PURE ECOLOGY

The Elms

Sherston
Wiltshire
SN16 0PG

Ecological Assessment Report



September 2023

PURE ECOLOGY

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1 Introduction

1.1 Site Description

1.1.1 The client is preparing a planning submission for development of land at The Elms, Sandpits Lane, Sherston, Wiltshire, SN16 0PG (the application site). The application site is located within the centre of the village and is centred on National Grid Reference ST 85357 86148.

1.1.2 The application site is 0.3ha and is surrounded by neighbouring residential properties, with Sandpits Lane along the eastern boundary and Green Lane along the southern boundary. It encompasses the existing house, that is positioned centrally within a large garden, and a detached double garage that serves the house and is within an older outbuilding on the east side of the application site (adjacent to Sandpits Lane) which is partially in the ownership of The Elms. The application site has pedestrian access from Green Lane to the front, and vehicular access to the rear from Sandpits Lane. The Church of the Holy Cross located within the village is to the south. The site layout is shown on the Location Plan in **Figure 1**.

Figure 1. Location Plan

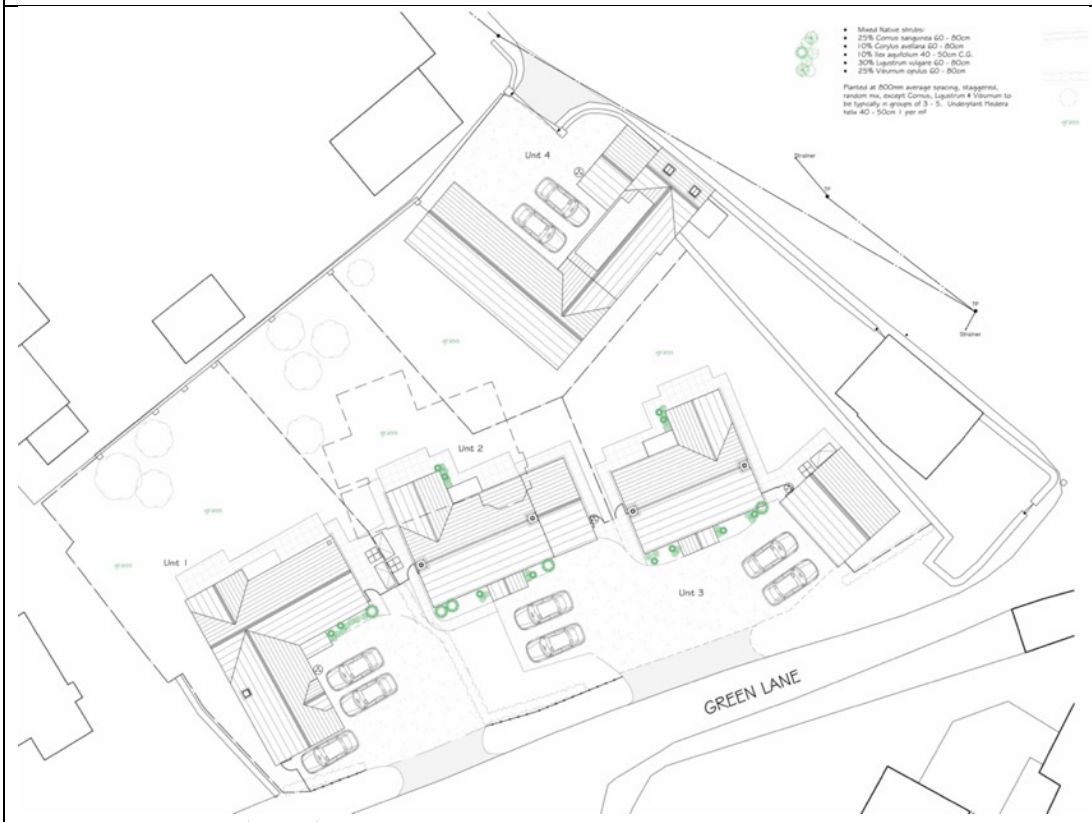


Taken from LPC (Trull) drawing LPC 5294 EX 01

1.2 Proposed Scheme

1.2.1 The proposed application at The Elms is an infill development. The application seeks to demolish the now vacant house and erect four detached houses. One of the new dwellings will utilise the existing access from Sandpits Lane and retains the existing outbuilding within that street scene as an integral part of the new property. The remaining three houses will front onto Green Lane. The proposed site layout with associated gardens and parking is shown on **Figure 2**.

Figure 2. Site Plan - Proposed



Taken from LPC (Trull) drawing LPC 5294 PL 01

1.3 Scope, Aims and Objectives

1.3.1 The client is seeking planning permission from Wiltshire Council for a proposed residential housing scheme and ancillary works, as described in Section 1.2. Pure Ecology was commissioned to undertake ecological surveys and appraisal of the proposed development site, and to provide a report to fulfil the requirements of nature conservation legislation and planning guidance.

1.3.2 As part of the planning process an ecological assessment of the development site and proposed development has been undertaken. This report contains ecological baseline information, and an appraisal of predicted, potential impacts on protected / notable sites, habitats and species. Any potential adverse impacts are addressed with proposals for mitigation or compensation, while opportunities for ecological enhancement have also been identified.

1.3.3 This report sets out the findings of the latest survey, an ecological impact assessment for the new scheme layout and provides recommendations for actions to ensure the proposed development complies with nature conservation legislation and biodiversity policy. Biodiversity enhancement proposals are in accordance with Wiltshire Council's Core Strategy (Adopted January 2015) that requires development to seek opportunities to enhance biodiversity, although the policy does not currently require measurable net gain or use of DEFRA's Biodiversity Metric (version 4.0).

1.3.4 Section 40 of the Natural Environment and Rural Communities Act 2006 (NERC Act) requires all public bodies to have regard to biodiversity conservation when carrying out their functions. Under the NERC Act the local planning authority should not determine a planning application if there are any surveys outstanding for European protected species. The National Planning Policy Framework (NPPF), July 2021, requires that the planning system should conserve and enhance the natural environment (Section 15) by, inter alia, 'protecting and enhancing sites of biodiversity value' and 'minimising impacts and providing net gains for biodiversity' (para 174) and 'protection and recovery of priority species' (para 179). A key requirement of the study is to provide further information to the local authority to inform the Appropriate Assessment Wiltshire Council have undertaken under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended).

2 Methodology

2.1 Desk Study

2.1.1 The Wiltshire and Swindon Biological Records Centre (WSBRC) was contacted in March 2023 with a request for any records of designated sites and rare/protected species located within a 1km radius of the centre point of the study area. This zone is considered appropriate given the location and setting of the development site, and allows notable and relevant designated sites, habitats and species to be highlighted and taken into consideration through the ecological appraisal process.

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

2.1.3 The DEFRA Multi-Agency Geographical Information for the Countryside (MAGiC) website was reviewed for European and nationally designated sites (including bat sites) and granted bat / great crested newt European Protected Species (EPS) licences within 5km of the development site. The MAGiC website was consulted in March 2023 for the current application.

2.1.4 The *Bat Special Areas of Conservation (SAC) Planning Guidance for Wiltshire* Issue 3.0 (10 September 2015), jointly published by Natural England (NE) and Wiltshire Council was consulted for information on 'Bat Consultation Zones' relating to sensitive areas associated with the Bath and Bradford-on-Avon Bats SAC, Chilmark Quarries SAC and Mottisfont Bats SAC. The Bat Consultation Zones help identify areas within the county where planning and development proposals could potentially trigger impacts on the SACs.

2.1.5 Results of the desk-based study are integrated into the relevant baseline sections in **Section 4**.

2.2 Habitat Appraisal

2.2.1 An extended Phase 1 ecological survey was undertaken on 27th February 2023 based upon the Phase 1 habitat survey methodology (JNCC, 2010) with industry standard habitat-type nomenclature used. A plan showing habitats and features of the site is provided in **Appendix 1**. The field survey included a habitat appraisal for protected species and search for any obvious signs of use of the Site by protected species. The weather was dry and overcast, 8°C with light breeze.

2.2.2 A review of the habitats on site was undertaken by consultant ecologists Mr. Anton Kattan MCIEEM and Dr. Stephen Dangerfield MCIEEM during a site visit on the 30th August 2023 (prior to the dusk bat activity survey, **Section 2.4**).

2.2.3 An appraisal to determine the presence of, or the potential for the application site to support protected and rare/scarce animals, was undertaken, which included surveying for the following:

- Potential/actual badger (*Meles meles*) setts, as well as latrines, tracks and other signs (foraging holes, hairs, etc);
- Potential reptile habitat and terrestrial habitat for amphibians, particularly great crested newt (*Triturus cristatus*);
- Waterbodies that have the potential to support great crested newt or water vole (*Arvicola amphibius*);
- Potential habitat to support or signs of dormouse (*Muscardinus avellanarius*); and
- Potential for breeding birds to use the site (including buildings).

2.2.4 The aim of an extended Phase 1 ecological survey is to identify the habitat types present and their relevance to nature conservation, based on species assemblage and structural diversity. It is also to identify the actual or likelihood of protected species inhabiting or frequenting the study area based on field signs or habitat quality/structure etc. The identification of protected, sensitive, threatened or scarce habitat or species within the development site or potentially affected by the proposed development could trigger the need for, and subsequent recommendation, for further Phase 2 surveys at an appropriate time of year.

2.2.5 For this proposed scheme, further targeted bat roost surveys were undertaken (see **Sections 2.3** and **2.4**).

2.3 Building Inspection for bats

2.3.1 A bat roost inspection and protected species survey of the existing house and detached garage was undertaken. The survey was undertaken by a licensed bat surveyor in accordance with Bat Conservation Trust guidelines (Collins, J (ed.), 2016).

2.3.2 The survey included an external and internal (enclosed attic space) inspection of the buildings looking for signs of, or the potential for the buildings to support, roosting bats. A ladder, high-powered torch, endoscope and binoculars were all available and were used where necessary to examine spaces, crevices and other small spaces suitable for roosting bats to occupy.

2.3.3 Evidence of bat presence/occupation includes:

- Droppings.
- Urine staining.
- Feeding remains (such as moth wings).
- Smudge marks and scratches around potential bat roost holes.
- Live roosting bats, bat skeletal remains or dead bats.

2.3.4 Conditions indicating an absence of bats can include the presence of spider webs, bird nesting material, wasp nests (especially blocking potential entrances), live sheltering/hibernating butterflies/moths and other insects in crevice features.

2.3.5 The suitability of the buildings to support roosting bats was assessed according to the following categories:

1. Negligible potential/not a roost: no suitable features
2. Low potential: one or more suitable features that could be used by individual, or very low numbers of bats opportunistically.
3. Moderate potential: one or more suitable features that could be regularly used by bats, but sub-optimal conditions may limit the potential for breeding or hibernating bats.
4. High potential: one or more roost features that are suitable for use by a colony of bats on a regular basis and may support a maternity or hibernation site.
5. Confirmed roost: evidence of current/recent bat occupation.

2.4 Phase 2 bat surveys

2.4.1 The building inspection undertaken during the Phase 1 habitat appraisal identified a number of external gaps on the house and garage that were present under lifted or missing clay roof/ridge tiles and in one soffit box. These gaps could not be closely inspected, and therefore given the residential nature of the site these buildings are classed as having 'moderate' potential (Category 3) for supporting bats.

2.4.2 Further bat surveys were deemed necessary to determine the presence of bats and provide an appropriate level of baseline information for a roost characterisation assessment to determine the type of roosts that are present in the house and garage. The outcome was that three dusk surveys were undertaken to evaluate the bat roost resource within the buildings. This complies with survey requirements for professional standards to determine if bats are present and assess the type of roosts the site supports – i.e. 'roost characterisation' (Collins, 2016).

2.4.3 Four surveyors and two IR cameras positioned around the property provided visual coverage of potential bat access points in the house and garage

buildings. Seven features with potential bat access gaps were identified in the roof of the house and coverage of all building elevations was required. The garage has potential bat access gaps on the northeast aspect of the roof due to raise ridge tiles and missing tiles.

2.4.4 The surveyor and camera positions are shown on **Figure 3** and details of survey timings and weather conditions are provided in **Table 1**.

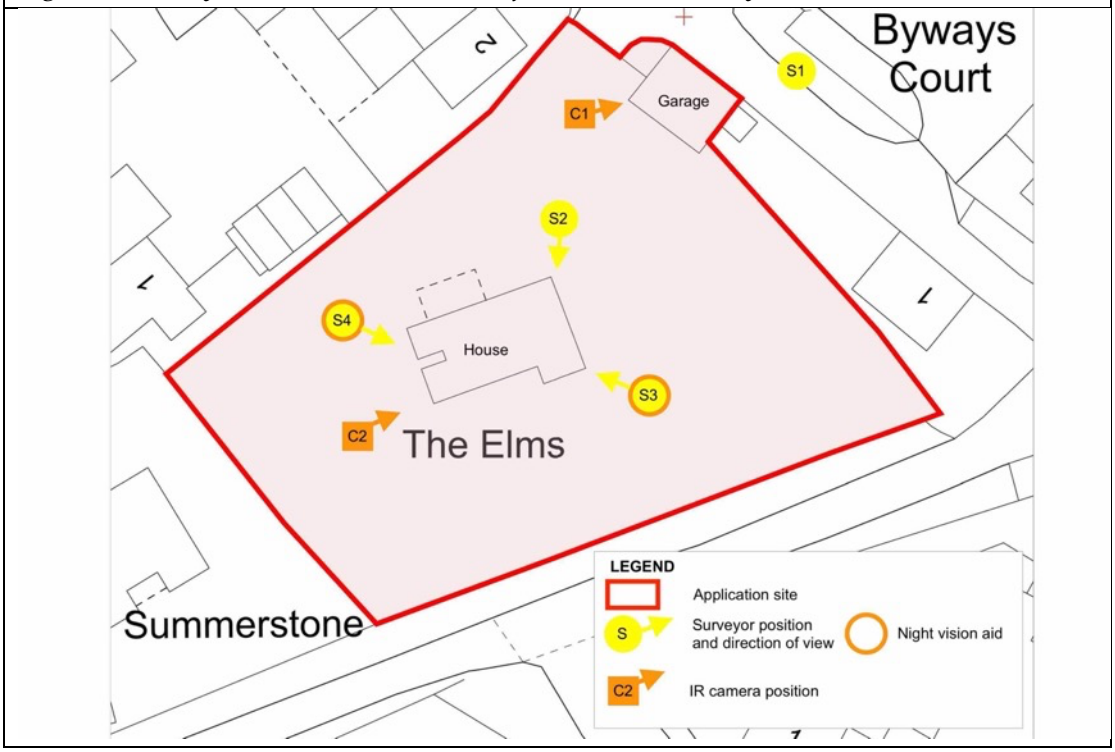
- All surveyors were equipped with recordable full-spectrum bat detectors (Anabat Express and Anabat Scout by Titley Electronics and EMTouch Pro by Wildlife Acoustics). Two surveyors were also equipped with night vision aid, using a Canon XA11 or Nightfox Whisker night vision binoculars.
- The two Canon XA11/XA40/XA65 IR camcorders with IR lamps were placed with a full-spectrum bat detector to provided remote, fixed position continuous recordings and time-stamped sound files of bat calls that were synchonised with the camera footage. The Canon camera recordings were analysed post-survey by reviewing the footage in real-time.

2.4.5 The survey protocol follows BCT guidelines with consideration given to the Interim Guidance Note 'Use of night vision aids for bat emergence surveys and further comment on dawn surveys' (2022).

Table 1. Timings and Weather Conditions for Bat Activity Surveys at The Elms

Date (2023)	**Survey Period (hrs)**	**Sunset (hrs)**	**Weather***
1 June	21:05-22:45	21:13	100% cloud, 13°C, Wind BF 2, Dry
18 July	21:05-22:45	21:17	90% cloud, 16°C, Wind BF 2, Dry
30 Aug	19:45-21:30	19:58	40% cloud, 18°C, Wind BF 1, Dry
*BF – Beaufort Scale			

Figure 3. Surveyor and Camera Positions for Dusk Bat Surveys



2.5 Personnel

2.5.1 The ecological work was led or undertaken by Anton Kattan and Stephen Dangerfield, who have a combined 50 years' professional experience, are both full members of the Chartered Institute of Ecology and Environmental Management (CIEEM), and hold Natural England protected species survey licences for bats, dormice (*Muscardinus avellanarius*) and great crested newt (*Triturus cristatus*).

2.5.2 The Phase 2 bat surveys were undertaken by a team of experienced surveyors, all of whom hold Natural England bat survey licences:

- Mr. Anton Kattan – 23 years' experience Level 2 Natural England licence CL18 2015-12201-CLS-CLS
- Dr. Stephen Dangerfield – 27 years' experience Level 1 Natural England licence CL17 2015-11600-CLS-CLS
- Mr. Rob Spencer – 15 years' experience, Level 2 Natural England licence CL18 2015-14778-CLS-CLS
- Mr. Phil Vincent – 22 year's experience Level 2 Natural England licence CL18 2020-49360-CLS-CLS.

2.6 Ecological Appraisal

Appraisal process

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

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

Defining important ecological receptors and value

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

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

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

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

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

Characterising ecological effects

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

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

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

Defining significance of ecological effects

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

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

3 Planning Context

3.1 National

3.1.1 The National Planning Policy Framework (NPPF), July 2021, requires that the planning system should conserve and enhance the natural environment (Section 15) by, *inter alia*, 'protecting and enhancing sites of biodiversity value' and 'minimising impacts and providing net gains for biodiversity' (para 174).

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

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

a. If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b. Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any border impacts on the national network of Sites of Special Scientific Interest;

c. Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland or ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d. Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.).

3.2 Wiltshire

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

Core Policy 50: Biodiversity and geodiversity

Protection

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

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

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

Biodiversity enhancement

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

Local sites

3.2.6 Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or

disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

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

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

4 Results

4.1 Designated Sites

Statutory Designated Sites

4.1.1 There are no statutory designations covering the application site or within 5km of the study area, and the development site does not fall within an SSSI Impact Risk Zone.

4.1.2 The development site is not within a Bat Special Area of Conservation (SAC) Consultation Zone.

Non-statutory Designated Sites

4.1.3 There are no non-statutory designations covering the development site.

4.1.4 **Table 2** summarises the details relating to non-statutory Local Wildlife Sites (LWS) located within 1km of the study area.

Table 2: Non-statutory Local Wildlife Site (LWS) within 1km of 'The Elms, Sherston'

Name	Description	Proximity to site (approx.)
Manor Farm Meadows, Sherston	Pasture with unimproved grassland and scrub	330m SW
Carrier's Farm Meadows, Sherston	Pasture with unimproved calcareous grassland	930m SW
New House Farm Meadows	Species-rich limestone and neutral grassland and oak woodland	660m S
Lower Easton Town Farm Meadows	Valley with unimproved grassland	380m SE
Lower Farm Meadows, Sherston	Pasture with calcareous grassland and quarry workings	710m SE
Bybrook Meadow	Undulating unimproved neutral grassland	550m SE
Bristol Avon River	Main river	660m S & 770m E

4.2 Building Descriptions

4.2.1 Photographs of the buildings (exteriors and interiors) are presented in **Appendix 2**.

Building 1 (House)

Exterior

4.2.2 The existing dwelling is a two-storey house, which until recently was occupied and has been securely maintained. The house has two small single-storey

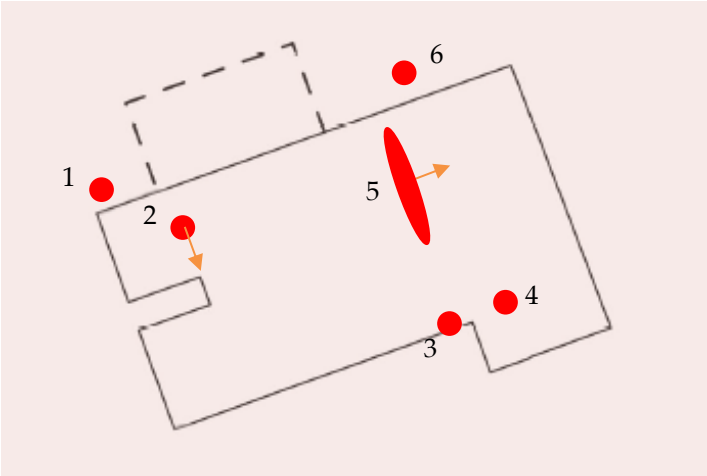
extensions on the west-facing elevation and a lean-to carport on the north-facing elevation. The walls of the house are constructed with sealed rendered walls. All doors and windows, which are a combination of wood and uPVC, and intact/sealed. The house has a pitched roof that is clad in clay pan roof tiles and clay ridge tiles, which are generally intact, close-fitting and sealed with either mortar along leading edges or lead flashing along roof troughs. There are two brick chimneys that are securely sealed with lead flashing. There are wooden soffit boxes running along the eaves, and these are generally intact, close-fitting and sealed. There is external security lighting.

4.2.3 The two small extensions comprise a kitchen and garden room, which are constructed with brick and uPVC walls/windows, with sloping roofs constructed from uPVC plastic and glazing. Roofs are connected to the main house with sealed lead flashing. On the northern side of the house is an open car port constructed with concrete uprights and a sloping roof of translucent plastic sheets.

4.2.4 There are some gaps/recesses potentially available for crevice-dwelling (Vesper) bats to exploit associated with the exterior of the house, as follows and shown in **Figure 4**:

1. Rot hole in end of soffit box and slipped roof tile on north-western corner of house;
2. Gap under single ridge tile where mortar fallen away on south-facing roof slope;
3. Two small gaps under end ridge tile at apex of south-facing gable;
4. Gap under end roof tile on south-facing gable;
5. Gaps under ridge tiles where mortar fallen away on west-facing roof slope; and
6. Gaps under vertical ridge tiles where mortar fallen away on north-eastern corner of house.

Figure 4. Building Layout and Diagram of Bat Roost Features in the House at The Elms



Interior

4.2.5 The ground and first floor rooms of the house are sealed living space providing no opportunities for wildlife to exploit.

4.2.6 The house has a single, small attic space that is approximately 1m high and 2m wide. The roof structure comprises modern, tight-fitting timber rafters with a single, narrow ridge board. The roof is lined with tight-fitting bituminous roofing felt and chicken wire fixed above the roof timbers. The attic is blocked with water tanks.

4.2.7 There are no gaps/recesses or other hidden voids potentially available for crevice-dwelling (Vesper) bats to exploit associated with the observable attic space. There are no observable flyways into the attic, which is completely sealed with bituminous and chicken wire preventing access for bats. Furthermore, the attic is completely covered with or spanned by established spider webbing showing no animal has flown through or used these spaces.

Building 2 (Garage)

Exterior

4.2.8 The existing garage is a single-storey building, which has been securely maintained. The garage comprises an original section constructed with stone walls, and a more modern extension along the south-western elevation constructed with rendered walls. There are two metal up-and-over garage doors and a single wooden pedestrian door, which are intact/sealed.

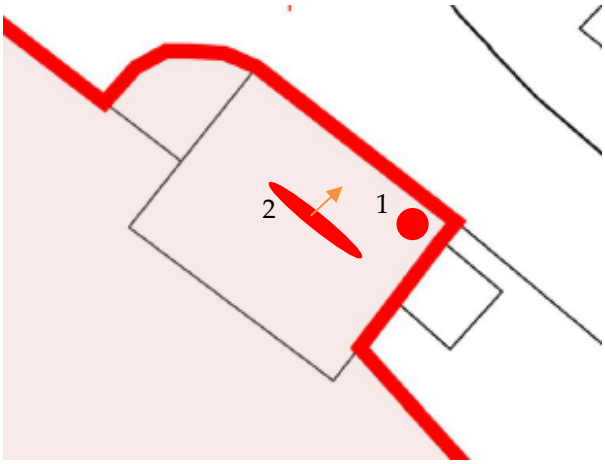
4.2.9 The garage has a pitched roof that is clad in clay pan roof tiles and clay ridge tiles, which are generally intact, close-fitting and sealed with mortar along

leading edges. There is a wooden soffit box running along the eaves of the south-western roof line, and this is intact, close-fitting and sealed.

4.2.10 There are some gaps potentially available for crevice-dwelling (Vesper) bats to exploit associated with the exterior of the garage, as follows and shown in **Figure 5**:

1. Three missing roof tiles on the northeast-facing roof slope; and
2. Gap under six raised roof tiles on the northeast-facing roof slope.

Figure 5. Building Layout and Diagram of Roost Features in the Garage at The Elms



Interior

4.2.11 The interior of the garage is well-sealed providing very little opportunity for wildlife to exploit.

4.2.12 The ground floor rooms comprises two garages and small store room that are constructed with sealed blockwork, stone or rendered walls. Ceilings comprise timber boards. There is electric lighting inside the garage.

4.2.13 There are enclosed roof spaces in the garage associated with the original stone building and the modern extension. The original attic space has rendered stone walls and the roof is lined with timber sarking with purlins and a single ridge board – there are no gaps. There is a small window and a larger window at floor level that divided the old roof space from the new.

4.2.14 The modern roof space walls are sealed blockwork and the roof structure comprises modern, tight-fitting timbers. The roof is lined with bituminous roofing felt tightly-fixed above the roof timbers.

4.2.15 There are no gaps/recesses or other hidden voids potentially available for crevice-dwelling (Vesper) bats to exploit associated with the attic spaces. There are no flyways into the attic spaces, which are completely sealed preventing

access for bats. Furthermore, the attics are completely covered with or spanned by established spider webbing showing no animal has flown through or used these spaces.

4.3 Habitats and Botany

Existing data

4.3.1 There are records of notable plant species recorded within 1km of the development site, with those found in Sherston including garden angelica (*Angelica archangelica*), stinking chamomile (*Anthemis cotula*), cornflower (*Centaurea cyanus*), coralroot bittercress (*Cardamine bulbifera*), fiddle dock (*Rumex pulcher*), strawberry clover (*Trifolium fragiferum*), smooth brome (*Bromus racemosus*) and yellow-juiced poppy (*Papaver dublum* subsp. *lecoqii*).

4.3.2 Other plants are associated with the River Avon and associated river meadows.

Garden

4.3.3 The habitat plan in **Appendix 1** illustrates the garden layout and vegetation described below.

4.3.4 The majority of the garden, which wraps around the house, comprises formal lawn (amenity grassland) that is maintained as a low sward through regular mowing. The lawn supports common grasses and forb species. Grasses include rough meadow-grass (*Poa trivialis*), creeping bent (*Agrostis stolonifera*), red fescue (*Festuca rubra*) and cock's-foot (*Dactylus glomerata*).

4.3.5 Forbs include species typical of garden lawns including clover (*Trifolium* sp.), creeping buttercup (*Ranunculus repens*), daisy (*Bellis perennis*), dandelion (*Taraxacum officinale* agg.), selfheal (*Prunella vulgaris*), dissected-leaved crane's-bill (*Geranium dissectum*) and creeping cinquefoil (*Potentilla reptans*). Some areas of lawn are also being dominated by moss. Other garden varieties such as primrose (*Primula* sp.) and daffodil (*Narcissus* sp.) also occur.

4.3.6 In shadier areas, including along garden edges, at the base of hedges and under trees, some more shade-tolerant species occur including nettle (*Urtica dioica*), cuckoo pint (*Arum maculatum*), ground ivy (*Glechoma hederacea*), cleavers (*Galium aperine*), ivy (*Hedera helix*), cow parsley (*Anthriscus sylvestris*) and red dead nettle (*Lamium purpureum*).

4.3.7 In the north-western corner is a small (4m x 10m) area that appears to be a rose bed that has become slightly overgrown with longer grass, bramble and ivy etc.

4.3.8 Within the garden lawn, around the house and lining a garden path are trees, some of which have been recently felled, and shrubs. Most are ornamental and/or coniferous, dominated by cypress (*Cupressus* sp.), as well as apple (*Malus pumila* agg.), cherry/plum (*Prunus* sp.), holly (*Ilex* sp.), rhododendron (*Rhododendron ponticum*), shrub honeysuckle (*Lonicera nitida*), rose (*Rosa* sp.), self-set elder (*Sambucus nigra*) and sycamore (*Acer pseudoplatanus*), and other ornamental varieties. Bramble (*Rubus fruticosus* agg) has also started to encroach in places.

4.3.9 Vehicle access/parking and garden paths are hard-standing and concrete.

Boundary habitats

4.3.10 The garden is bounded as follows:

- ***Eastern boundary***. Dry stone wall connecting to the garage on the site boundary

- ***Southern boundary***. Close-boarded garden fencing at the eastern end and a Leyland cypress (*Cupressus leylandii*) hedge. A large mature ash (*Fraxinus excelsior*) high pollarded tree is located along this boundary between the fence and the hedge. Fronting the garden fence on the roadside of Green Lane are three mature ash coppice (old hedge lay) and a few cypress trees.

- ***Western and northern boundaries***. A combination of close-boarded and post & wire fencing fronted by trees and shrubs, which are mainly ornamental varieties. These include cherry/plum, cypress, birch (*Betula* sp.), buddleia (*Buddleja davidii*), mahonia (*Mahonia* sp.) and elder.

Notable habitats or plants

4.3.11 The habitats within the garden are of low ecological value, being mainly manicured lawn with mainly ornamental trees and shrubs. All plants recorded on-site are common/widespread species (no national or county notable species recorded), and no notifiable invasive plant species were recorded.

4.3.12 Habitats and plant species are not a significant constraint for the proposed development.

4.4 Bats

Existing data

4.4.1 There are a few records of common bats within 1km of the development site the local landscape, including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*) and noctule (*Nyctalus noctula*). No bat roosts were identified in the records.

Building Appraisal

4.4.2 The interior of the house, including the attic space, is unsuitable for roosting bats as there are no internal gaps or hidden voids that bats could potentially exploit. There is no access into the building, which is sealed with intact doors and windows, or into the attic space, which is securely sealed with bituminous roof liner and chicken wire.

4.4.3 The interior of the garage, including roof spaces, is unsuitable for roosting bats as there are no internal gaps or hidden voids that bats could potentially exploit. There is no access into the building, which is sealed with intact doors and windows, or into the roof spaces, which are securely sealed with timber sarking or bituminous roof liner.

4.4.4 No evidence of bat roosting or other bat activity (no live bats, no dead bats, no accumulated or scattered droppings, no urine splashes and no insect feeding remains) was found within either the house or garage interiors. Furthermore, all attic/roof spaces supported established spider webbing showing that bats have not entered these spaces.

4.4.5 The exterior roofs of both the house and the garage support gaps (see **Section 4.2**) due to missing / raised / slipped roof tiles or missing mortar or gaps in a soffit box. These gaps could not be closely inspected. These gaps could support summer roosting crevice-dwelling bats.

4.4.6 Given the presence of external gaps, both buildings were classed as having 'moderate' potential (Category 3) for supporting roosting bats.

4.4.7 The trees within the property curtilage were visually inspected and the vast majority were found not to support any potential bat roosting features (e.g. no holes, cracks, splits, lifting bark etc.), and are therefore classed as Category 1 (not a roost/negligible roost potential).

Trees

4.4.8 The mature, high pollard ash on the southern boundary supported potential bat roosting features including rot holes and crevices. This tree is classed as having 'moderate' potential (Category 3) for supporting summer roosting bats.

Confirmed Bat Roosts at The Elms

4.4.9 The bat activity surveys (undertaken between June and August 2023) identified two common pipistrelle bat roosts in the house. Common pipistrelle bats emerged from under ridge tiles on the roof on the 1st June and 18th July 2023, but were absent during the dusk survey on the 30th August. The roost locations are shown on **Figure 6** and the dusk bat survey results are summarised in **Table 3.**

4.4.10 No bats were recorded roosting in the garage building. The results of the dusk bat activity surveys undertaken between June and August 2023 confirm likely absence of roosting bats in the garage.

Table 3. Confirmed Common Pipistrelle Roosts

Date (2023)	**Ref Fig 6**	**Roost Feature**	**Roost Count**	**Emergence Time**
1 June	1	Ridge tile (north-south ridge)	1	21:49hrs
18 July	2	Ridge tile (north-south ridge)	1	22:10 hrs

Figure 6. Common pipistrelle bat roost locations



Foraging and commuting bats

4.4.11 The residential garden within the development site, which itself is surrounded by residential land, is assessed as having low suitability for foraging/commuting bats, and the habitats contained within the garden are not considered to be critical for sustaining local bat populations.

4.4.12 The bat activity recorded during the dusk surveys between June and August 2023 is summarised in **Table 4**. There was no sustaining bat activity within the

site and the low levels of activity recorded are consistent with predicted levels expected at a site with low quality habitats. Most records were a result of intermittent, low levels of foraging behaviour by common pipistrelle bats and frequent passes by serotine and noctule bats.

Table 4. Bat Activity Survey Findings

Date	**Bat Species Assemblage**	**Summary***
01/06/23	Common pipistrelle	A very low number of bat passes at each surveyor location that are most likely to be associated with a few individual bats commuting through, or past the site.
	Soprano pipistrelle	Four passes recorded at surveyor locations S1 and S3 at 22:10hrs and 22:37hours.
	Serotine	Two short durations of activity recorded at surveyor locations S1 and S4 around 21:53hrs and 22:04hrs. One bat was observed flying over the site at 21:53hrs (at S4), but other activity may have been in the wider/ surrounding landscape.
18/07/23	Common pipistrelle	Occasional, low levels of foraging in the garden by individual bats recorded at surveyor locations S3 and S4, in addition to intermittent commuting at all surveyor positions. Foraging behaviour was typically a couple of minutes in duration and there was no sustained feeding at the site. Several commuting bats recorded on Sandpits Lane(S1) between 21:24-22:12hrs, possibly from neighbouring properties.
	Soprano pipistrelle	One pass at 22:13hrs at surveyor location S2.
	Noctule	Eight passes at S2 between 21:51-22:40hrs, with one record at surveyor location S3 at 22:15hrs. The majority of the activity appears to be from off-site activity as bats pass the site.
	Serotine	Recorded at surveyor locations S1 and S2 at 21:34hrs and 22:04hrs, possibly from a bat passing along the eastern side of the site.
30/08/203	Common pipistrelle	Similar patterns to the bat activity recorded in July, with occasional, low levels of foraging in the garden by individual bats. Common pipistrelle activity was recorded at all four surveyor locations with short bouts of foraging S2 and S4.
	Soprano pipistrelle	Up to two bats foraging for approximately five minutes in the garden, recorded at surveyor location S4.
	Serotine	One record from surveyor location S1 at 22:04hrs.
*Refer to **Figure 3** for surveyor locations		

4.4.13 Foraging and commuting bats are not a significant constraint for the proposed development.

4.5 Other Mammals

4.5.1 There are no records of badger within 1km of the site, and no badger setts were recorded within the development site and no evidence of badger activity (e.g. latrine/dung pit, snuffle hole, wide paths) was found during the survey. Badger is not a constraint for the proposed development.

4.5.2 There are no records of dormouse within 1km of the site, and the habitats within the garden are not suitable for supporting dormouse.

4.5.3 There is no habitat suitable for support any other protected mammal.

4.5.4 There are records of hedgehog (*Erinaceus europaeus*) within Sherston, and the garden does provide opportunities for foraging/hibernating hedgehog especially associated with the garden margins.

4.6 Breeding Birds

4.6.1 There are records of notable birds within 1km of the site, but these relate mainly to the surrounding farmland and the River Avon.

4.6.2 Birds commonly associated with urban areas and gardens include summer visitors swift (*Apus apus*) and house martin (*Delichon urbicum*) and resident species such as house sparrow (*Passer domesticus*), greenfinch (*Chloris chloris*), starling (*Sturnus vulgaris*) and mistle thrush (*Turdus viscivorus*).

4.6.3 Birds observed during the Phase 1 survey included low numbers of common birds such as blackbird (*Turdus merula*), robin (*Erithacus rubecula*) and wood pigeon (*Columba palumbus*) associated with the boundary habitat.

4.6.4 The development site is totally unsuitable for ground nesting species, such as skylark, being very small and enclosed formal lawn.

4.6.5 It is probable that low numbers of common nesting birds will use the boundary habitats and larger garden trees/shrubs, some of which has already been removed and some of which will need to be removed. All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act, 1981 as amended.

4.7 Reptiles

4.7.1 There is one record of slow worm (*Anguis fragilis*) associated with the Church of the Holy Cross, Sherston that is located directly south of application site, separated by Green Lane. The churchyard is enclosed by stone walls, which

will restrict the movement of slow worm out of the churchyard and the application site is not considered to be connected to the church grounds.

4.7.2 The habitats contained within the garden of The Elms and directly affected by the proposed development are generally unsuitable for supporting reptiles being buildings, hard-standing and close-mown lawn with dense ornamental boundary hedge/shrubs.

4.7.3 There are small areas of low potential habitat, for example the dry stone wall along the eastern boundary and the small patch of neglected rose bed in the northwest corner. However, these are very small and bounded by unsuitable habitat such as close-mown lawn or dense shrubbery. Therefore if slow worm were present they would only be in very low numbers.

4.7.4 Slow worm is not considered to be a significant constraint for the proposed development, and it is not considered that any further survey is required, but a precautionary working method associated with garden vegetation clearance is recommended to take consideration of preventing harm or injury to individual animals. All species of reptile are legally protected from killing or injury under the Wildlife and Countryside Act 1981. A working method statement setting out reasonable avoidance measures (RAMs) to ensure complete protection of slow worm should be provided as part of the construction programme.

4.8 Great Crested Newt and Other Amphibians

4.8.1 There are no records of great crested newt within 1km of the development site, but common toad (*Bufo bufo*) has been recorded in Sherston.

4.8.2 There are no ponds or other standing open water within the development site, and no ponds within 500m of the development site shown on OS maps.

4.8.3 The habitats contained within the garden of The Elms and directly affected by the proposed development are generally unsuitable for supporting great crested newt in its terrestrial phase being buildings, hard-standing and close-mown lawn with dense ornamental boundary hedge/shrubs, while the site is isolated within a residential area.

4.8.4 As such great crested newt is not considered to be present and is not a constraint for the development. No further survey is required.

4.8.5 If common amphibians, such as frog and toad, are found during site clearance they will be covered by the proposed working method statement for slow worm (see **Section 6.1**).

5 Assessment

5.1 Legislation

5.1.1 **Appendix 3** provides details of legislation relevant to this study. The protection afforded to key habitats and species by the legislation identified above has informed the scope of the ecological studies undertaken to determine baseline conditions and guided measures that will protect and benefit valued ecological resources associated with the site.

Legal Protection and Licensing for Bats

5.1.2 The key pieces of legislation protecting bats are the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and The Conservation of Habitats and Species Regulations 2017.

5.1.3 Bats are legally protected from harm and it is an offence to deliberately or intentionally kill or injure a bat. It is also prohibited to incidentally or deliberately capture, kill, disturb or take bats, or damage or destroy a breeding site or resting place - irrespective of whether it (the roost) is occupied.

5.1.4 Taken together, the Act and Regulations make it illegal to:

a) Deliberately capture or intentionally take a bat;
b) Deliberately or intentionally kill or injure a bat;
c) To be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
d) Damage or destroy a breeding site or resting place of a bat;
e) Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection;
f) Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection;
g) Deliberately disturb bats, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

5.1.5 A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

5.1.6 Although the law provides strict protection to bats, it also allows this protection to be set aside (derogated) under Regulation 53 of the Conservation

of Habitats and Species Regulations 2017 through the issuing of licences for the purpose of preserving public health, or public safety, or other imperative reasons of overriding public interest (IROPI) including those of a social or economic nature and beneficial consequences of primary importance for the environment. This is often referred to as a "Bat Mitigation Licence". Schemes with planning permission usually fulfil the requirements of IROPI. Natural England currently determine these licences in England and an application to Natural England can be made once the necessary planning and building consents have been obtained.

5.1.7 As discussed, where a lawful operation is required to be carried out, but which is likely to result in one of the above offences, a licence may be obtained from Natural England to allow the operation to proceed. However, in accordance with the requirements of the Conservation of Habitats and Species Regulations 2017 a licence can only be issued where the following requirements are satisfied:

a) that there is no satisfactory alternative; and
b) that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favorable conservation status in their natural range.

Legal Protection for Nesting Birds

5.1.8 It is an offence under the Wildlife and Countryside Act to intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built.

Legal Protection for Reptiles

5.1.9 All native reptiles are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). You must have regard for the conservation of Section 41 species as part of your planning decision.

5.1.10 All four native widespread reptile species (grass snake, slow worm, common lizard and adder) are legally protected under the Wildlife and Countryside Act 1981 from killing or injury.

5.2 Assessment of Potential Ecological Impacts

Introduction

5.2.1 In accordance with national and local biodiversity planning policy and CIEEM best practice ecological impact assessment guidelines, adverse ecological impacts have been significantly reduced by appropriately siting the proposed development within habitats of low ecological value and avoiding/integrating

habitats with more local value such as the mature high pollard ash tree and dry stone wall.

5.2.2 Habitats directly affected are of low ecological value, and the impact of this loss is not significant. The proposed development also includes appropriate habitat creation, in the form of new garden landscape planting and other wildlife features that will be available for wildlife to use.

Designated Sites

5.2.3 There are seven locally designated nature conservation sites located 330-930m south of the application site, but disconnected by other residential development.

5.2.4 The proposed small residential development will not alter local environmental/abiotic conditions associated with these designated sites. Therefore, the proposed development will have no effect on the existing baseline conditions, in terms of habitat structure/function and supported wildlife, associated with these locally designated sites.

5.2.5 The impact of the proposed development on the locally designated nature conservation site in the local landscape is *neutral*, and no additional mitigation is required. This is in accordance with Wiltshire Core Policy 50.

Habitats

5.2.6 Retained trees and shrubs could potentially be damaged during the construction phase through root compaction or physical damage. This is a potential *negative* impact, but will be managed and removed through clear delineation and good site working practices.

Bats

5.2.7 The house at The Elms supports two "day roosts" for solitary common pipistrelle bats. The common pipistrelle bats shelter in two external cavity features under ridge tiles on the roof that runs north-south across the eastern part of the building, as shown on **Figure 6**. Day roosts are defined by Natural England as "*a place where individual bats, or small groups of males,rest or shelter in the day but are rarely by night in summer*".

5.2.8 There is no evidence of bats roosting in the garage and the mature pollarded ash tree on the southern boundary (which has potential to support roosting bats) will be retained within the development. Demolition of the garage is not predicted to have an impact on bats, and protection of the ash tree will avoid loss of potential bat roost features.

5.2.9 The absence of a colony roost, such as a maternity or mating site, has been confirmed by the results of the nocturnal surveys between June and August, which have shown only small amounts of bat activity. These bat activity surveys also help establish that the common pipistrelle day roosts in the house are used only intermittently during summer.

5.2.10 The common pipistrelle bat is the most common bat species in the UK and are widely distributed throughout Britain (Richardson, 2000).

5.2.11 The significance of the common pipistrelle bat roosts recorded at The Elms have been classified in accordance with the site assessment recommended in the Bat Mitigation Guidelines (Mitchell-Jones, 2004), which provides guidance on proportional mitigation requirements based on the conservation significance of roosts. The Bat Mitigation Guidelines categorises day roosts of common bat species (such as common pipistrelle bats) as low conservation significance. The evidence of roost activity indicates The Elms is used by low numbers of bats, with the roost resource primarily associated with localised gaps and crevices in the roof that have developed due to the age of the property.

5.2.12 The house at The Elms is considered to be a low conservation significance roost site that is important within the local (site) context only.

5.2.13 Demolition of the house at The Elms will result in the loss of roosts/places of rest and shelter used by very low numbers of common pipistrelle bats. Without mitigation, bats could be accidentally killed or injured by building activities if they are not excluded from the property before construction starts. This would contravene legislation that protects these species (see **Section 5.1**).

5.2.14 The proposed scheme is predicted to have a low adverse impact as work will not affect a roost of high conservation status (i.e. not a breeding site). The planned work does not pose a threat to the favourable conservation status of the bat species concerned and will not affect the ability of these species to maintain its current range and distribution in the locality. The proposed scheme for The Elms is therefore not considered to have a significant impact at a population level.

5.2.15 The proposed development of the site will however destroy resting places (roosts) used by common pipistrelle bats and therefore a Natural England licence under the provision of the Conservation of Habitats and Species Regulations 2017 is required. Mitigation to protect roosting bats and to provide alternative roosting habitat for bats, in accordance with legislation and planning policy, is set-out in this report.

On the basis of the evidence gathered through this study it is recommended that a licence from Natural England is obtained under the provisions of The Conservation of Habitats and Species Regulations 2017 (as described in in **Section 5.1**) for The Elms because loss of the bat roost resource in the house would result in an offence under Regulation 43 of the legislation. This is often referred to as a 'bat mitigation licence'.

5.2.16 The bat roost resource at The Elms meets the conditions of Natural England's Bat Mitigation Class Licence (BMCL) (CL21) because the roosts are of low conservation significance and support low numbers of bats (of the species covered by the class licence). The BMCL provides a streamlined process for obtaining a bat mitigation licence and permits work that has a low impact on the common pipistrelle roosts, but which still needs to be licensed in order to meet legal requirements.

Hedgehog

5.2.17 Hedgehog could be present within the development site. They are a priority species due to declining populations. The development has the potential to damage or destroy hedgehog habitat and could injure animals if ground works are undertaken without appropriate safeguards. If this were to happen this is a *negative* impact. This adverse impact will be removed through implementing appropriate mitigation.

Breeding Birds

5.2.18 Low numbers of nesting birds are likely to be present within trees and larger shrubs within the development plot, some of which are scheduled for removal. If tree or larger shrubs are removed without appropriate safeguards then there is the potential to damage, destroy or disturb nesting birds. This is a potential *negative* impact and will be removed through implementing appropriate mitigation.

Reptiles

5.2.19 The appraisal has concluded the application site would not support a reptile population, but recognises there are slow worm populations in the local area, and if this species occurs within the development site only very low numbers of animals would be present (i.e. potential for individual animals to be found within marginal areas of habitat). If trees or larger shrubs at the site periphery are removed without appropriate safeguards then there is the potential to injure animals. This is a potential *negative* impact, but any adverse effects can be avoided by implementing precautionary mitigation to avoid harming individual animals and ensure complete protection of slow worm during site clearance work.

6 Mitigation

6.1 Protecting wildlife during the construction phase

6.1.1 The following recommendations provide guidance on measures required to protect the ecological receptors identified by this Ecological Impact Assessment. The recommendations can be conditioned by the local authority with reference to this report or can be adopted by the appointed contractor as part of their Construction Environmental Management Plan (CEMP).

Protecting retained trees and shrubs

6.1.2 Retained boundary hedgerow and trees/shrubs will be physically protected (including protecting the root zone) through avoidance with appropriately sized buffers or through an appropriate engineering solution (i.e. shallow digging, root bridging etc.). Key boundary areas for protecting trees are shown on the Ecological Mitigation, Enhancement and Protection Plan (EMEPP) in **Appendix 4.**

Protecting ground dwelling mammals during site clearance and construction

6.1.3 The development site clearance and construction phase will include building removal, vegetation removal and creation/installation of excavations, trenches, pits and/or pipes. Therefore, to ensure protection of animals that may traverse the application site during the construction phase the following actions will be implemented:

- Vegetation, debris piles or building removal will proceed with care to allow animals to disperse if they are present at the time of the work. If an animal is found they should be carefully moved in gloved hands or an ecologist should be contacted.
- Any excavations that need to be left overnight will be covered, appropriately profiled or fitted with a ramp to ensure that any animals that enter the hole can safely escape.
- Any open pipework with an outside diameter of greater than 100 mm must be covered at the end of each work day to prevent animals entering/becoming trapped.
- Any excavations or pipes left overnight should be inspected first thing the next morning, and if an animal is found an ecologist should be contacted.

Protecting nesting birds

6.1.4 To ensure protection of nesting birds in accordance with the Wildlife and Countryside Act, 1981 (as amended) the following action is required:

- Preferably undertake tree and shrub removal outside the bird breeding season (bird breeding season is considered to be from 1st March to 31st August). This option will avoid the need for a pre-works inspection to determine the presence of nesting/breeding birds.

6.1.5 If this option is not feasible and vegetation removal has to be undertaken inside the bird breeding season as defined above, then the following action will be taken:

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

6.1.6 Regardless of timing or findings of previous surveys, if nesting birds are found within the site during any part of the site clearance or construction phase, then work will stop and an ecologist consulted.

Protecting slow worm (and common amphibians)

6.1.7 The ecological appraisal has concluded with a high degree of certainty that slow worm is likely to be absent from the development footprint or present in only very low numbers.

6.1.8 An appropriate, precautionary working method statement (in the form of a Reasonable Avoidance Measures [RAMs] Method Statement) can be produced to ensure complete protection of slow worm (and common amphibians) during demolition/construction. This RAMs can be embedded within a construction method statement.

6.2 Replacement Bat Roosts

The approach is to provide replacement crevice roost features with a bat box scheme within the proposed development. Common pipistrelle bats are known to readily occupy bat boxes, and it is considered appropriate to use standard mitigation measures for the loss of places bats use for a limited amount of time and for roosts of low conservation status. The Bat Mitigation Guidelines (Mitchell-Jones, 2004) recommend the provision of new roost facilities where possible and allow flexibility over the provision of bat boxes. The new houses present the opportunity to incorporate bat boxes within the proposed development. This will create alternative roost features throughout the application site, with replacement cavity roosts in being in close proximity to the roost resources that will be lost. The proposed bat box scheme will involve installing a bat boxes on the south, east and west elevations of the new dwellings, as shown on the EMEPP, **Appendix 4.** This will provide a total of eight integrated bat boxes as replacement roost features. The bat boxes are on different aspects of the buildings to create a variety of roost temperatures/conditions.

The Bat Mitigation Guidelines allow for flexibility with regard to the programme for providing mitigation measures for the loss of roosts of low conservation significance. It is not possible to provide alternative roosts for bats in advance of the building demolition, but a temporary bat box will be required in advance of the demolition work to ensure alternative shelter is available if any bats that need to be captured by hand and moved to safety (under licence from Natural England). As discussed in **Section 5.2.16** the bat roost resource at The Elms meets the conditions of Natural England's BMCL (CL21) because the roosts are of low conservation significance and support low numbers of common pipistrelle bats (a species that are covered by the class licence). It is therefore recommended that a Registered Consultant is engaged prior to development and that work only proceeds once the Site has been successfully registered with Natural England.

Pure Ecology employs consultants that are registered on Natural England's BMCL, but alternatively an individual development licence from Natural England can be obtained by the applicant under Regulation 55 of The Conservation of Habitats and Species Regulations 2017 (as described in **Section 5.1**) for operations that would result in an offence under Regulation 41 of the legislation.

6.2.1 A range of bat boxes are available with a 'Habibat' and an 'Ibstock' integrated bat box shown as examples in **Figure 7** below. These or equivalent should be used.

Figure 7. Examples of integrated bat boxes that can be installed within external walls on new buildings



6.3 Lighting design for new houses

6.3.1 New development should aim to limit the impact of light pollution by keeping external lighting on the new houses to a minimum (both in terms of coverage, use and type/luminosity), and preferably directed away from any boundary vegetation or any integrated bat roosting features (see **Section 6.2**), to ensure that future ambient night-time light levels are maintained at a low level.

6.3.2 The new houses should restrict the location of external lighting, for example to just doorways to maintain safety and security, and should be designed in compliance with guidelines on Bats and Lighting in the UK (Bat Conservation

Trust and Institution of Lighting Professionals, 2018) to ensure significant adverse impact on bats is minimised to an acceptable level. This could include the following elements:

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

6.4 Garden fencing design

6.4.1 Close-boarded garden fencing will be fitted with small gaps at the base, approximately 10cm by 10cm, to allow hedgehog and other small animals to move into/out of and between gardens. Recommended locations for gaps in fences to allow movement of ground dwelling animals are shown on the EMEPP, **Appendix 4.**

7 Enhancement

7.1 Bird nesting boxes

7.1.1 To provide an enhancement for nesting birds, a pair of swift nesting boxes will be incorporated into each new house in five locations (10 swift boxes in total), as shown on the EMEPP, **Appendix 4**. The boxes will be orientated on a northerly facing elevation either under eaves or roof line. These locations provide shelter from direct sunlight. Integrated nest-boxes, which fit into the fabric of an external wall, will be installed.

7.1.2 The provision of swift boxes recognises the fact that swifts have been recorded within Sherston, and therefore the scheme aims to provide additional breeding sites for this declining species. Swift nesting boxes are also readily used by a range of other small passerine birds such as house sparrow and are seen as a 'universal bird box' for new development.

7.1.3 A range of alternative bird boxes are available, and a Vivara Pro Cambridge swift box (chamber and entrance brick) is shown in **Figure 8** below. This or equivalent should be used.

Figure 8. Vivara Pro Cambridge swift box



7.2 Garden planting

7.2.1 The garden planting designs should incorporate new trees and shrubs to increase and diversify habitats. Native specimens or native cultivars should be used where possible. Tree species could include field maple (*Acer campestre*), wild or bird cherry (*Prunus avium, P. padus*), small-leaved lime (*Tilia cordata*), whitebeam (*Sorbus aria* agg) and silver birch (*Betula pendula*).

7.2.2 In addition, fruit trees such as apple (*Malus pumila* agg), pear (*Pyrus communis*), plum (*Prunus* sp) or walnut (*Juglans regia*) could also be included.

7.2.3 Opportunities for native trees and shrub planting are shown on the EMEPP, **Appendix 4.**

7.3 Wildlife habitat piles / hedgehog houses

7.3.1 A wildlife refugia (hibernacula) could be constructed in each new garden, as shown on the EMEPP, **Appendix 4**. Habitat piles would be constructed by stacking 1-2m lengths of cut logs on top of each other. Stacked wood can be contained between poles driven into the ground. It is recommended to locate habitat piles within existing or new boundary habitats. Openings into the habitat piles should be maintained at ground level, providing habitat and refugia for a range of wildlife.

7.3.2 Decaying wood piles will provide ideal habitat for saproxylic invertebrates (feed on deadwood), fungi and mosses, while habitat piles also provide shelter for a variety of wildlife including small mammals, reptiles and amphibians.

7.3.3 Each garden could also be provided with a prefabricated hedgehog house, as shown on the EMEPP, **Appendix 4.**

8 References

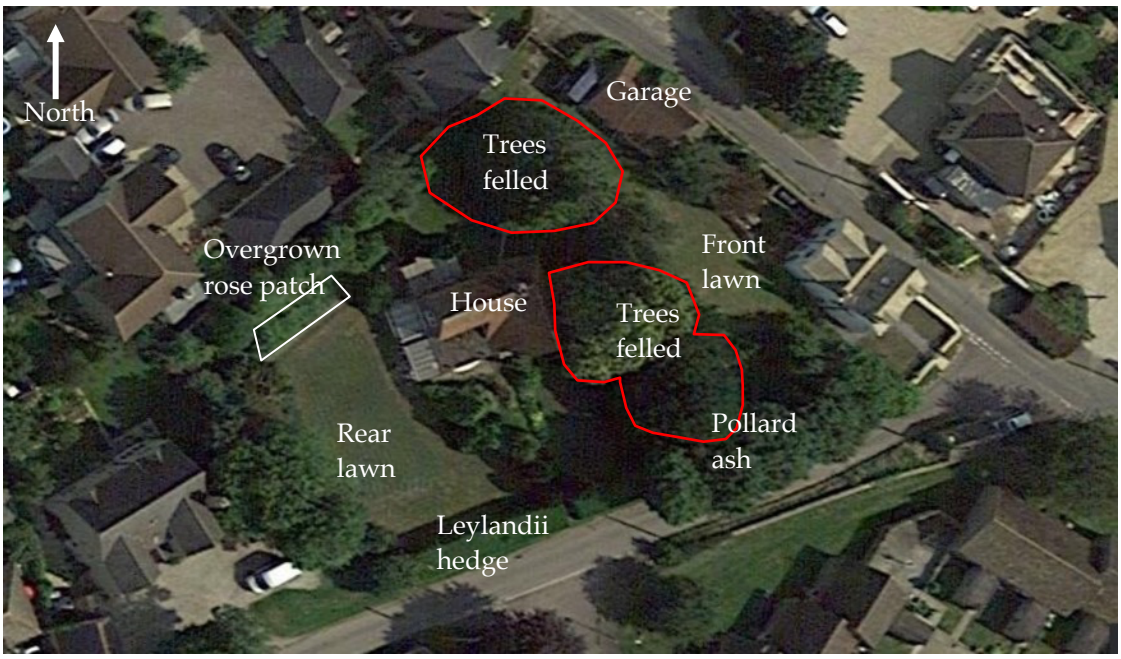
Bat Conservation Trust and Institution of Lighting Professionals (2018). *Bats and artificial lighting in the UK (Guidance Note 08/18)*. Bats and the built environment series.

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

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

JNCC, 2010. *Handbook for Phase 1 Habitat Survey - a technique for environmental audit*. JNCC Revised reprint 2003, reprinted 2007 & 2010

Appendix 1. Habitat Plan



Appendix 2. Site Photographs



House east-facing elevation (left) and north-facing elevation (right)



House west-facing elevation (left) and south-facing elevation (right)



External gaps on house, No. 1 (left) and No. 2 (right)



External gaps on house, Nos. 3 and 4 (left) and No. 6 (right)



Attic of house that is sealed with bituminous roofing felt and chicken wire



Garage southwest elevation (left) and northwest elevation (right)




Garage southeast elevation (left) and ground floor central room (right)




External gaps on garage, No. 1 (left) and No. 2 (right)




Interior roof space of original stone section of garage




Interior roof space of modern garage extension




Existing entrance from Sandpits Lane into The Elms (left) and ornamental trees lining path from Green Lane to house (right)




Rear lawn with boundary shrubs (left) and front garden with remaining apple tree (right)



Front garden looking towards the southern boundary along Green Lane



Small overgrown rose bed (left) and pollarded ash tree on southern boundary with bat roost potential (right)



View along Sandpits Lane (left) and along Green Lane (right)



Church and graveyard to south of The Elms with records of slow worm, which is on the opposite side of Green Lane and enclosed by a stone wall

Appendix 3. Legislative Context and Licensing

Conservation of Habitats and Species Regulations 2017

In relation to wildlife and nature conservation, two key Directives have been adopted by the European Community. These are (i) Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds ("The Birds Directive" formerly 79/409/EEC); and (ii) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora ("The Habitats Directive"). These Directives provide for the protection of animal and plant species of European importance and the habitats which support them, particularly through the establishment of a network of protected sites.

The Conservation of Habitats and Species Regulations 2017 comes into force from the 30th November 2017 and consolidate and update the Conservation of Habitats and Species Regulations 2010. The regulations provide for the designation and protection of European Sites, the protection of European protected species and the adaptation of planning and other controls for the protection of European Sites.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) (WCA) consolidated and amended existing national legislation to implement the Convention of the Conservation of European Wildlife and Natural Habitats (The Bern Convention) and the Birds Directive. There have been various amendments since the original enactment. Schedules 1 and 5 of the Act identify species of bird and other animal in relation to which the Act makes killing, injury, taking and disturbance an offence while Schedule 8 to the Act lists species of plant in relation to which the Act makes it an offence to intentionally pick, uproot or destroy.

The Natural Environment and Rural Communities Act 2006

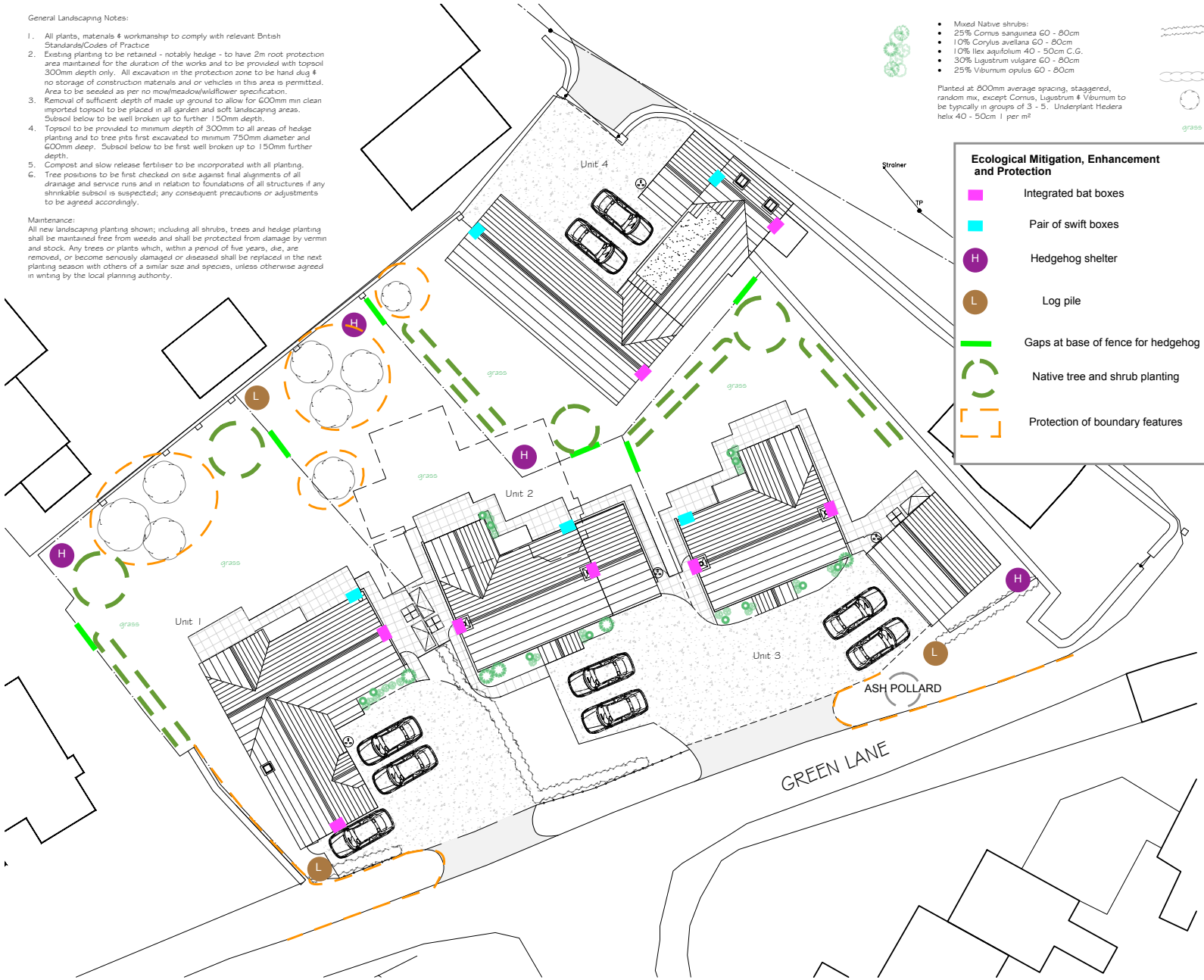
The Natural Environmental and Rural Communities Act 2006 (NERC) introduced changes intended to benefit rural communities and the environment. Section 40 of the Act creates a duty on public bodies to have due regard for habitats and species of principal importance for biodiversity in England when exercising their duties; Section 41 requires the Secretary of State to maintain a list of such habitats and species. This is important in the context of planning decisions as the National Planning Policy Framework (paragraph 117) affords planning policy protection to the habitats of species listed by virtue of Section 41.

Appendix 4. Ecological Mitigation, Enhancement and Protection Plan

General Landscaping Notes:

1. All plants, materials & workmanship to comply with relevant British Standards/Codes of Practice
2. Existing planting to be retained - notably hedge - to have 2m root protection area maintained for the duration of the works and to be provided with topsoil 300mm depth only. All excavation in the protection zone to be hand dug & no storage of construction materials and or vehicles in this area is permitted. Area to be seeded as per no mow/meadow/wildflower specification.
3. Removal of sufficient depth of made up ground to allow for 600mm min clean imported topsoil to be placed in all garden and soft landscaping areas. Subsoil below to be well broken up to further 150mm depth.
4. Topsoil to be provided to minimum depth of 300mm to all areas of hedge planting and to tree pits first excavated to minimum 750mm diameter and 600mm deep. Subsoil below to be first well broken up to 150mm further depth.
5. Compost and slow release fertiliser to be incorporated with all planting.
6. Tree positions to be first checked on site against final alignments of all drainage and service runs and in relation to foundations of all structures if any shrinkable subsoil is suspected; any consequent precautions or adjustments to be agreed accordingly.

Maintenance:
All new landscaping planting shown; including all shrubs, trees and hedge planting shall be maintained free from weeds and shall be protected from damage by vermin and stock. Any trees or plants which, within a period of five years, die, are removed, or become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species, unless otherwise agreed in writing by the local planning authority.



- Mixed Native shrubs:
- 25% Cornus sanguinea 60 - 80cm
- 10% Corylus avellana 60 - 80cm
- 10% Ilex aquifolium 40 - 50cm C.G.
- 30% Ligustrum vulgare 60 - 80cm
- 25% Viburnum opulus 60 - 80cm

Planted at 800mm average spacing, staggered, random mix, except Cornus, Ligustrum & Viburnum to be typically in groups of 3 - 5. Underplant Hedera helix 40 - 50cm 1 per m²

Mixed Native Hedge:
50% Catraegus Monogyna (Hawthorn) 60 - 80cm
10% Euonymus europaeus (Spindle) 60 - 80cm
30% Ligustrum vulgare (Wild Privet) 60 - 80cm
10% Viburnum opulus (Gueldea Rose) 50 - 60cm
4 Plants per 1.2m metre as RHS advice

Existing hedge retained

Existing deciduous tree retained

grass Grass

Ecological Mitigation, Enhancement and Protection

- Integrated bat boxes
- Pair of swift boxes
- H Hedgehog shelter
- L Log pile
- Gaps at base of fence for hedgehog
- Native tree and shrub planting
- Protection of boundary features

1 Preparation

The area to be turfed shall be sprayed out with a glyphosate herbicide and cultivated to a depth of 100mm removing all weeds, debris and stones over 25mm diameter. The surface shall be raked to smooth flowing contours with a fine tilth, incorporating pre-seeding fertiliser at 70 g/m2.

2 Delivery & Storage

Turf shall be supplied in accordance with BS3936. Turf shall be Medallion as supplied by Rowlawn. It shall be close textured and green in colour and be sufficiently fibrous to withstand handling. Turves shall be regular in shape, 300mm wide and of uniform thickness (minimum 25mm). The grass shall be closely mown and shall not exceed 25mm in height. Turf shall be stacked in piles of up to 1 metre. It shall not be laid in frosty or waterlogged conditions and shall not be stacked in rolls for more than three days..

3 Turf

Turfing operations shall be in accordance with BS 4428. Whole turves shall be laid around the perimeter of the area to be turfed. The central area shall be laid in rows with staggered joints, well butted together, working from planks positioned on turves already laid. The turf shall be watered on completion. Any unevenness shall be made good by lifting the turf and adjusting the levels. Should shrinkage occur, fine topsoil shall be brushed into the joints.

4 Initial Cut

When newly seeded and turfed areas reach 50mm they should be lightly rolled and cut to a height of 30mm. All arisings shall be removed. Any bare patches shall be made good at this time. Seeded areas shall be cut for a second time when the sward reaches 50mm high.

- 1m post & rail fence
- 1.8m close boarded fence
- Existing 1.8m timber fence retained
- Pea gravel - Cotswold stone
- Paving
- Bin store
- Cycle store
- Vehicle recharging point

N

0 10
Metres

SITE PLAN

lpc
TOWN AND COUNTRY PLANNING DEVELOPMENT CONSULTANTS
LPC (TRULL) LTD.,
TRULL, TETBURY, GLOUCESTERSHIRE GL8 8SQ
Tel: 01285 841433 email: admin@lpctrull.com

Client
Dickenson Family
Project
The Elms, Sherston
Drawing
SITE PLAN - PROPOSED

Date: January 2022 Scale: 1:200 @ A2
Drawing Number
LPC 5294 PL 01