ROBERT HITCHINS LTD

ECOLOGYSOLUTIONS

Part of the ES Group

SPITFIRE ROAD, CALNE

ECOLOGICAL ASSESSMENT

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ecology solutions for planners and developers

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1. INTRODUCTION

1.1. Background & Proposals

1.1.1. Ecology Solutions was commissioned by Robert Hitchins Ltd in September 2021 to undertake an Ecological Assessment of Spitfire Road, Calne (hereafter referred to as 'the site').

1.1.2. The proposals for the site are for the construction of a local centre comprising two units with associated parking (see Appendix 1).

1.2. Site Characteristics

1.2.1. The site is situated in the east of Calne (see Plan ECO1) and comprises an area of semi-improved grassland field which is bounded by hedgerows. The site has been used as a works compound and so is heavily disturbed with large areas of bare ground. Abberd Lane is adjacent to the north of the site with agricultural land beyond, and Spitfire Road is adjacent to the west, with existing residential development beyond. The south of the site is bordered by open grassland fields with Abberd Brook beyond, and the east of the site is bordered semi-improved fields with agricultural land beyond.

1.3. Ecological Assessment

1.3.1. This document assesses the ecological interest of the site. The importance of the habitats within the site is evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.3.2. Where necessary mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site. Specific enhancement opportunities that are available for habitats and wildlife within the site are detailed where appropriate, with reference to the 'UK Post-2010 Biodiversity Framework'[2]. Finally, conclusions are drawn.

[1] CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester.
[2] JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) *UK Post-2010 Biodiversity Framework. July 2012.* http://jncc.defra.gov.uk/page-6189

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 up to date background information on the site and its immediate surroundings, Ecology Solutions contacted the Wiltshire and Swindon Biological Records Centre (WSBRC) in July 2022. Where appropriate this information is included within this report, although much of it is cited as confidential and can only be made available upon request under the records centre terms and conditions.

2.2.2. Further information on designated sites was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[3] database, which utilises data provided by Natural England. This information is reproduced, where appropriate, on Plan ECO1 and at Appendix 2.

2.3. Habitat Survey Methodology

2.3.1. Surveys were carried out by Ecology Solutions in September 2021 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and associated plant species, with notes made on fauna utilising these areas. Subsequent checks were completed between April and July 2022.

2.3.2. The site was subject to a detailed survey based around an extended Phase 1 survey methodology[4], as recommended by Natural England, 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 site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. The initial survey work was undertaken within the optimal period for Phase 1 surveys, and given subsequent check surveys were also undertaken it is considered that an accurate and robust assessment has been made.

[3] https://magic.defra.gov.uk
[4] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

2.4. **Faunal Survey**

2.4.1. General faunal activity observed during the course of the surveys was recorded, whether visually or by call. Specific attention was paid to the potential presence of any protected, rare, notable or priority species. In addition, specific surveys were undertaken for bats, Badgers *Meles meles,* Great Crested Newts *Triturus cristatus* and reptiles.

2.4.2. **Bats**. Field surveys were undertaken with regard to best practice guidelines issued by Natural England[5], the Joint Nature Conservation Committee[6] and the Bat Conservation Trust[7].

Tree Assessment

2.4.3. In September 2021, any trees immediately adjacent to the site were assessed for their potential use by bats. Ladders, binoculars and an endoscope were used where necessary.

2.4.4. For a tree to be classified as having some potential for roosting bats it must usually have one or more of the following characteristics:

- 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; and / or
- Very dense covering of mature Ivy *Hedera helix* over the trunk.

2.4.5. **Badgers**. Specific surveys were undertaken within and adjacent to the site, to search for evidence of Badgers in September 2021 with subsequent checks between April and July 2022. Such surveys comprise two main elements. The first of these is a thorough search for evidence of Badger setts. If any setts are encountered each sett entrance is noted and plotted even if the entrance appeared disused. The following information is recorded:

i) The number and location of any well used or very active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.

ii) The number and location of any 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.

iii) The number of any disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be

[5] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[6] Mitchell-Jones, A.J. & McLeish, A.P. (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[7] Bat Conservation Trust (2016). *Bat Surveys for Professional Ecologist – Good Practice Guidelines 3rd Edition*. Bat Conservation Trust, London.

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 used to be and the remains of the spoil heap.

2.4.6. Secondly, Badger activity such as well-worn paths and run-throughs, snagged hair, footprints, latrines and foraging signs are recorded so as to build up a picture of the use of the site, if any, by Badgers.

2.4.7. **Great Crested Newts.** The land within and surrounding the site was assessed in terms of its habitat quality and its ability to support Great Crested Newts.

2.4.8. There are no ponds within the site itself and OS maps indicate that there are five ponds (P1-P5) within 250m of the site (see Plan ECO1). Pond P1 is separated from the site by grassland and a newly planted hedgerow. Pond P2 is separated from the site by Spitfire Way and existing residential development, ponds P3 and P4 are separated from the site by Spitfire Road and open land, pond P5 is separated from the site by Abberd Brook.

2.4.9. Ecology Solutions attempted to gain access to ponds P1, P2, P3 and P4 to undertake environmental DNA (eDNA) surveys to determine the presence of Great Crested Newts and to provide additional context for the Ecological Assessment. No access was sought for pond P5 as the Abberd Brook is a flowing watercourse that is considered to represent a dispersal barrier for this species.

2.4.10. Access was granted for ponds P1 and P3 but was denied for ponds P2 and P4.

eDNA Survey

2.4.11. Specific eDNA sample surveys of P1 and P3 were undertaken on 26th April 2022.

2.4.12. The eDNA survey involves collecting 15-20 samples of 40ml of pond water at equally spaced locations around the perimeter of a pond. These 15-20 samples are then mixed together in a plastic sample bag to form a single amalgamated sample of the water in the pond. The amalgamated sample is mixed thoroughly to ensure any DNA present does not collect at the base of the sample bag.

2.4.13. 15ml of water is taken from the amalgamated sample and added to 35ml of ethanol within a sample tube, to preserve any DNA present. The sample tubes are then shaken vigorously to mix the water sample and ethanol thoroughly and prevent degradation of any DNA. This technique is repeated six times, using water from the amalgamated sample, such that six sample tubes are filled.

2.4.14. The six sample tubes are then sent off to SureScreen to be analysed using polymerase chain reaction amplification techniques. The analysis involves producing DNA sequences that verify the taxonomic assignation of amplified DNA signals.

2.4.15. Terrestrial habitats within the site itself (and in areas surrounding ponds surveyed) were also searched for Great Crested Newts. This involved searching under logs, rocks and rubbish, which are favoured hiding places.

Habitat Suitability Index (HSI) Survey

2.4.16. Ponds P1 and P3 were also subject to a HSI survey in 2022.

2.4.17. An HSI survey is a quantitative measure of habitat quality for Great Crested Newts and is utilised as part of the assessment for a European Protected Species licence application.

2.4.18. An HSI survey is based on ten suitability indices that include:

- Location;
- Pond area;
- Pond drying;
- Water quality;
- Shade;
- Fowl;
- Fish;
- Ponds;
- Terrestrial habitat; and
- Macrophytes cover.

2.4.19. Scores are attributed to each index and are then converted to suitability index scores on a scale from 0.01 to 1 (1 represents optimal habitat). The ten scores are multiplied together and the tenth root of this number is then calculated to give the overall HSI score.

Reptiles

2.4.20. The site provides some suitable habitat for reptiles in the form of semi-improved grassland, however it is considered that the field margins out side of the site boundary provide more suitable habitat.

2.4.21. Specific surveys for reptiles were carried out between April and May 2022 around the field margins surrounding the site. The methodology utilised principally derived from guidance given in the Herpetofauna Workers Manual[8]. Areas of suitable habitat were surveyed for the presence of reptiles using artificial refugia ("tins"). In total 60 0.5m x 0.5m roofing felt tins were placed within suitable habitat within the site. The tins were positioned in the site in October 2021 to allow bedding / settling in before the surveys commenced in April 2022.

2.4.22. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold-blooded), reptiles use them to bask under and raise their body temperature which allows them to forage earlier and later in the day.

[8] Gent, T and Gibson, S. JNCC. (2003). Herpetofauna Workers Manual. Peterborough

2.4.23. To determine presence / absence the tins were checked for reptile activity over seven visits at appropriate times of the day (avoiding the middle of the day when the ambient air temperature is at its highest) in accordance with Natural England guidance. Optimum weather conditions for reptile surveying are temperatures between 10°C and 17°C, intermittent or hazy sunshine and little or no wind.

3. ECOLOGICAL FEATURES

3.1. The site was surveyed in September 2021 with further checks between April and July 2022. The following main habitat / vegetation types were identified:

- Semi-improved Grassland;
- Hedgerows; and
- Hardstanding.

3.2. The location of these habitats is shown on Plan ECO2.

3.3. Each habitat present is described below with an account of the representative plant species present.

3.4. Semi-Improved Grassland

3.4.1. The field has been used as a works compound in the past and so the ground is heavily disturbed and has large patches of bare ground. The grassland within the site is managed by cutting. Species present within the sward of include Barley Grass *Hordeum vulgare*, False Oat-grass *Arrhenatherum elatius*, Perennial Rye-grass *Lolium perenne*, Creeping Bent *Agrostis stolonifera*, Yorkshire Fog *Holcus lanatus*, Cock's Foot *Dactylis glomerata*, and Timothy *Phleum pratense*. Herbaceous species are relatively limited and include Bristly Oxtongue *Helminthotheca echioides*, White Clover *Trifolium repens*, Broad-leaved Dock *Rumex obtusifolius*, Creeping Buttercup *Ranunculus repens*, Creeping Thistle *Cirsium arvense*, Common Nettle *Urtica dioica*, Common Vetch *Vicia sativa*, Silverweed *Potentilla anserina*, Wild Carrot *Daucus carota*, Spear Thistle *Cirsium vulgare*, Doves-foot Cranesbill *Geranium molle*, Red Clover *Trifolium pratense*, Ragwort *Jacobaea vulgaris*, Soft Rush *Juncus effusus*, Dandelion *Taraxacum* sp., Self-Heal *Prunella vulgaris*, Meadow Vetchling *Lathyrus pratensis*, Scentless Mayweed *Tripleurospermum inodorum*, with rarely found Birds-foot Trefoil *Lotus corniculatus*, and very rarely found Black Knapweed *Centaurea nigra*.

3.5. Hedgerow

3.5.1. Hedgerows H1 is a newly planted hedgerow in the south of the site. This hedgerow is approximately 2m in height and box cut. Species present include Hawthorn, Hazel *Corylus avellana*, Field Maple, Dog Rose, Blackthorn, Oak, Ash, Wayfaring Tree *Viburnum lantana* and Guelder Rose *Viburnum opulus*.

3.6. Hardstanding

3.6.1. The access road Spitfire Way is also present as hardstanding within the site.

3.7. Background Records

3.7.1. WSBRC returned records of Dwarf Spurge *Euphorbia exigua* from approximately 100m east of the site. During the surveys, no Dwarf Spurge were recorded within the site.

4. WILDLIFE USE OF THE SITE

4.1. During the surveys undertaken in 2021 and 2022 general observations were made of any faunal use of the site, with specific attention paid to the potential presence of protected or notable species. In addition, specific surveys were undertaken with regard to bats, Badgers, Great Crested Newts and reptiles.

Bats

Tree Surveys

4.2. No trees surrounding the site were noted as having developed features with the potential to support roosting bats.

4.3. **Background Records.** WSBRC returned records of Brown Long-eared and Common Pipistrelle bats from approximately 100m east of the site in 2011 and 2016. Records were also returned from *Myotis* sp. 0.1km west of the site in 2013, Noctule and Serotine 0.2km west in 2013, and Lesser Horseshoe 0.8km west of the site in 2020

Badgers

4.4. No evidence of Badger such as any setts, latrines, mammal paths, snagged hairs, foraging marks or footprints were recorded within or immediately adjacent to the site.

4.5. **Background Records.** WSBRC returned records of Badger approximately 100m east of the site in 2014.

Other Mammals

4.6. No evidence of any other notable or protected mammals was recorded during the surveys undertaken, although it is considered that the grassland offers suitable habitat for a arrange of small mammals.

4.7. **Background Information.** WSBRC returned records of European Hedgehog *Erinaceus europaeus* from within the same grid square as the site. Records were also returned for Brown Hare *Lepus europaeus* from 0.3km north of the site in 2016.

Birds

4.8. During the survey work only common species such as Wood Pigeon *Columba palumbus* and Blackbird *Turdus merula* were noted within the site.

4.9. The site offers limited opportunities for nesting and foraging birds in terms of the semi-improved grassland and hedgerow and the surrounding hedgerows and trees within the wider area.

4.10. **Background Records.** WSBRC returned records of the Red List species Greenfinch *Chloris chloris* in 2018, Herring Gull *Larus argentatus* in 2019, Linnet *Linaria cannabina* and Starling *Sturnus vulgaris* in 2016, the Red List, Priority and Schedule 1 species House Sparrow *Passer domesticus* in 2019, and Yellowhammer *Emberiza citrinella* in 2016, the Red List and Schedule 1 species Skylark *Alauda arvensis*, and the Schedule 1 and Priority species

Reed Bunting Emberiza schoeniclus in 2015, approximately 100m east of the site. It is not considered that any of these species would be reliant upon the site given the surrounding habitat.

4.11. The site hedgerows provides some suitable foraging and nesting habitat for Linnet, Starling, Yellowhammer, Skylark (albeit the fields are smaller than preferred by this species), and Reed Bunting, and some foraging opportunities for House Sparrow and Herring Gull. However, it is not considered that any of these species would be reliant upon the site given the surrounding habitat.

Great Crested Newts

4.12. There are no ponds within the site itself but there are four further (P1, P2, P3, and P4) located within 250m of the site.

eDNA Survey

4.13. Access was granted for ponds P1 and P3 but denied for pond P2 and P4. Both pond P1 and P3 returned a negative result for the presence of Great Crested Newts.

HSI Survey

4.14. The HSI score for a pond lies between 0 and 1, with 0 indicating unsuitable habitat and 1 indicating optimal habitat. A score of <0.5 indicates poor habitat, 0.5-0.59 indicates below average habitat, 0.6-0.69 indicates average habitat, 0.7-0.79 indicates good habitat and >0.8 indicates excellent habitat.

4.15. Pond P1 is located approximately 20m south of the site and is a attenuation feature provided for the previous development to the south. The HSI score for this pond has been calculated at 0.85, indicating this pond offers excellent habitat for Great Crested Newts.

4.16. Pond P3 is located approximately 250m north of the site and is shallow, muddy, compression in the ground fully shaded by trees and scrub. The HSI score for this pond has been calculated at 0.41, indicating it offers poor habitat for Great Crested Newts.

Table 1. HSI Results Table.

Pond	**P1**	**P3**
Location	1	1
Pond area	0.9	0.2
Pond drying	1	0.1
Water quality	0.33	0.33
Shade	1	0.1
Fowl	1	1
Fish	1	1
Ponds	1	1
Terr'l habitat	1	0.67
Macrophytes	0.7	0.3
HSI Score	**0.85**	**0.41**

4.17. **Background Records.** WSBRC contained no records of any Great Crested Newts from within the site. The closest record returned was located approximately 1.2km southeast of the site in 2012.

4.18. Therefore, due to the negative eDNA results of the ponds surrounding the site, and the lack of records within the surrounding area, it is not considered likely that this species would be present within the site or affected by the proposals. As such, there will be no further consideration for this species in this report.

Reptiles

4.19. Surveys for reptiles were carried out between April and May 2022 within the site and along the surrounding grassland field margins. During these surveys, a peak count of 1 Slow Worms *Anguis fragilis* and 2 Grass Snakes. No reptiles were recorded from within the site itself and were mainly located along the field margins to the north and east of the site. The results of these surveys can be seen on Plan ECO3 and on Table 2 below, along with the weather conditions for these surveys.

Table 2. Reptile survey conditions 2022.

Survey no.	Date	Weather conditions	Temp. °C	Reptiles Recorded
1	14.4.22	Overcast and dry	15	None
2	19.4.22	Overcast and dry	13	None
3	22.4.22	Overcast and dry	14	Male and Juvenile Grass Snake,
4	26.4.22	Clear and dry	12	None
5	2.5.22	Overcast and dry	13	Juvenile Grass Snake
6	4.5.22	Clear and dry	14	2 Juvenile Grass Snake
7	12.5.22	Overcast and dry	16	2 Juvenile Grass Snake, Juvenile Slow Worm

4.20. **Background Records.** WSBRC returned records of Grass Snake and Slow Worm from approximately 100m east of the site in 2017.

4.21. The grassland within the site is currently considered to have potential to support reptile species. Surveys indicate that a low population of Slow Worms and Grass Snake are present within the site, based on the Froglife Advice Sheet 10[9].

Invertebrates

4.22. The site is expected to support a limited range of common invertebrate species, but there is no evidence to suggest that any protected or notable

[9] Froglife (1999). An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife, Halesworth.

species are likely to be present. The habitat present and cutting management reduce the site's suitability to support a diverse / notable invertebrate assemblage.

4.23. **Background Records.** WSBRC returned records of the notable species Wall *Lasiommata megera* and Duke of Burgundy *Hamearis lucina* in 2014 and historical records of Grayling *Hipparchia semele* in 1994 from approximately 100m east of the site. Wall butterflies are a high priority, widespread species and the caterpillar feed on a variety of grasses including Cock's Foot and Yorkshire Fog. Duke of Burgundy is a priority species whose caterpillar feed on Cowslip *Primula veris* and Primrose *Primula vulgaris*. Grayling is a widespread species, its caterpillar feed on a variety of grasses including Sheep's-fescue *Festuca ovina*, and Red Fescue *Festuca rubra*. Is it considered that these species could utilise the site, although they would not be solely dependent on the site, given the surrounding habitat and the fact their larval foodplants are common and widespread.

Other Species

4.24. Given the habitats present and records from the local area, there is no evidence from site surveys or desk study to suggest that any other protected or notable species would be present within the site or affected by the proposed development.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Site Evaluation

5.1.1. The latest guidelines for ecological evaluation produced by CIEEM[10] proposes 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 Ratcliffe[11]. 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 a 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). The Wiltshire Biodiversity Action Plan (2008)[12] contains Habitat Action Plans for the more significant of the UK priority habitats within the county.

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.

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

[10] CIEEM (September 2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine.* Version 1.2. Chartered Institute of Ecology and Environmental Management, Winchester

[11] 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.

[12] The Wiltshire Biodiversity Action Plan 2008. Wiltshire Wildlife Trust.

Habitat Evaluation

5.2. Designated Sites

5.2.1. **Statutory Sites**. There are no statutory designated sites of nature conservation interest within or immediately adjacent to the site. The nearest statutory designated site is Calstone and Cherhill Downs SSSI which is located approximately 4km southeast of the site (see Plan ECO1) and is designated for its chalk grassland habitat.

5.2.2. This SSSI is well separated from the site by major and minor roads, arable fields and existing development. The SSSI Impact Risk Zones show no likely impacts from the proposed development and it is not considered that there will be any adverse impacts (either direct or indirect) to this SSSI as a consequence of the development at the site.

5.2.3. **Non-Statutory Sites.** There are no non-statutory sites of nature conservation interest within or directly adjacent to the site. The nearest non-statutory site is Sands Farm Quarry Local Wildlife Site (LWS), which is located approximately 0.7km to the southeast of the site (see Plan ECO1). This LWS is designated for its series of sediment lagoons associated with the sand and quarry processing plant and is separated from the site by grassland fields, Low Lane, woodland plantation and operational mineral extraction works. As such, it is not considered there will be any direct or indirect adverse effects on this non-statutory designated site as a result of the proposals.

5.2.4. On this basis, it is not considered that any detrimental effects (either direct or indirect) will arise as a result of residential proposals at the site to any other statutory or non-statutory site of nature conservation interest.

5.3. Habitats within the Site

5.3.1. The habitats within the site are generally not considered to be of any particular intrinsic ecological importance consisting only of semi-improved grassland which has been used as a works compound in the past and thus is heavily degraded with large patches of bare ground.

Semi-improved Grassland

5.3.2. The semi-improved grassland within the site is of very limited ecological value, comprising mainly of common and widespread species and given the heavily disturbed nature resulting from its prior use as a works compound.

5.3.3. The majority of the grassland will be lost to the proposed development.

5.3.4. **Mitigation and Enhancement.** Given the limited intrinsic value of the grassland it is not considered that any mitigation would be required. However, as an enhancement to increase the ecological value of the site, it is recommended that, if possible, areas of open space within the site are sown with a species-rich seed mixture (such as Emorsgate's Standard General Purpose Meadow Mixture EM2 or similar) and subject to a suitable management regime to enhance the floristic diversity of the site

accordingly. The management of the species-rich grassland should aim to create a tussocky grassland with a long sward to provide suitable habitat for foraging bats (including Horseshoe bats) and to provide suitable habitat for reptiles. The inclusion of tree/shrub planting that includes native species or those of wildlife value would also enhance the ecological value of the site and diversify the habitats present.

Hedgerow

5.3.5. The hedgerow within the site is of relatively greater ecological value in the context of the site. The hedgerow offers some suitable nesting opportunities for birds, foraging and navigational opportunities for bats, and potentially suitable terrestrial habitat for amphibians.

5.3.6. The hedgerow and trees are to be retained and safeguarded within the proposed development. Although hedgerow H8 and sections of hedgerow H3 will be lost.

5.3.7. **Mitigation and Enhancements.** The retained hedgerow will be buffered from any built form. New hedgerow planting will be undertaken within the site.

5.3.8. Measures will be put in place to ensure that retained hedgerow is safeguarded from direct impacts during the construction phase, e.g. fenced-off during construction to prevent encroachment into these areas by construction machinery. No construction machinery or materials will be stored within this area at any point during the development.

Hardstanding

5.3.9. The area of hardstanding is of no ecological value and is to be retained as an access road to the development.

5.3.10. **Mitigation and Enhancement**. No mitigation required.

Faunal Evaluation

Bats

5.3.11. **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")[13]. These include provisions making it an offence to:

- Deliberately kill, injure or take (capture) bats;
- Deliberately disturb bats in such a way as to be likely to significantly affect:-
  (i) the ability of any significant group of bats to survive, breed or rear or nurture their young; or to hibernate; or

[13] On 1st January 2021 The Habitats Regulations were replaced by the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019, however this does not materially alter the provisions of the Regulations and this assessment. Most of these changes involved transferring functions from the European Commission to the appropriate authorities in England and Wales. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

(ii) to affect significantly the local distribution or abundance of the species concerned;

- Damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

5.3.12. While the legislation is deemed to apply even when bats are not in residence, Natural England guidance suggests that 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.

5.3.13. The words 'deliberately' and 'intentionally' include actions where a court can infer that the defendant knew 'the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.3.14. The offence of damaging (making it worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.3.15. Licences can be granted for development purposes by an 'appropriate authority' under Regulation 55 (e) of the Habitats Regulations. In England, the 'appropriate authority' is Natural England (the government's statutory advisors on nature conservation). European Protected Species licences permit activities that would otherwise be considered an offence.

5.3.16. In accordance with the Habitats Regulations the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

1. The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. There must be no satisfactory alternative; and
3. The favourable conservation status of the species concerned must be maintained.

5.3.17. Licences can usually only be granted if the development is in receipt of full planning permission (and relevant conditions, if any, discharged).

5.3.18. Seven species of bat are Priority Species, these are Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe and Lesser Horseshoe.

5.3.19. **Site usage.** No trees adjacent to the site have developed features with potential to support roosting bats. It is considered that the grassland and hedgerow offer some foraging and navigational opportunities for bats albeit very limited.

5.3.20. **Mitigation and Enhancement.** It is recommended that, if possible, areas of open space are sown with a species-rich seed mixture (such as Emorsgate's Standard General Purpose Meadow Mixture EM2) and new tree/shrub planting include native species or those of wildlife value to enhance any potential foraging opportunities for bats.

5.3.21. If deemed necessary, a sympathetic lighting regime associated with the new proposals could be used to minimise light spillage into key areas, e.g.

along the hedgerow. A sympathetic lighting regime could be achieved through the use of sodium or warm and white spectrum LED lights, which produce less light spillage than other types of lighting and have no low / no UV content (or UV-filtered lights). In addition, the spillage of the light can be reduced further through use of low-level lights, the employment of lighting 'hoods' which will direct light below the horizontal plane, preferably with no upwards tilt and the use of short-timer motion sensors for any external lighting.

5.3.22. As an enhancement, it is recommended that bat boxes (see Appendix 3 for suitable examples), are installed on new buildings or be erected on suitable semi-mature/mature trees (within or adjacent to the site boundaries) out of reach of opportunistic predators such as cats within the site. These models of bat box are known to be attractive to a number of the smaller bat species, including Pipistrelle (known from the site). This measure will provide enhanced roosting opportunities within the site.

Badgers

5.3.23. **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 southwest.

5.3.24. 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"[14]. "Current use" of a Badger sett is defined by Natural England as "how long it takes the signs to disappear", or more precisely, to appear so old as to not indicate "current use".

5.3.25. In addition, the intentional elimination of 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.

5.3.26. **Site Usage.** No evidence of Badger such as any setts, latrines, mammal paths, snagged hairs, foraging marks or footprints were recorded within or immediately adjacent to the site.

5.3.27. **Mitigation and Enhancement.** Although no direct evidence of Badgers was recorded within the site, given there are known records from the local area and based on the habitat present and the dynamic nature of Badgers it is recommended that the development be mindful of potential impacts to Badgers and that all contractors are briefed regarding the possible presence of Badgers.

5.3.28. Any trenches or deep pits that are to be left open overnight should be provided with a means of escape should a Badger enter. This could simply be in the form of a roughened plank of wood placed in the trench as a

[14] Protection of Badgers Act 1992 (as amended). Guidance on 'Current Use' in the definition of a Badger Sett http://www.naturalengland.org.uk/ourwork/regulation/wildlife

ramp to the surface. This is particularly important if the trench fills with water.

5.3.29. Any trenches/pits should be inspected each morning to ensure no Badgers have become trapped overnight. Should a Badger get stuck in a trench it will likely attempt to dig itself into the side of the trench, by forming a temporary sett. Should a trapped Badger be encountered, Ecology Solutions should be contacted immediately for further advice.

5.3.30. The storage of topsoil or other 'soft' building materials within the site should be given careful consideration. Badgers will readily adopt such mounds as setts, which would then be afforded the same protection as established setts. So as to avoid the adoption of any mounds, they should be subject to daily inspections (or nightly patrols if 24 hour security is present on site) or consideration given to fencing them with Badger proof fencing.

5.3.31. During the development, the storage of any chemicals required for the building construction should be well away from any Badger activity and contained in such a way that they cannot be accessed or knocked over by any roaming Badgers.

5.3.32. The inclusion of new landscape planting and open space as part of the development proposals within the site and surrounding area would maintain foraging opportunities for Badgers should they utilise the site. The provision of an orchard and use of berry / fruit bearing species in the landscape planting scheme would provide seasonal foraging resources for Badgers.

Birds

5.3.33. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, whilst Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection whilst nesting.

5.3.34. **Site Usage.** It is considered that grassland within the site offers some limited suitable foraging opportunities.

5.3.35. The vast majority of the grassland is to be lost to the development.

5.3.36. **Mitigation and Enhancement.** Existing foraging and nesting opportunities for birds in the existing surrounding hedgerows and trees is to be retained. The provision of berry/fruit-bearing species would provide seasonal foraging resources for birds.

5.3.37. It is recommended that if any clearance of any suitable nesting vegetation is required, including tree felling (albeit none is anticipated), this be undertaken outside the bird nesting season (the majority of birds nesting March to July inclusive with a small number later in the year) to avoid any potential offence. Should the above timing constraints conflict with any timetabled works, it is recommended that works commence only after a suitably qualified ecologist has undertaken checks to ensure no nesting birds are present. If nesting birds are found to be present during checks then clearance would need to be delayed until young have fledged.

5.3.38. Simple enhancement measures could ensure the ornithological interest at the site is increased. For example, the erection of nest boxes on suitable retained trees in the surrounding area. Using nest boxes of varying designs would maximise the species complement attracted to the site and, where possible, these could be tailored to provide opportunities for Red Listed / Priority Species known from the local area (see Appendix 4 for suitable examples).

Reptiles

5.3.39. **Legislation.** All six British reptile species receive a degree of legislative protection that varies depending on their conservation importance.

5.3.40. Smooth Snake *Coronella austriaca* and Sand Lizard *Lacerta agilis* receive 'full protection' under the Wildlife and Countryside Act 1981 as well as protection under the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These receive protection from:

- Killing, injuring, taking;
- Possession or control (of live or dead animals, their parts or derivatives);
- Damage to, destruction of, obstruction of access to any structure or place used for shelter or protection;
- Disturbance of any animal occupying such a structure or place;
- Selling, offering for sale, possession or transport for purposes of sale (live or dead animal, part or derivative).

5.3.41. Common Lizard, Grass Snake *Natrix helvetica*, Slow Worms and Adder are only 'partially protected' under the Wildlife and Countryside Act 1981 (as amended) and as such only receive protection from:

- Deliberate killing and injuring;
- Being sold or other forms of trading.

5.3.42. The legislation relevant to common reptiles therefore protects the species, but not their habitat and any works that avoid killing or injuring any of these species, should ensure that an offence is avoided.

5.3.43. **Site Usage.** Though no reptiles were found within the site itself, grassland margins in the wider area provide suitable habitat for reptiles and surveys between April and May 2022 recorded small populations of Grass Snake and Slow Worm.

5.3.44. **Mitigation and Enhancement.** Given the low numbers recorded and limited presence at the margins of the site a small-scale trapping and translocation exercise is recommended in combination with a habitat manipulation exercise. Reptiles should be moved to a fenced off receptor area around pond P1 until development is complete and fencing can be removed allowing colonisation into suitable areas of the completed development. Habitat manipulation involves controlled cutting in a directional manner to persuading reptiles present to move towards suitable retained habitat or suitable off-site habitats. This would ensure no reptiles (if present in working areas) are injured or killed during works.

5.3.45. It is recommended that refuges, such as log piles are created within areas of open space, if possible, to provide additional shelter and hibernation opportunities for reptiles from the wider field. Log piles should be included around the pond to the south and along the boundary hedgerows in the wider area to enhance these areas for reptiles.

5.4. Invertebrates

5.4.1. **Site usage.** Given the habitats present it is likely an assemblage of common invertebrate species would be present within the site, although there is no evidence to suggest any notable / protected invertebrates would be present.

5.4.2. **Mitigation and Enhancements**. The recommended creation of new areas of species-rich grassland would maintain opportunities for a range of invertebrates.

5.4.3. It is recommended that if possible the seed mix used in the new areas of open space include a variety of grass species including Yorkshire Fog, Cocks Foot, Sheep's-fescue and Red Fescue, as well as Cowslip and Primrose, as this would provide new opportunities for Wall, Duke of Burgundy and Grayling butterflies, and a number of invertebrates including those Priority Species known from the local area.

5.4.4. The retention and creation of log piles would provide suitable opportunities for saproxylic invertebrates. The implementation of other potential mitigation/enhancement measures recommended above would also likely provide knock-on benefits for invertebrates.

6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at the site is issued nationally through the National Planning Policy Framework (NPPF) and locally through the Wiltshire Core Strategy. The proposed development will be judged in relation to the policies contained within these documents.

6.2. National Policy

National Planning Policy Framework

6.2.1. Guidance on national policy for biodiversity and geological conservation is provided by the NPPF, published in March 2012, revised on 24 July 2018, February 2019 and again on 20 July 2021. It is noted that 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).

6.2.2. The key element of the NPPF is that there should be "*a presumption in favour of sustainable development*" (paragraphs 10 to 11). It is important to note that 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[15].

6.2.3. 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 that there will be no adverse effect on that designated site as a result of the development in prospect.

6.2.4. 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 where possible (paragraph 174).

6.2.5. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.2.6. Paragraphs 179 to 181 of the NPPF comprise a number of principles that 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 SPAs, possible SACs, 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

[15] As noted earlier, on 1st January 2021 The 2017 version of the Habitats Regulations were replaced by the Conservation of Habitats and Species Amendment (EU Exit) Regulations 2019,

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.

6.2.7. 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.

6.3. Local Policy

Wiltshire Core Strategy

6.3.1. The Wiltshire Core Strategy (adopted January 2015) is the current document in use for planning control purposes. There is one policy within this document that relates in whole or in part to nature conservation, Core Policy **CP50**. This policy is concerned with protection of internationally, nationally and local designated sites, protected species, priority species and habitats, waterbodies and wildlife corridors.

North Wiltshire Local Plan

6.3.2. There are two Policies saved within the North Wiltshire Local Plan 2011 (adopted June 2006), that have been saved following adoption of the Wiltshire Core Strategy, Policies **NE12** and **NE14**. Policy NE12 is concerned with the protection, creation and enhancement of woodland, including ancient and semi-natural woodland, while Policy NE14 is concerned with the protection of trees, hedgerows, ponds and other ecological features.

6.4. Discussion

6.4.1. Recommendations have been set out in this report that would fully safeguard the existing ecological interest of the site against any development proposals. Where possible, measures to enhance the value of the site with regards to ecology and biodiversity, have been set out. Based on surveys and assessment undertaken, the presence and potential presence of protected species has been given due regard and measures to enhance the site for such species have been put forward.

6.4.2. Implementation of the measures set out in this report, as part of any development proposals, would 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 was commissioned by Robert Hitchins Ltd in September 2021 to undertake an Ecological Assessment of Spitfire Road, Calne.

7.2. The proposals for the site are for the construction of a local centre comprising two units with associated parking.

7.3. The site was surveyed based around extended Phase 1 survey methodology, as recommended by Natural England in September 2021 with further checks between April and July 2022. In addition, specific surveys were undertaken within the site in respect to bats, Badgers, Great Crested Newts and reptiles.

7.4. There are not considered to be any significant adverse effects (direct or indirect) on any statutory and non-statutory sites of nature conservation interest from the development proposals.

7.5. The site itself is of very limited ecological value as it is dominated by a heavily degraded grassland (with large bare patches) by virtue of its prior use as a works compound. As such, inclusion of any species-rich grassland and new planting with native species or those of wildlife value would improve the value of the site in ecology terms.

7.6. No trees adjacent to the site have features to support roosting bats. It is considered that the retention of the surrounding hedgerows, together with recommendations for enhancements within the site itself would benefit bats. The inclusion of bat boxes within the site would provide new roosting opportunities for bats.

7.7. Given the dynamic nature of Badgers it is recommended that all contractors should be briefed regarding the presence of Badgers and of the types of activities that would not be permissible on site.

7.8. The recommended enhancements within the site would maintain foraging and nesting opportunities for birds, while the erection of bird boxes within the site will also provide new nesting opportunities for this faunal group.

7.9. Both pond P1 and P3 returned negative eDNA results for Great Crested Newts and therefore they are not considered likely to be present within the site (or affected by the proposals).

7.10. The grassland provides some suitable habitat for reptiles and surveys between April and May 2022 recorded a low population of Grass Snake and Slow Worm within the site. A small-scale trapping and translocation exercise combined with a habitat manipulation exercise will be undertaken prior to any removal of suitable reptile habitat within the site.

7.11. Given the habitats present it is likely an assemblage of common invertebrate species would be present within the site, although there is no evidence to suggest any notable / protected invertebrates would be present. The creation of new areas of species-rich grassland would maintain opportunities for a range of invertebrates.

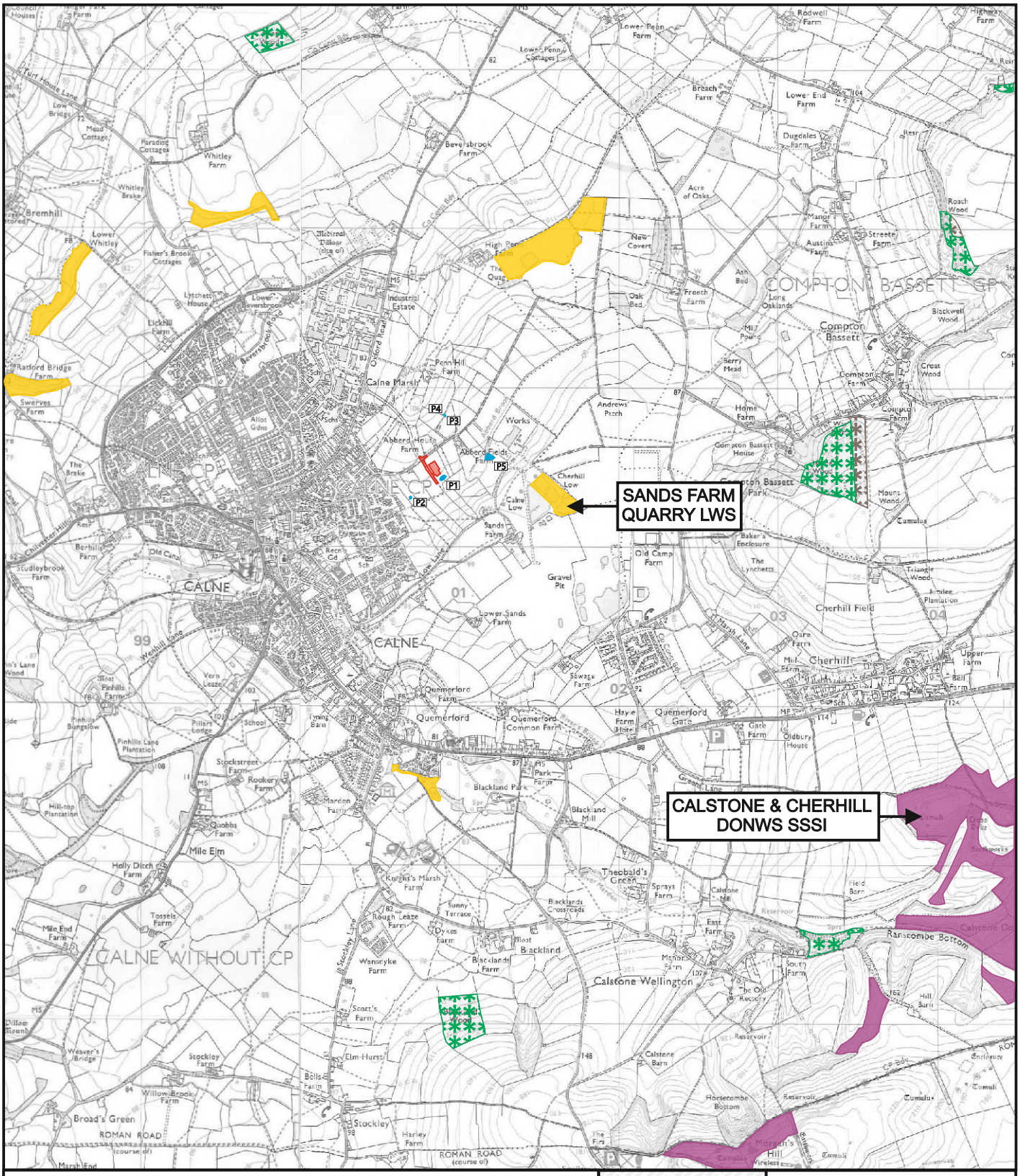
7.12. In conclusion, through the implementation of the safeguards and recommendations set out within this report it is considered that the proposals

accord with planning policy with regard to nature conservation at all administrative levels.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- SITE LOCATION
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- LOCAL WILDLIFE SITE (LWS)
- ANCIENT AND SEMI-NATURAL WOODLAND
- ANCIENT REPLANTED WOODLAND
- POND

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10186: SPITFIRE ROAD, CALNE

PLAN ECO1: SITE LOCATION AND ECOLOGICAL DESIGNATIONS

Rev: B

Jan 2023

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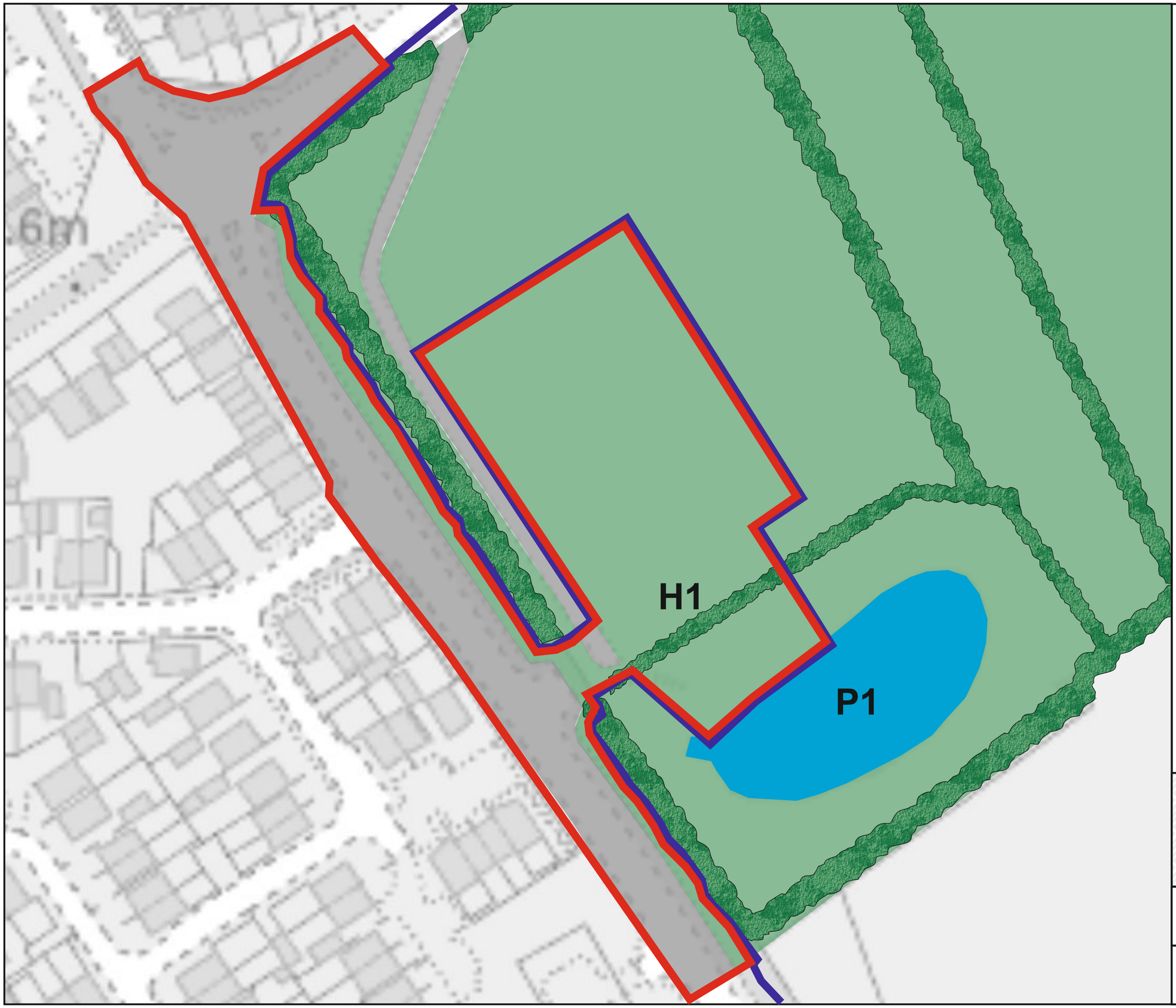
PLAN ECO2

Ecological Features



KEY:

- SITE BOUNDARY
- FUTURE DEVELOPMENT AREA
- SEMI IMPROVED GRASSLAND
- HARDSTANDING
- HEDGEROW
- POND

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PLAN ECO2:
ECOLOGICAL FEATURES

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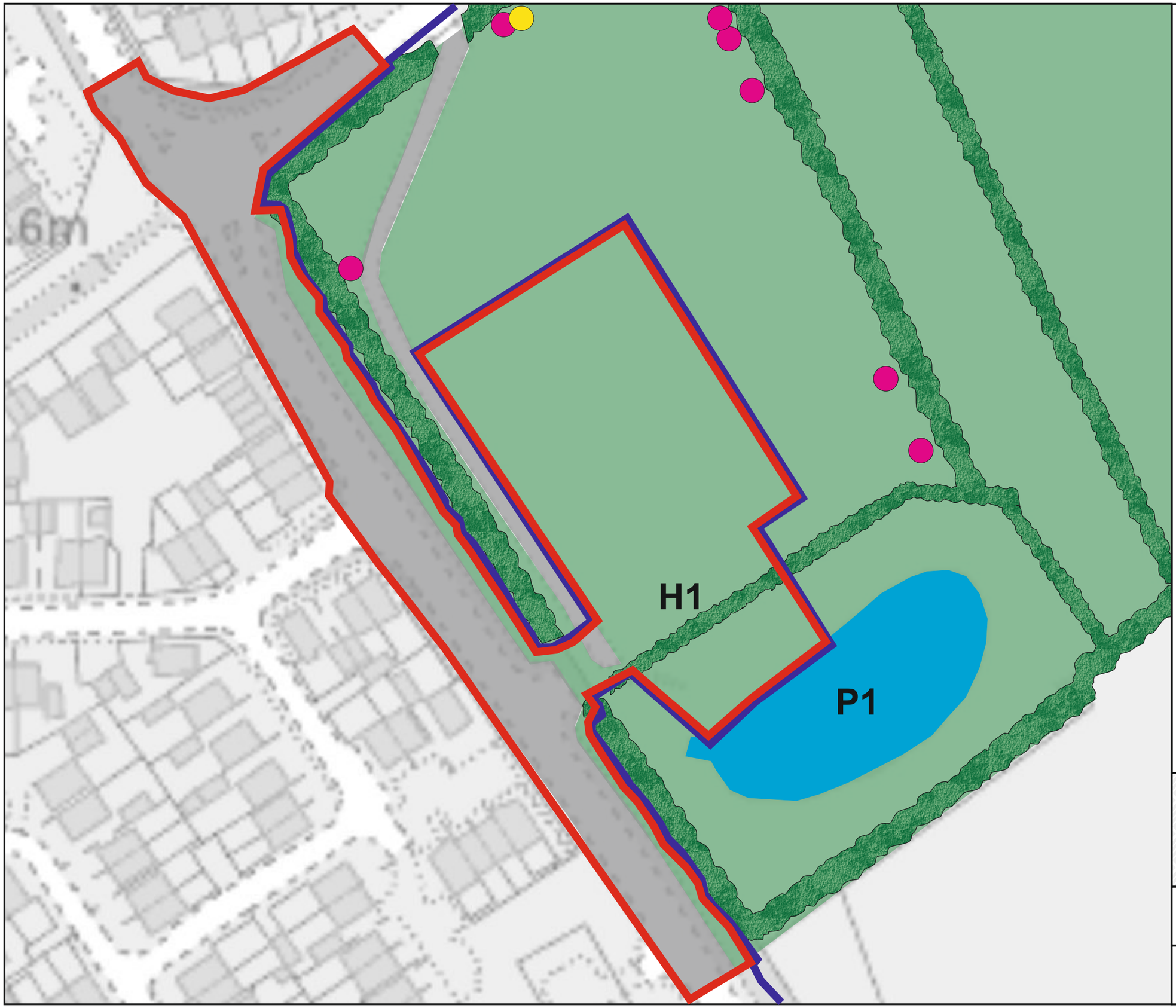
PLAN ECO3

Protected Species



KEY:

- SITE BOUNDARY
- FUTURE DEVELOPMENT AREA
- SEMI IMPROVED GRASSLAND
- HARDSTANDING
- HEDGEROW
- POND
- GRASS SNAKE LOCATION
- SLOW WORM LOCATION

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10186: SPITFIRE ROAD, CALNE

PLAN ECO3:
PROTECTED SPECIES

Rev: B

Jan 2023

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APPENDICES

APPENDIX 1

Proposed Site Plan

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Do Not scale off this drawing, use only figured dimensions and report any discrepancies or omissions to the Architect immediately.

rev.	date	description
A	DEC. 22	NURSERY PARKING AREA ADJUSTED FOR TURNING
B	JAN. 23	UNIT 2 - ADDITIONAL BOLLARDS HAVE BEEN ADDED. LANDSCAPE LAYOUT HAS BEEN ADJUSTED. PROPOSED ACCESS ROAD HAS BEEN REVISED.
C	JAN. 23	RED AND BLUE LINE HAVE BEEN REVISED.

Abberd House Farm

Future Development Area

Future Development Area

Abberd Lane

Sandpit Road

Abberd Lane

Hurricane Drive

Existing track

Existing landscaping

Existing footpath

Spitfire Road

Existing access

Potential Future Access Road

New Access Road

Pond

Existing Attenuation Pond

Sw drainage connections See Engineers drawings

Play Area

Play Area

Play Area

Plant Area

Loading Area

Deliveries

Unit 1
5,500sq ft
(511.0sqm)
FFL = 75.90

Unit 2
3,504sq ft
(326.0sqm)
FFL = 75.90

Entrance

Entrance

Cycles

Cycle

Car parking
31 spaces

Turning Area

Bin store

MIC

- Proposed site
- Block paving
- Permeable paving (carpark spaces)
- Hoggin
- Tarmacadam
- Astroturf (Nursery external play area)
- Proposed soft landscaping
- Proposed shrub planting
- Proposed tree

FFL = 75.90 Finished Floor Levels
To be read in conjunction with Engineers drawings

Note: Please refer to MHP Design Ltd Chartered Landscape Architects drawing for further details.

North

0 5 10 25m

Robert Hitchins
The Complete Development Solution

Roberts Limbrick

project
Spitfire Road Local Centre
Calne, Wiltshire
-
-

client
Robert Hitchins Ltd

drawing
Proposed Site Plan
-
-
-

status
Planning

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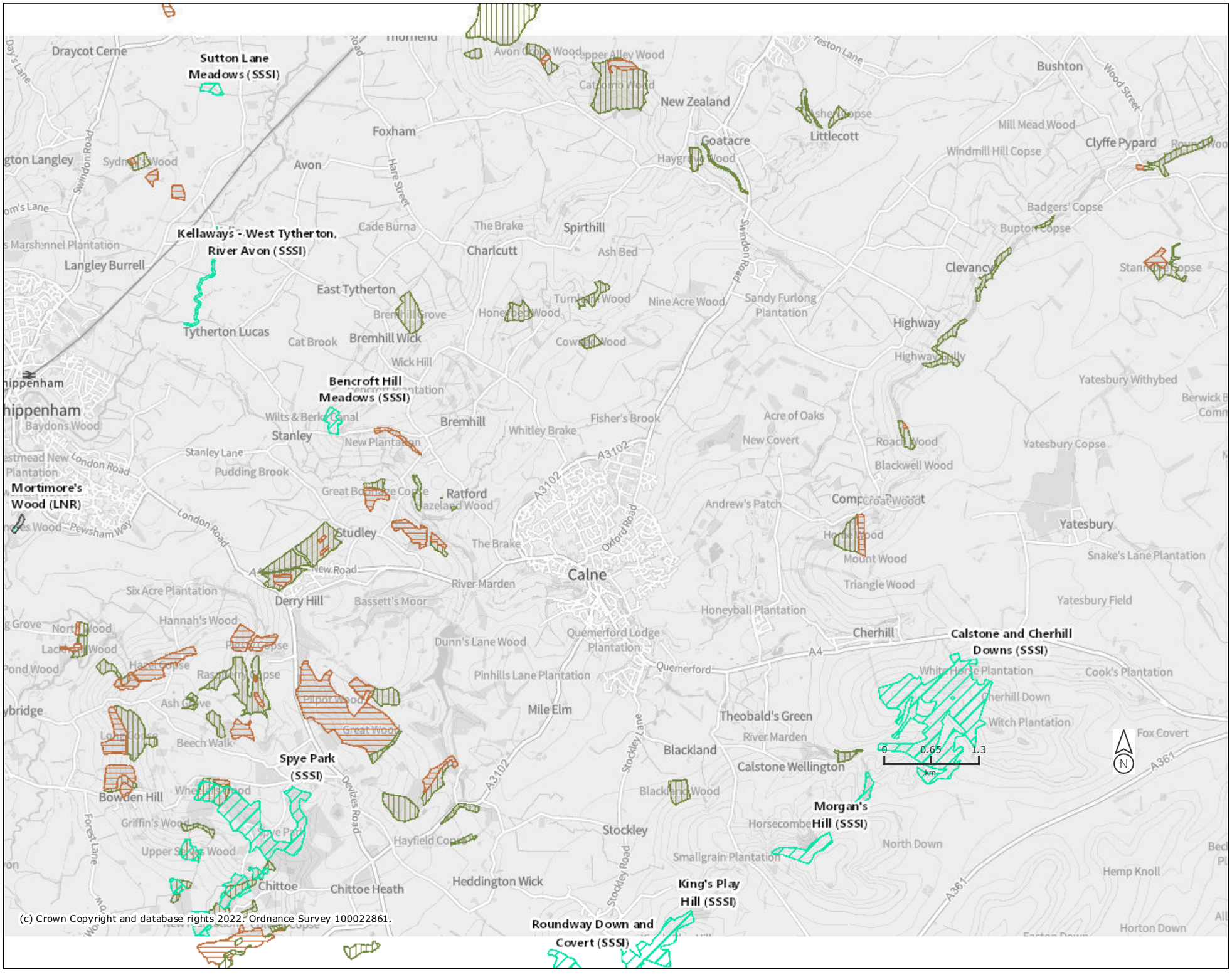
scale 1/250 @ A0
date 24/10/22
author -
project 9311
drg no. PL04
rev. C

APPENDIX 2

Information obtained from MAGIC

Magic Map



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Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Projection = OSGB36
xmin = 391300
ymin = 166000
xmax = 409000
ymax = 178400

Map produced by MAGIC on 25 July, 2022.

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APPENDIX 3

Suitable Examples of Bat Boxes

Bat Boxes

Schwegler bat boxes are made from 'woodcrete' and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using 'tree-friendly' aluminum nails.



1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width: 27cm
Height: 43cm
Weight: 8.3kg



2F Bat Box

A standard bat box, attractive to the smaller British bat species. Simple design with a narrow entrance slit on the front.

Woodcrete construction, 16cm diameter, height 33cm.

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APPENDIX 4

Suitable Examples of Bird Boxes

Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box.

They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting.

Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.



1B Schwegler Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

Available in four colours and three entrance hole sizes. 26mm for small tits, 32mm standard size and oval, for redstarts.

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.

Brood chamber dimensions:
Height: 16cm, Width: 10.5cm, Depth: 15cm

External dimensions:
Height: 24.5cm, Width: 43cm, Depth: 20cm



Images and text adapted from manufacteres websites.

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