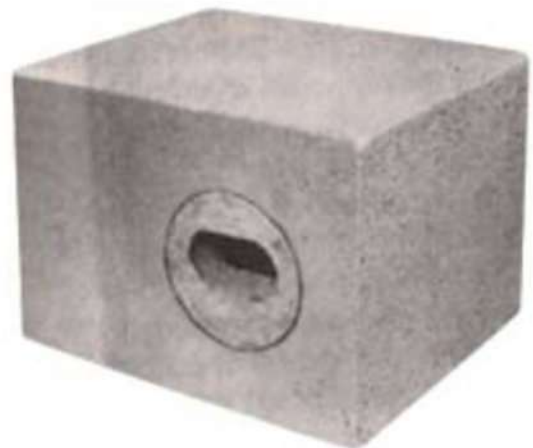
Designed for installation into the fabric of a building, this box is suitable for swifts.

Woodcrete

Entrance hole 55 x 33mm

Dimensions 265mm wide x 220mm deep x 180mm high

Weight 8.8kg



Green & Blue Swift Box

Designed for installation into the fabric of buildings. Cast concrete construction.

Size / Width / Height - 440 x 215 x 160mm.



Bird Boxes

Vivara Pro WoodStone House Sparrow Nest Box

The Vivara Pro WoodStone House Sparrow Nest Box is an attractive, hardwearing bird box that will provide nesting space for House Sparrows and other communal nesting species. This box is made from WoodStone, a mixture of wood fibres from fully certified FSC wood sources and concrete, and it is designed to last for years. It is breathable and maintains a consistent temperature inside, providing excellent insulation for nesting birds. This bird box has been designed to either be built into the fabric of a new building or attached to the external wall.

*Height: 220mm
Width: 290mm
Depth: 165mm*

Weight: 7kg

Hole size: Oval



Vivara Pro WoodStone Build-in Swift Nest Box

The Vivara Pro WoodStone Swift Nest Box is an attractive, hardwearing bird box that will provide nesting space for Swifts, and should ideally be placed on the north or east elevations, at least 5m up and beneath an eave.

This box is made from WoodStone, a mixture of wood fibres from fully certified FSC wood sources and concrete, and it is designed to last for years. It is breathable and maintains a consistent temperature inside, providing excellent insulation for nesting birds. This bird box has been designed to be built into the fabric of a new building.

*Height: 185mm
Width: 335mm
Depth: 160mm*

Weight: 7kg

Hole size: Oval 34mm



APPENDIX 3
Suitable Barn Owl Mitigation Features

Example 1: Barn Owl Roost Mitigation



Example 2: Barn Owl Roost Mitigation



Example 3: Barn Owl Roost Mitigation



Example 4: Barn Owl Roost Mitigation



Example 5: Barn Owl Roost Mitigation



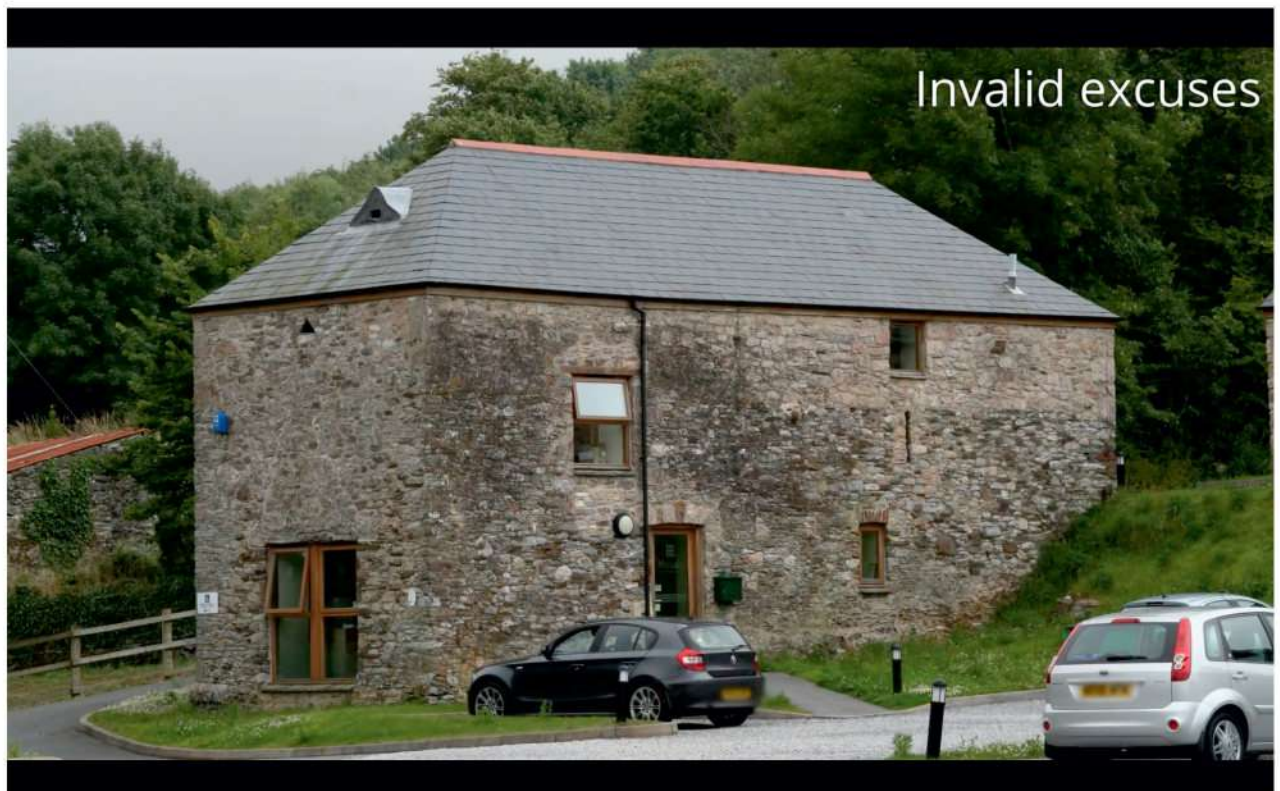
Example 6: Barn Owl Roost Mitigation



Example 7: Barn Owl Roost Mitigation

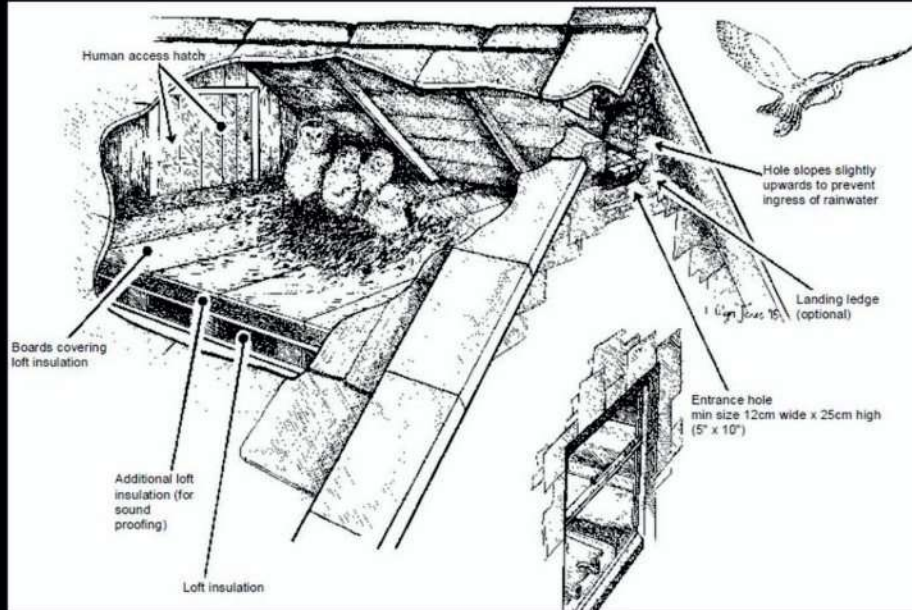


Example 8: Barn Owl Roost Mitigation



Example 9: Barn Owl Roost Mitigation

Enhancement



Example 10: Barn Owl Roost Mitigation

Invalid excuses





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