BETTS ECOLOGY and ESTATES

ECOLOGICAL WALK-OVER SURVEY, DAYTIME BAT ASSESSMENT, AND PUBLIC RECORDS SEARCH

LAND AT BALLSGATE COTTAGE, AYMESTREY, HEREFORDSHIRE, HR6 9UT.
for
MR MICHAEL KEARTON

RESULT INDICATOR OF THIS SURVEY

- **RED.** Do not proceed. Without major modification this project will have significant adverse ecological & biodiversity impacts. It will not be sustainable or compliant with current legislation and approved planning policy. Discussion is required with the Planning Authority.
- **AMBER.** Caution. The proposals as conceived would have substantial negative impacts and cannot achieve a "No Net Loss to Biodiversity" outcome unless changes are made to avoid, mitigate/restore or, as a last resort, compensate for the ecological impacts. With such changes and subject to pre-application agreement with the Planning Authority, the project is considered likely to be feasible, however.
- **GREEN.** On present information, the proposals are expected to have no or only minor adverse impacts on ecology & biodiversity, and some gains. In terms of ecology, the project can proceed providing all the recommendations are met, enforced and monitored.

June 2021
S:6947/J001474

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REPORT TITLES – AN EXPLANATORY NOTE.

Baseline ecological audits of a site are exactly that: an examination of a defined area that includes a careful and expert walk-over, often supplemented by local knowledge, landscape & planning data and published ecological records, all of which combine to provide a reliable essential reference for clients. The terminology for such reports varies between practitioners and they may be called "Extended Phase 1 Habitat Surveys", "Preliminary Ecological Appraisals", "Walk-Over Wildlife Surveys", "Ecological Impact Assessments" or several variations on this scheme. We feel that Baseline Ecological Audit is the best descriptor as it indicates that the site in question has been examined and described in a formal and organised manner to provide a general description and identify any matters that may require further specialist examination.

PROJECT DATA – BASELINE ECOLOGICAL SITE AUDIT	
Surveyor	Kevin McGee
Confirm site risk assessment completed	YES
Site address	Land at Ballsgate Cottage, Aymestrey, Herefordshire. HR6 9UT.
Project proposed	Refurbishment works to an existing detached cottage, and possible unspecified development affecting the total area of land within the property ownership boundary supplied.
Boundary as specified by client	YES
Site area (ha) & central OS Grid Ref.	The site surveyed is approximately 1.0 hectares in all and is located at OS Grid Reference SO 41778 66334 (approx. centre of update area coverage).
Survey date	04 June 2021

REPORT CONTROL General Report Information	
Ecologist	Kevin McGee
Date report issued	28 June 2021
Contract manager	Natalie Loben

Report Version Control

Version	Date	Author	Description
1.0	07 June 2021	Kevin McGee	Document created
1.1	18 June 2021	Kevin McGee	Document completed

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INTRODUCTION

As almost all baseline ecological surveys relate to a planning application, it is useful to consider our work in this context. British Standard 42020: 2013 *Biodiversity. Code of practice for planning and development* is helpful in this respect (www.bsigroup.com) as it makes recommendations in the five typical stages of a planning application:

- Stage 1 (pre-application) – biodiversity in project design, the mitigation hierarchy (avoidance, adequate mitigation, or as last resort compensation), the impacts with constraints and opportunities, proportionality, surveys and reports;
- Stage 2 (validation, registration) – ensuring submitted information is sufficient;
- Stage 3 (decision making) – consultation, further information if needed, resolving issues;
- Stage 4 (determination) – setting deliverable Conditions, obligations if not covered by Conditions, additional consents that may be needed;
- Stage 5 (implementation) – protecting wildlife/biodiversity during construction, long term management and monitoring.

We are often only contacted after a project has been designed, which can be costly and problematic if biodiversity has not been sufficiently considered. We always ask clients to contact us at the very earliest stage of a project, preferably when options for alternative sites are available. This can save significant costs and delays. We can and do assist with all five stages. Although the Baseline Ecological Audit is primarily confined to Stages 1 and 2, we include text suitable for incorporation as Conditions where relevant and we can offer assistance in negotiating, writing and discharging them. When appropriate, as is commonly the case to ensure the overarching aim of No Net Loss but rather Net Gains to Biodiversity, we can take full responsibility for all long term ecological management and monitoring as an exclusive service through our Estates division.

WORK NEEDED FOR COMPLIANCE AS REVEALED BY THE SURVEY

RESULT INDICATOR OF THIS SURVEY

- **RED.** Do not proceed. Without major modification this project will have significant adverse ecological & biodiversity impacts. It will not be sustainable or compliant with current legislation and approved planning policy. Discussion is required with the Planning Authority.
- **AMBER.** Caution. The proposals as conceived would have substantial negative impacts and cannot achieve a "No Net Loss to Biodiversity" outcome unless changes are made to avoid, mitigate/restore or, as a last resort, compensate for the ecological impacts. With such changes and subject to pre-application agreement with the Planning Authority, the project is considered likely to be feasible, however.
- **GREEN.** On present information, the proposals are expected to have no or only minor adverse impacts on ecology & biodiversity, and some gains. In terms of ecology, the project can proceed providing all the recommendations are met, enforced and monitored.

Please note that, in determining the requirements listed below, Betts adopt an objective and independent view, taking account of current legislation and the official guidance published by, or used by, Local Planning Authorities and the Statutory Agencies whom they consult[1]. The aim is always to inform the project's proponents within a framework of the published policies of international, national and local governments on ecology and biodiversity, as may be relevant to the circumstances of the case, but always proportionately and based in science.

IMPORTANT

In the two Tables below, ecological requirements listed should be contained as formal Conditions within any permission the Planning Authority may be minded to issue. It is essential to include a suitable mechanism for verification, monitoring and enforcement. We will be pleased to assist with suggested wording if needed.

[1] The regulatory context includes the Wildlife & Countryside Act, Berne Convention, Bonn Convention, Countryside & Rights of Way Act, Natural Environment and Rural Communities Act, Convention on Biological Diversity (Rio de Janeiro, Nagoya/Aichi/Paris, *etc.* — UK Post-2010 Biodiversity Framework), British Standards 42020: 2013 and 8583: 2015, Chartered Institute of Ecology & Environmental Management ecological impact assessment guidance, *etc.*

FURTHER WORK LIKELY TO BE NEEDED	
From observations of this walk-over examination, is further work likely to be needed regarding notable/protected species, habitats, planning policy, biodiversity duty or related regulatory compliance?	YES

Work required if "yes":	Reason
Ensure a robust and efficient foul drainage system conforming to currently approved pollution prevention measures is designed and incorporated into the design of the development proposal. This must ensure that no pollution will ever affect the nearby water bodies associated with the River Lugg SSSI. The drainage system should comply with the requirements of BS 752 Building Drainage and Building Regulations 2010 Approved Document H 2002 Edition.	Best practice and compliance with government policy on biodiversity protection and enhancement.
A Habitat Regulations Assessment will need to be undertaken by a competent authority, to assess the likely significant effects of the proposals on the River Lugg SSSI, which is part of the River Wye SAC catchment.	Compliance with government policy on biodiversity protection and enhancement.
A daytime bat assessment of the cottage at the east of the site (Target Note 1) and the timber barn (Target Note 3) found both to have **'low' potential.** In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that the buildings will each need a dusk emergence survey. Should bats be observed using either of the buildings during the survey, two further surveys will be required and at least one should be dawn re-entry survey.	Legal compliance, especially laws protecting bats.
Undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken.	Compliance with law protecting active birds' nests.
To avoid the risk of infringement of regulations, conduct a pre-clearance search of all areas of the site using suitably qualified ecological scientists under a Betts Method Statement or one formally pre-agreed by us immediately prior to site stripping to move any vulnerable taxa to safety or allow other necessary precautions to be taken prior to the commencement of development activity.	Legal compliance, especially laws protecting mammals, birds and herpetofauna.
In the event of removal of any trees, woody shrubs, or sections of hedgerow, and any demolition works to buildings, it will be important to undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken.	Compliance with law protecting active birds' nests.
If there are any steep-sided excavations created during construction, please ensure they are covered overnight or provided with ramps to prevent any mammals becoming trapped. Re-fill such excavations as soon as feasible.	Prevention of cruelty.

FURTHER WORK LIKELY TO BE NEEDED	
Avoid unnecessary negative impacts of new lighting at night, *e.g.* on bats, invertebrates, plants, night sky. Minimise the hours when lighting is used, avoid "spillage" by using directional down-lighting, reduce brightness of necessary illumination and keep light from shining on any potential bat roost entries, mammal holes, *etc.*	Reducing ecological impact and compliance with National Planning Policy Framework (2019) paragraph 174 onward.
Create new wildlife habitats appropriate to the site's context, *e.g.* through the use of log piles, "wild" corners and native planting; install three bird, three bat and three invertebrate boxes and incorporate these into the project's landscape/building design scheme. (We can provide specific recommendations for models and siting on request, but they must be of good quality and durable.) Bat and bird boxes must be inspected annually and replaced when needed (usually after ten years). Ensure permeability for hedgehogs is provided at the bases of any new boundary fencing.	Best practice and compliance with government policy on biodiversity protection and enhancement
Appoint an Ecological Clerk of Works[2] and formally instruct ("toolbox talk") contractors and site personnel on agreed policies, recommendations and requirements to maintain environmental quality and minimise impacts during construction, generally avoiding unnecessary disturbance and pollution, avoiding vehicle movements and storage of materials on garden/retained greenspace areas. Please see constraints and opportunities section later in this report.	Best practice (BS42020, *etc.*)
Establish "green" roofs and walls on all suitable structures that can accommodate them, ensuring appropriate ecological science input to their management and maintenance.	Green Infrastructure and biodiversity enhancement.
Use native planting (preferably of local origin and reflecting local botany) wherever feasible in all landscaping. Where exotic species are planted, always avoid invasive species and choose those with wildlife value such as for nectar or shelter. (A selection of species is available from us.)	Biodiversity enhancement and helping to assure "no net loss".
Embody Green Infrastructure protocols in landscaping and ensure ecological linkage out from and into the site. (Please ask us if you require further details.)	Ecological connectivity and biodiversity protection/ enhancement.
Ensure that the "carbon footprint" of all aspects of the project and its future operation is compliant with current best practice. This may include taking appropriate steps to avoid or reduce the use of fossil fuels, employing scientifically sound carbon offset/CO_2 sequestration and instating renewable energy technologies. Ensure the measures agreed are quantified, independently verified and monitored.	To follow government and international policy on climate change.
Wherever possible, retain mature trees and established native hedgerows on site and at the periphery by designing around them. Protect trees in line with BS5837 and do not remove ivy, mistletoe, standing dead wood, snags or rot unless there is a clear and material safety risk or presence of a serious pathogen. (Ask for advice on pathogens from a qualified silvicultural ecologist if in doubt.)	Tree and biodiversity protection; BS5837: 2012 *Trees in relation to design, demolition and construction.*

[2] This should be a suitably qualified senior person who will keep a daily log and report throughout the construction process.

RESULTS — WHAT WE FOUND

Objectives

'Phase 1' habitat survey, daytime bat assessment, and public records search.

Methods and Limitations

The site was surveyed using appropriate methods generally following NCC (1990)[3] for Phase 1 habitat survey, with procedures appropriately selected from Institute of Environmental Assessment (1995)[4] and Jermy *et al.* (1995)[5] for species and any specialist habitat appraisal as required, and/or the current guidance on survey methods and Ecological Impact Assessment from the (Chartered) Institute of Ecology and Environmental Management (*e.g.* CIEEM 2013, IEEM 2007 and updates[6]) with further reference to British Standards such as 42020[7] and 8583 as appropriate.

It should be noted that, whilst the investigation of the site was appropriately intensive within the intended framework of the commission, and we feel it is unlikely that significant matters have been overlooked, a single visit will inevitably miss species not apparent on the date of survey by reason of seasonality, mobility, habits or chance. The month of June is within the optimal survey period for many taxa of nature conservation interest in this part of the United Kingdom.

It should always be recalled that wildlife surveys of the kind required for planning and development or similar project purposes are seldom granted sufficient time or resources to examine non-vascular plants, invertebrates or fungi in great detail, yet these are the fundamental elements of ecosystems that provide the niches and habitats for larger fauna to exploit. In an ideal world, all surveys would include results of full sampling of vascular and non-vascular plants, micro- and macro-invertebrates and mycological status at individual, population and community levels. As that involves skills, time and expense well beyond what is available, we ask readers of our general survey reports to understand that we do consider the larger species we record in their wider ecosystem

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[3] **Nature Conservancy Council (1990).** *Handbook for Phase 1 habitat survey — a technique for environmental audit.* Nature Conservancy Council, Peterborough, UK.

[4] **Institute of Environmental Assessment (1995).** *Guidelines for Baseline Ecological Assessment.* E & FN Spon, London, UK.

[5] **Jermy, A.C., Long, D., Sands, M.J.S., Stork, N.E.** and **Winser, S.** (Eds) **(1995).** *Biodiversity assessment: a guide to good practice.* Department of the Environment/HMSO, London, UK.

[6] **Chartered Institute of Ecology and Environmental Management (2013).** *Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester, UK.* **Institute of Ecology and Environmental Management (2007).** *Guidelines for Ecological Impact Assessment in the United Kingdom.* IEEM, Winchester, UK.

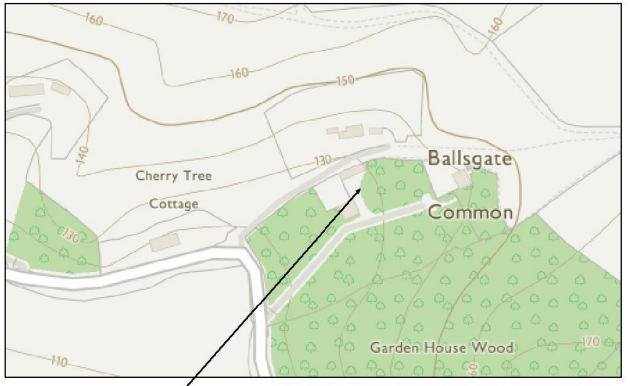
[7] **British Standards Institute (2013).** *British Standard 42020: 2013 Biodiversity. Code of practice for planning and development.* British Standards Institute, London, UK.

context and take into account the impacts of proposals at an ecosystem level when prescribing avoidance, mitigation, enhancement and/or compensation.

Site plan

Key:

- Survey boundary
- Broad-leaved semi-natural woodland A1.1.1
- Broadleaf tree A3.1
- Broadleaf scattered trees A3.1
- Neutral Un-improved grassland B2.1
- Tall ruderal C3.1
- A Amenity grassland J1.2
- Intact species-rich hedge J2.1.1
- Fence J2.4
- Buildings J3.6
- Bare ground J4
- 1 Target notes



Location of site

Client:	Mr Michael Kearton
Site:	Ballsgate Cottage, Aymestry, Hereford HR6 9UT
Title:	Baseline Ecological Site Audit
Ref:	S: 6947 / J001474
Date:	June 2021

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Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

Results Table

ITEM	OBSERVATIONS
Habitats & Vegetation (*NB.* Please be aware that several designated habitat types and many plants enjoy legal protection in Britain.)	
General description	The site surveyed is a plot of land in a remote rural area approximately 1.0ha in extent situated on west-facing sloping ground rising steadily to the east. The site is surrounded on three sides by blocks of semi-natural broad-leaved woodland and mixed plantation woodland. The site contains three buildings: a small stone cottage with plans for refurbishment (Target Note 1), a recently refurbished stone cottage (Target Note 2), and a timber barn/outbuilding (Target Note 3). The land is dominated by neutral un-improved grassland now becoming increasingly overgrown with areas of rapidly developing tall ruderal natural vegetation. There are several fine examples of old apple and damson trees, and evidence of several more that have been removed. Together, these fruit trees constitute a traditional orchard with high ecological value. The southern side of the site rises up the valley sides and is bordered by a block of semi-natural broad-leaved woodland; the top of this slope alongside the woodland edge comprises slightly acidic neutral grassland containing a good variety of native flowering plants typical of this geographic locality (please see Target Note 10). The surrounding undulating rural landscape of steep-sided stream and river valleys contains agricultural land used for arable and livestock/dairy production, small remote villages and extensive blocks of semi-natural broad-leaved woodland and plantation woodland occupying many of the hillsides. The small village of Aymestrey lies 1.3km to the south-east, Leominster lies 10.5km to the south-east, and Ludlow lies 13.0km to the north-east. Nearby sections of the River Lugg SSSI lie just 205m to the south, it will be important to ensure a robust and efficient drainage system conforming to currently approved pollution prevention measures is designed and incorporated into the proposed development. The River Lugg is part of the River Wye SAC catchment. The Local Authority will be required to produce a Habitat Regulations Assessment to determine whether there are any likely significant effects on this nationally designated site as a result of the proposals. Trees and woody shrubs present were: hawthorn, apple, damson, goat willow, hazel, bramble, raspberry, mistletoe, *Buddleja,* a *Rosa* species, a *Cotoneaster* species, and ivy. Grasses and forbs recorded were: Yorkshire fog, creeping soft-grass, perennial rye-grass, tufted hair-grass, meadow foxtail, cock's-foot, hard rush, cleavers, herb Robert, dandelion, daisy, common nettle, cow parsley, creeping buttercup, meadow buttercup, broad-leaved dock, a comfrey species, ground ivy, hogweed, greater burdock, creeping thistle, bracken, rosebay willowherb, greater willowherb, field forget-me-not, field horsetail, wood avens, silverweed, hoary plantain, strawberry, columbine, a mint species, white clover, red clover, honesty, daffodil, germander speedwell, thyme-leaved speedwell, wood speedwell, ground elder, bluebell, mugwort, large

ITEM	OBSERVATIONS
	bindweed, common sorrel, white dead-nettle, bush vetch, dog's mercury, red campion, scentless mayweed, common figwort, primrose, wood dock, creeping jenny, greater stitchwort, coltsfoot, pignut, yellow archangel, wood sorrel, meadow buttercup, angelica, bugle, hairy bittercress, Welsh poppy, and cuckoo flower. Ten Target Notes was identified on-site during the survey and four Target Notes were identified off-site because of their ecological interest and/or value, and how they may be impacted by the development. **Target Note 1.** This is the detached stone cottage on the upper slope at the east of the site (see Plates 1–5). A daytime bat assessment found it to have 'low' potential to support roosting bats. In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that the building will need a dusk emergence survey. Should bats be observed using the building during the survey, two further surveys will be required and at least one should be dawn re-entry survey. Full details follow in the bats section below. **Target Note 2.** This is the recently renovated detached stone cottage at the northern site boundary (see Plates 6–8). A daytime bat assessment found it to have 'negligible' potential to support roosting bats. In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that no further bat surveys are required. Full details follow in the bats section below. **Target Note 3.** This is the small timber barn/outbuilding near Target Note 2 (see Plates 9–11). A daytime bat assessment found it to have **'low' potential to support roosting bats.** In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that the building will need a dusk emergence survey. Should bats be observed using the building during the survey, two further surveys will be required and at least one should be dawn re-entry survey. Full details follow in the bats section below. **Target Note 4.** This is the small garden attached to the western side of the cottage at Target Note 2. It is listed as a target note because it contains a fine specimen of a mature hawthorn, and a fine specimen of a mature apple tree (see Plates 12 & 13). Both have high ecological value, and the apple is further enhanced by the presence of mistletoe. Both trees should be retained. **Target Note 5.** This is all parts of the species-rich hedgerow forming a section of the northern site boundary and all of the western site boundary (see Plate 14). All parts have high ecological value as bird-nesting habitat, sources of pollen and nectar for invertebrates, sources of food for over-wintering birds, and as sources of food for the developing larvae of a wide range of invertebrates. Boundaries formed of species-rich hedgerows also provide corridors of foraging and communication habitat for bats, and as corridors of habitat allowing the movement and spread of species throughout the landscape generally.

ITEM	OBSERVATIONS
	In the event of removal of any sections of hedgerow, it will be important to undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken. **Target Note 6.** This is the small group of mature apple trees towards the western site boundary (see Plate 15). Together, all the remaining fruit trees throughout the site may be considered as a small 'traditional' orchard. Traditional orchards are a declining habitat now recognised as being of importance for a wide variety of species; as such, they are now recognised as priority habitats with a Biodiversity Action Plan (BAP) in place. One of the principal reasons for their importance is that as fruit trees mature, they typically develop decaying wood still attached to the trunk and main limbs that provide essential niche habitats for the larval development of a wide range of saproxylic invertebrates dependent on dead and diseased standing wood; many of these specialist invertebrates are now scarce and threatened due to loss of habitat. As many of these trees as possible should be retained and the potential for further losses of these trees is why this report has been given a cautionary 'amber' indication as achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site. All trees and hedges to be retained should be protected by a buffer strip during construction activities (including the root-zones), and nowhere within the buffer strip should be used for the storage of machinery or materials. **Target Note 7.** This is another small group of mature apple trees at the centre of the site (see Plate 16). Please refer to the notes for Target Note 6 (above). **Target Note 8.** This is the group of developing trees and shrubs near the northern site boundary (see Plate 17). Areas such as this that have been left to develop naturally have high ecological value. This is another example why this report has been given a cautionary 'amber' indication as achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site. All trees and hedges to be retained should be protected by a buffer strip during construction activities (including the root-zones), and nowhere within the buffer strip should be used for the storage of machinery or materials. **Target Note 9.** This is a group of mature damson trees at the east of the site on the upper slopes (see Plate 18). Please refer to the notes for Target Note 6 (above). **Target Note 10.** This is all parts of the southern site boundary on steep sloping ground alongside a block of neighbouring woodland which has a community of native grasses and forbs conforming closely to MG9, the *Deschampsia cespitosa* community (see Plate 19). MG9 is found on permanently moist, gleyed soils and is typical natural grassland/wood-edge habitat for this geographic locality. Species

ITEM	OBSERVATIONS
	recorded include tufted hair-grass *Deschampsia cespitosa*, creeping soft grass *Holcus mollis*, Yorkshire fog *Holcus lanatus*, hard rush *Juncus inflexus*, meadowsweet *Filipendula ulmaria*, pignut *Conopodium majus*, creeping jenny Lysimachia nummularia, bugle Ajuga reptans, wood speedwell *Veronica montana* and wood sorrel *Oxalis acetosella*. A single flowering specimen of the native form of Welsh poppy *Papaver cambricum* was found near the eastern site boundary and is considered highly unlikely to be a 'garden escape' (see Plate 20). This area is a further example why this report has been given a cautionary 'amber' indication as achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site.
Statutory designations (on/near)	A public records search revealed two Statutory Designated Sites within a 2km search area. They are: Rockhall Quarry SSSI and River Lugg SSSI. It will be important to ensure a robust and efficient system conforming to currently approved pollution prevention measures is designed and incorporated into the proposed development to ensure no pollution can ever enter nearby water courses flowing into the River Lugg catchment zone.
Non-statutory designations (on/near)	A public records search revealed nine Non-Statutory Designated Sites within a 2km search area. All are Special Wildlife Sites (SWS), they are: Yeld Wood SWS, Woodhampton and Barnett Woods SWS, Mere Hill Wood Track Sections SWS, Ballsgate Common SWS, Peckett's Yeld Wood SWS, Garden House Wood SWS, Pyon Wood SWS, Three Ponds at Aymestry SWS, and Yatton Hill, Leinthall Common and Croft Ambrey SWS.
Notable hedgerows, woodland or scrub	Target Note 5 is all parts of the species-rich hedgerow forming a section of the northern site boundary and all of the western site boundary (see Plate 14). All parts have high ecological value as bird-nesting habitat, sources of pollen and nectar for invertebrates, sources of food for over-wintering birds, and as sources of food for the developing larvae of a wide range of invertebrates. Boundaries formed of species-rich hedgerows also provide corridors of foraging and communication habitat for bats, and as corridors of habitat allowing the movement and spread of species throughout the landscape generally. In the event of removal of any sections of hedgerow, it will be important to undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any active bird nests are present.

ITEM	OBSERVATIONS
Ecologically notable trees (*e.g.* veteran, wildlife significant)[8]	Together, all the remaining fruit trees (apple and damson) throughout the site may be considered as a small 'traditional' orchard. Traditional orchards are a declining habitat now recognised as being of importance for a wide variety of species, as such, they are now recognised as priority habitats with a Biodiversity Action Plan (BAP) in place. One of the principal reasons for their importance is that as fruit trees mature, they typically develop decaying wood still attached to the trunk and main limbs that provide essential niche habitats for the larval development of a wide range of saproxylic invertebrates dependent on dead and diseased standing wood; many of these specialist invertebrates are now scarce and threatened due to loss of habitat. As many of these trees as possible should be retained and the potential for further losses of these trees is why this report has been given a cautionary 'amber' indication because achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site. All trees and hedges to be retained should be protected by a buffer strip during construction activities (including the root-zones), and nowhere within the buffer strip should be used for the storage of machinery or materials.
Ponds/water courses	None observed within the survey area, and no ponds within 500m with access unrestricted by features including main roads and railways.
Notable communities	Target Note 10 is all parts of the southern site boundary on steep sloping ground alongside a block of neighbouring woodland which has a community of native grasses and forbs conforming closely to MG9, the *Deschampsia cespitosa* community (see Plate 19). MG9 is found on permanently moist, gleyed soils and is typical of natural grassland/wood-edge habitat for this geographic locality. This area is a further example why this report has been given a cautionary 'amber' indication because achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site.
Notable vascular plants	A single flowering specimen of the native form of Welsh poppy *Papaver cambricum* was found near the eastern site boundary and is considered highly unlikely to be a 'garden escape' (see Plate 20).
Notable bryophytes/algae	None observed on site.
Notable lichens	None observed on site.
Notable fungi	None observed on site.
Other notable habitats/vegetation	None observed on site.
Features that should be retained	None observed on site.

[8] Please note that we do not check TPO status as this is a landscape/amenity planning classification.

ITEM	OBSERVATIONS
Mammals (*NB.* Several species and their habitats have very strict protection in law.)	
[redacted]	None observed, and no field signs observed [redacted]
Otter	None observed, and no field signs observed within the development footprint. A public records search revealed six records within the 2km search radius.
Other mustelids	No obvious signs noted but it is possible that the site is utilised by other mustelid species (*e.g.* stoat).
Bats	A licensed ecologist (registration no. 2018-34260-CLS-CLS) completed a thorough inspection for evidence of bats, or potential for bats at the three buildings on site subject to the development proposal (Target Notes 1, 2 & 3). An inspection was made of the exteriors and interiors of the buildings using 8 x 42 binoculars for any bat field signs or evidence of, or potential for, bat roosting such as faeces, feeding remains, oil staining, scratch marks, access points, loose claddings, cavities and hollows, *etc.* Methods followed those outlined in the Bat Conservation Trust's 2016 survey guidelines (Collins 2016)[9]. **Target Note 1.** This is all parts of the detached two-storey stone-built residential cottage at the top of the slope at the eastern side of the site (see Plates 1–5). All parts of the exteriors and interiors are in a generally poor state of repair having been neglected for some time. The exterior is built using predominately stone, but with bricks in places. There are no suitable gaps or crevices in the stone-work suitable for crevice-dwelling bats, but there are gaps beneath the eaves and soffits in places allowing potential entry points into the roof void for bats (see Plates 3 & 4). There are also small gaps beneath and between several of the old and warped clay tiles on the pitched roof (see Plate 2). The interior of the roof void was found to be small and cramped. The roof timbers are of a simple construction and the roof lining was found to be largely intact (see Plate 5). There were high quantities of cobwebs present and the interior was dark. A thorough search of all interior surfaces found no evidence of bats in the form of droppings, feeding remains, or dead bats. However, the exterior condition of the eaves, soffits and roof-tiles, in combination with the remote rural location in excellent habitat, means that low numbers of bats may occasionally roost in this building. The daytime bat assessment found it to have **'low' potential for supporting roosting bats.** In line with

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

ITEM	OBSERVATIONS
	current recommendations outlined in the Bat Conservation Trust Guidelines this means that the building will need a dusk emergence survey. Should bats be observed using the building during the survey, two further surveys will be required and at least one should be a dawn re-entry survey. **Target Note 2.** This is all parts of the detached two-storey stone-built residential cottage at the northern side of the site (see Plates 6—8). All parts of the exteriors and interiors are in a generally excellent state of repair having been recently renovated. The exterior is built using predominately stone, but with bricks in places. There are no suitable gaps or crevices in the stone-work suitable for crevice-dwelling bats, and there are no gaps beneath the eaves and soffits in places allowing potential entry points into the roof void for bats (see Plate 7). There are also no gaps anywhere underneath or between the slate tiles on the pitched roof. The interior of the roof void was found to be small and cramped. The new roof timbers are of a simple construction and the new roof lining was found to be intact (see Plate 8). The interior was dark and a thorough search of all the (very clean) interior surfaces found no evidence of bats in the form of droppings, feeding remains, or dead bats. The daytime bat assessment found it to have **'negligible' potential for supporting roosting bats.** In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that no further bat surveys are required at this building. **Target Note 3.** This is all parts of the small timber barn/outbuilding close to the cottage at Target Note 2 (see Plates 9—11). All parts of the exteriors and interiors are in a generally poor state of repair having been neglected for some time. The exterior is built using overlapping timber planking attached to a timber framework for the walls. There are gaps and crevices beneath the overlapping planking suitable for crevice-dwelling bats. The roof is made of sheets of corrugated tin. The interior of the timber barn/outbuilding is largely open to the elements (see Plate 10) with few dark enclosed places suitable for roosting bats. A thorough search of all interior surfaces found no evidence of bats in the form of droppings, feeding remains, or dead bats. However, the exterior condition of the overlapping timber planking in combination with the remote rural location in excellent habitat, means that low numbers of crevice-dwelling bats may occasionally roost in this building. The daytime bat assessment found it to have **'low' potential for supporting roosting bats.** In line with current recommendations outlined in the Bat Conservation Trust Guidelines this means that the building will need a dusk emergence survey. Should bats be observed using the building during the survey, two further surveys will be required and at least one should be a dawn re-entry survey.

ITEM	OBSERVATIONS
	A pair of amber-listed redstarts were observed constructing a nest on a timber beam inside the southern aspect of the barn (see Plate 11). All parts of this building provide suitable nesting habitat for other bird species, including swallow and house sparrow. Undertake any demolition work outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken. A public records search revealed seventy-three records involving seven species and two unspecified species within the 2km search radius. Trust's 2016 survey guidelines (Collins 2016)[10].
Water vole	N/A. No suitable habitat.
Common or hazel dormouse	No suitable dormouse habitat is present on-site, and there are no links to corridors of connectivity to suitable dormouse habitat. The boundary hedgerows at Target Note 15 do not contain sufficient quantities of dense brambles, hazel and honeysuckle, or have the height and complexity of structure typically associated with optimal dormouse habitat. A public records search revealed seven records within the 2km search radius. All the records are from 1991.
Deer	None observed, and no field signs observed but could possibly use the site.
Hedgehog	None observed, and no field signs observed but could possibly use the site. Permeability for hedgehogs commuting through the landscape should be incorporated within the development. A public records search revealed four records within the 2km search radius.
Shrews	No signs of shrew were noted although it is highly likely that they are present within parts of the site.
Others	It is likely that other common mammals (*e.g.* grey squirrel, fox, rabbit, rats, mice, moles and voles) utilise the site.
Birds (*NB.* With the exception of eleven derogated pest or very common species, the Wildlife and Countryside Act (1981 and amendments) gives protection to all wild birds in Britain from killing, injuring or taking as well as taking, damaging or destroying nests in use or being built, and taking or destroying eggs. Many species are also protected by international statutes to which Britain is a signatory.[11])	
Red list	None observed on site.

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

[11] Please also see www.rspb.org.uk/wildlife/birdguide/status_explained.aspx and www.bto.org/sites/default/files/u38/downloads/home-news/2011-11/SUKB%202011%20final.pdf for red and amber lists *etc.*, and explanations.

ITEM	OBSERVATIONS
Amber list	A pair of redstarts were observed nest-building on a timber beam inside the southern entrance to the timber barn/outbuilding. Two active house martin nests were observed under the eaves at the southern side of the stone cottage at Target Note 2.
Active nests	Please see above.
Other	The following green-listed avian species were seen and/or heard on/flying over the site: raven, wood pigeon, buzzard, blackbird, great tit, blue tit, swallow, wren, blackcap, chiffchaff, and goldfinch.
Comments on ornithology	All parts of this site, including the buildings, provide excellent foraging and nesting habitat for a wide range of bird species, including the amber-listed redstart and house martin established as breeding here. In the event of removal of any trees or hedgerows, or demolition/alteration works to any of the buildings, undertake site clearance outside the bird nesting season (usually taken as March to mid-August inclusive in this part of Britain). If this is unavoidable, pre-clearance inspection by a suitably experienced ornithologist will be required to identify whether any nests are present, and ensure appropriate action is taken. All areas containing native vegetation, even the limited areas at this site, are important for breeding invertebrates which in turn become a vital food-source for the developing fledglings of many bird species.
<u>Herpetofauna</u> (*NB.* The grass snake, slow-worm, viviparous (common) lizard and adder (viper) are all protected from intentional killing and injury under Schedule 5, Section 9(1), of the Wildlife and Countryside Act as amended/reinforced by the CROW Act 2000. They are also protected under Schedule 5, Section 9(5) which prohibits selling, offering for sale, possessing or transporting for the purpose of sale, or advertising for sale, any live or dead animal, or any part of, or anything derived from the species. Other rarer species and their habitats have stricter protection.)	
Adder	N/A. No suitable habitat. A public records search revealed two records within the 2km search radius.
Grass snake	N/A. No optimal habitat on site. However, to avoid the risk of infringement of regulations, conduct a pre-clearance search of any areas of the site to be cleared using suitably qualified ecological scientists under a Betts Method Statement or one formally pre-agreed by us immediately prior to site stripping to move any vulnerable taxa to safety or allow other necessary precautions to be taken prior to the commencement of development activity. A public records search revealed no records within the 2km search radius
Slow-worm	N/A. No optimal habitat on site. However, to avoid the risk of infringement of regulations, conduct a pre-clearance search of any areas of the site to be cleared using suitably qualified ecological scientists under a Betts Method Statement or one formally pre-agreed by us immediately prior to site

ITEM	OBSERVATIONS
	stripping to move any vulnerable taxa to safety or allow other necessary precautions to be taken prior to the commencement of development activity. A public records search revealed three records within the 2km search radius.
Common lizard	N/A. No suitable habitat. A public records search revealed four records within the 2km search radius.
Rarer reptiles	No suitable habitat. Not found in this area.
Great crested newt	N/A. No suitable habitat. A public records search revealed three records within the 2km search radius.
Natterjack toad	No suitable habitat. Not found in this area.
Other amphibia	Suitable refugia were overturned in a general search for reptiles and amphibians, but none were found. A public records search revealed three records of common frog, one record of common toad, and one record of smooth newt within the 2km search radius.
Fish (*NB.* Various levels of legal protection.)	
Significant fishery	N/A. No suitable habitat on site. However, the site lies close to the River Lugg SSSI and water courses nearby flowing down into the Lugg catchment. The River Lugg supports important breeding populations of Atlantic salmon, brown trout, sea trout, twaite shad, and bullhead. It will be important to ensure a robust and efficient system conforming to currently approved pollution prevention measures is designed and incorporated into the proposed development to ensure no pollution can ever enter nearby water courses flowing into the River Lugg catchment zone.
Bullhead	
Shad	
Lampreys	
Salmonids	
Other notable fish	
Macro-invertebrates (*NB.* Several species enjoy legal protection.)	
Notable assemblage (terrestrial)	None observed on site.

ITEM	OBSERVATIONS
Notable assemblage (aquatic)	None observed on site.
Crayfish	N/A. No suitable habitat on site. However, please refer to the notes for fish species (above).
Roman snail	None observed on site.
Other molluscs	None observed on site.
Lesser silver water-beetle	No suitable habitat, out of area.
Stag beetle	No suitable habitat.
Other notable beetles	None observed on site. One common species noted during the survey was *Oedemera nobilis*.
Butterflies/moths	Orange-tip and green-veined white butterflies were observed.
Bees, wasps, flies, *etc.*	Bumblebees observed were *Bombus pascuorum* and *B. lucorum* agg. The cuckoo bee *Nomada goodeniana* was observed, and a female *Andrena labiata* was observed visiting germander speedwell flowers at Target Note 5. This is a nationally notable mining bee species.
Dragonflies/damselflies	Two male banded demoiselles were observed.
Other notable entomological spp or groups	None observed on site.
Notable invertebrate habitat	Together, all the remaining fruit trees (apple and damson) throughout the site may be considered as a small 'traditional' orchard. Traditional orchards are a declining habitat now recognised as being of importance for a wide variety of species, as such, they are now recognised as priority habitats with a Biodiversity Action Plan (BAP) in place. One of the principal reasons for their importance is that as fruit trees mature, they typically develop decaying wood still attached to the trunk and main limbs that provide essential niche habitats for the larval development of a wide range of saproxylic invertebrates dependent on dead and diseased standing wood; many of these specialist invertebrates are now scarce and threatened due to loss of habitat. As many of these trees as possible should be retained and the potential for further losses of these trees is why this report has been given a cautionary 'amber' indication because achieving a "No Net Loss to Biodiversity" outcome is uncertain at present without viewing final development proposals for the site.
Invasive Alien Species (IAS) and pathogens (There are an increasing number of these being listed by authorities. More and more are becoming subject to regulatory control within criminal law that carries significant sanctions.)	

ITEM	OBSERVATIONS
IAS (plants) (Wildlife & Countryside Act Article14, Schedule 9.)	*Buddleja* was observed on site.
Weeds Act natives (common ragwort, creeping and spear thistles, curled and broad-leaved docks)	Creeping thistle and broad-leaved dock were observed on site.
Other exotic plants that may cause problems.	None observed on site.
Invasive animals (signal crayfish, killer shrimp, oak processionary moth, harlequin ladybird, zebra mussel, grey squirrel, *etc.*)	Harlequin ladybirds and grey squirrel are highly likely to use the site at times.
Phytophthora ramorum and other serious plant diseases/pathogens (ash dieback, sudden oak death, *etc.*)	No obvious signs noted.
Policy[12]	
Are there any known conflicts with local planning biodiversity policy (if so, please describe)?	No known conflicts.
Are there any known conflicts with national planning biodiversity policy (if so, please describe)?	No known conflicts.
Are there any known conflicts with international biodiversity policy (if so, please describe)?	No known conflicts.

[12] It is important that projects incorporate relevant elements of Green Infrastructure Planning (please see www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/default.aspx)
"Green Infrastructure (GI) is a strategically planned and delivered network of high quality green spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities. Green Infrastructure includes parks, open spaces, playing fields, woodlands, allotments and private gardens."

Ecosystem Services

ECOSYSTEM SERVICES		COMMENT/ACTION REQUIRED IF "YES"
Has the survey revealed, in the context of the proposed project, any significant adverse impacts on the following Ecosystem Services?	No	N/A
Provisioning	–	There will be an impact on nutrient recycling and soil formation due to loss of vegetation.
Regulating	–	There will be an impact on the sequestration of CO_2 due to loss of vegetation.
Cultural	–	Cultural services will be affected as familiar views across the landscape enjoyed by local people are changed.
Supporting	–	Supporting services will not be affected.

Geological Conservation

GEOLOGICAL CONSERVATION (Geodiversity is a material planning consideration)	YES/NO	ACTION REQUIRED IF "YES"
Are there any features of geological importance on the development site?	NO	N/A
Are there any features of geological importance adjacent to the development site or that might be affected by the development (during or post construction)?	YES	Rockhall Quarry SSSI lies within 2km of the site. However, it is considered highly unlikely that the designated site for geology will be affected by any development plans for this site.

A public records search revealed two Statutory Designated Site within a 2km search area.
A public records search revealed nine Non-Statutory Designated Sites within a 2km search area.
A search using www.bto.org revealed the latest information regarding birds of conservation concern.