



Preliminary Ecological Appraisal and Preliminary Roost Assessment

Box Bush House, Bourton-on-the-Water, Gloucestershire GL54 2AN

Posy and Akela Limited

Status	Issue	Name	Date
Draft	1	James Fielding PhD BA (Hons) PGCert (merit) Consultant Ecologist	29/11/2023
Final	2	James Fielding PhD BA (Hons) PGCert (merit) Consultant Ecologist	01/12/2023

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Posy and Akela Limited to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Box Bush House, Bourton-on-the-Water, Gloucestershire GL54 2AN (hereafter referred to as “the site”). The survey was required to inform a planning application for building alterations, extensions and new rear cottage (hereafter referred to as “the proposed development”).

The following is work you will need to commission to comply with planning policy and legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 8 of this report.

Feature	Survey Results Summary	Impact Assessment	Recommendations
<p>Habitats and flora</p>	<p>There are no notable habitats within the site but six priority habitats are present within 2km of the site, the closest being traditional orchard located ~260m from the site.</p> <p>The habitats within the site are common and widespread and have low ecological value, although the cedar on site has good value as a mature tree, and is likely to support nesting birds.</p> <p>The site’s rear garden has been recently cleared. This previously contained small areas of amenity grassland.</p> <p>The site is located within 35m of the River Windrush, and therefore care should be taken to avoid pollution from the works entering the water system.</p>	<p>No impacts to any notable habitats are anticipated due to the small scale and distance of the proposed development from such habitats as well as the urban location of the site with surrounding physical barriers. The majority of works are occurring to the rear of the site, however care should be taken to avoid pollution spreading to the River Windrush, which is located 35m to the south.</p> <p>The development works on site have resulted in the loss of the site’s rear garden. This will have resulted in a net loss in biodiversity at the site.</p>	<p>Best practice measures to minimise the possibility of pollution to the River Windrush must be implemented during construction.</p> <p>Retained trees and hedgerows should be protected in line with the measures outlined in the British Standard "Trees in Relation to Design, Demolition and Construction - Recommendations" (BS 5837) (2012).</p> <p>To compensate for the proposed habitat losses at the site, the following habitat creation measures should be incorporated:</p> <ul style="list-style-type: none"> • recreation of garden areas • native tree and hedgerow planting <p>However, the limited recreation of garden areas included in the current plans is unlikely to fully compensate for the grassland loss. As such, it is likely that off-site mitigation will need to be secured via a credit scheme to ensure biodiversity net gain.</p> <p>The client possesses off-site agricultural land within bourton-on-the-water, and this land can be enhanced to achieve biodiversity net gain. This should be supported and informed by a biodiversity net gain calculation.</p>

<p>Roosting bats (B1)</p>	<p>B1 has a low habitat value for bats. This is due to an absence of suitable internal features, and the presence of a handful of external features which could be suitable for a low number of roosting bats, but will not support maternity or hibernation roosting. The habitat value of the site is somewhat raised by its proximity to the river Windrush, which is an excellent commuting/foraging route for bats, but will be lowered by its urban location.</p>	<p>The proposed development will result in the renovation and extension of this building, and the addition of new dormers and roof repairs. Of these works, only the works to the roof will directly impact on the roosting features identified in this report. These impacts could impact bat roosts present and could cause disturbance, death or injury to bats.</p> <p>The other works could cause indirect impacts via vibrations.</p>	<p>For low habitat value properties, one bat emergence or re-entry survey is typically required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost in the building.</p> <p>However, it is assessed that the works are small in scope, and that the roosting features within the area impacted by the works are sufficiently exposed that they can be fully inspected by an ecologist, and therefore it may be suitable to avoid further survey effort by implementing a precautionary working method approach. This approach is recommended by the 4th edition bat survey good practice guidelines. This precautionary working method will include measures specified in Table 7.</p>
<p>B2</p>	<p>B2 has negligible value for roosting bats due to a lack of potential roost features and its exposed nature.</p>	<p>Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on roosting bats as a result of the demolition of this building.</p>	<p>In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice.</p>
<p>B3</p>	<p>B3 has a low value for bats due to the presence of loose wooden barge boarding around the edges of the garage. However this bargeboarding is clogged with cobwebs.</p>		<p>The only feature present is barge boarding, which is currently clogged by cobwebs and is at a height that it can easily be inspected by an ecologist with an endoscope prior to the commencement of works. Therefore under the new 4th edition bat survey guidelines it is considered suitable to avoid further survey effort by implementing a precautionary working method approach. This precautionary working method will include measures specified in Table 7.</p>
<p>Foraging and commuting bats</p>	<p>The hedgerow on site and the nearby river windrush could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.</p>	<p>The proposed development does not involve the loss of any significant areas of habitat.</p> <p>The proposed development will not include any significant changes to lighting which could impact the river windrush, however care should be taken that the construction process does not involve the use of any such lighting, as increased light could deter bats from using this watercourse for commuting and foraging.</p>	<p>A low impact lighting strategy will be adopted for the site during and post-development, which will include measures specified in Table 7.</p>

<p>Riparian Mammals</p>	<p>The site itself contains no features suitable for riparian mammals. However the site is located close to the river Windrush, which supports otters and water voles. The site is separated from the river by a road, and the site itself is urban, reducing the likelihood that riparian mammals will access the site. However indirect impacts to the river could in turn impact otters or water voles, and steps should be taken to avoid this.</p>	<p>The proposed development will not result in the loss of any riparian habitats. However, due to the presence of the watercourse within close proximity of the site, indirect effects such as pollution could occur during construction.</p>	<p>Owing to the nature of the proposed development and the low potential for impacts to otter, further otter surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including measures specified in Table 7.</p>
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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Posy and Akela Limited to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Box Bush House, Bourton-on-the-Water, Gloucestershire GL54 2AN (hereafter referred to as “the site”). The survey was required to inform a planning application for building alterations, extensions and new rear cottage (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. The aim of the PRA was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how bats could use the site for roosting, foraging or commuting.

No previous ecology reports have been produced for this site by Arbtech Consulting Ltd or, to the author’s knowledge, by any other consultancy.

1.2 Site Location and Landscape Context

The site is located at National Grid Reference SP 16790 20710 and has an area of approximately 0.1ha comprising one building and associated garages with an area of hardstanding, a small segment of hedgerow, and a small area of grass and a mature cedar tree at the front of the site. It is surrounded by the village of Bourton-on-the-Water with a road and the River Windrush to the south and cafes and restaurants to the west. The wider landscape comprises Greystone Farm Nature Reserve, several lakes and agricultural fields. A site location plan is provided in Appendix 2.

1.3 Scope of the Report

The PEA element of this report describes the baseline ecological conditions at the site, evaluates habitats within the survey area in the context of the wider environment and describes the suitability of those habitats for notable or protected species. It identifies possible ecological constraints as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

The PRA element of this report provides a description of all features suitable for roosting, foraging and commuting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on possible

constraints to the proposed development as a result of bats and summarises the requirements for any further surveys to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken to record baseline information on the site and surrounding area including habitat types and their suitability for notable or protected species, including roosting bats.
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Potential impacts on features of value, as a result of the proposed development, have been identified.
- Recommendations for further surveys and mitigation have been made.
- Opportunities for the enhancement of the site for biodiversity have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a review of the magic.gov.uk database for statutory designated sites within a 2km radius of the site. Landscape value and the presence of notable habitats as well as granted European Protected Species Licence (EPSL) and notable species records held on magic.gov.uk database has also been considered where these are within influencing distance of the site.

2.2 Field Survey

The survey was undertaken by Dr James Fielding PhD BA (Hons), Consultant Ecologist (Natural England Bat License Number 2022-10412-CL17-BAT), PGCERT in ecological survey techniques, qualifying CIEEM member, on 29th November 2023.

Preliminary Ecological Appraisal

An extended habitat survey was undertaken, following the methodology set out in The UK Habitat Classification Habitat Definitions Version 2.0 (The UK Habitat Classification Working Group, July 2023). All land parcels are described and mapped and, where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management. Botanical species lists were compiled with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).

For ease of reading, scientific names are omitted from this report for widespread, ubiquitous and well-known species. Scientific names are only included where deemed necessary in conveying correct information to the reader, for example where common names differ regionally or in specialised, notable, unusual or challenging taxa, or if there is any ambiguity in identification (e.g where a species can only be identified to genus level).

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species.

Preliminary Roost Assessment

The PRA focussed on three built structures which will be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat.

For any surveyed buildings:

A non-intrusive visual appraisal was undertaken from the ground, using binoculars to inspect the external features of the buildings for features which bats could use for roosting, including access or egress points and for signs of bat use including droppings, scratch marks, insect remains and urine smear marks. An internal inspection of the buildings was also made, including the

living areas and any accessible roof spaces, using a torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space

Suitability Assessment

Built structures were categorised according to the likelihood of bats being present and the types of roost that the identified features could support. This is summarised in Table 1 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats

Classification	Feature of building and its context
High	Buildings or structures with features of particular significance for larger numbers of roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data). Buildings with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.
Moderate	Buildings or structures with one or more features suitable for more regular roosting due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation value such as maternity or hibernation roosts. Continuous habitat connected to the wider landscape which could be used by bats for commuting such as lines of trees, linked gardens. Foraging habitat in the surrounding area such as trees, scrub, grassland or water.
Low	Buildings or structures with one or more features suitable for use sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators. Habitat suitable for foraging in close proximity, but largely isolated in the landscape. Or an isolated site not connected by prominent linear features.
Negligible	Unsuitable for use by bats.

2.3 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

A limitation to this survey is that it is part-retrospective. Some internal and external site works had already been undertaken as of the time of the survey. Part of this work has been conducted under previous planning permission (the removal of rear garden trees under ref 23/02429/TCONR). As such, the PRA and PEA surveys are partially retrospective. In regards to B1, the roofline remains untouched, but most of the interior has been stripped and this may have caused impacts on any species present. However as there is only one small, low value loft

space within the interior of B1, it is considered unlikely that any bats were impacted by the works.

This is a limitation for the preliminary ecological appraisal of on-site habitats, as the habitats to the northern side of the site have been completely cleared. An attempt has been made with google maps and other sources to estimate the previous habitat of this area. It is suggested that any biodiversity enhancements or biodiversity net gain calculations use this retrospective baseline for future calculations.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Designated Sites

Details of any statutory designated sites within a 2km radius of the site, including their reasons for notification, are provided in Table 2 below. The presence of non-statutory designated sites within 2km cannot be fully established without biological records data from Gloucestershire Environmental Records Centre.

The site lies within the impact risk zone for Salmonsbury Meadow Site of Scientific Interest. Proposed development type is not listed as a possible high risk with regard to this designation.

Table 2: Statutory designated sites within 2km radius of the site

Designated site name	Distance from site	Reasons for notification from Natural England
Cotswolds National Landscape	Site is within this designation	The underlying Jurassic limestone gives the Cotswolds National Landscape its distinctive character – from the famous beauty of the local architecture, to the dry stone walls criss-crossing farmed fields and wildflower meadows. The Cotswolds are nationally important for their rare limestone grassland habitat and for ancient beechwoods with rich flora – around half the country's flower-rich Jurassic limestone grassland is right here.
Salmonsbury Meadows SSSI	~1120m to the east	The site consists of eleven meadows on alluvium and Lower Lias clays near the confluence of the Rivers Eye and Dikler north-east of Bourton-on-the-Water. It is one of the richest and largest traditional meadow systems remaining in the Cotswolds.

3.2 Field Survey Results

The results of the field survey are illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 3.

Table 3: Weather conditions during the survey

Date:	29/11/2023
Temperature	4°C
Humidity	76%
Cloud Cover	30%
Wind	15mph
Rain	None

Habitats and Flora


The following habitats are present within and adjacent to the site:



- u1 build-up areas and gardens
- u1b5 buildings
- h2b non-native hedgerow

A description and photographs of each habitat are provided in Table 4.

No protected or non-native invasive plant species (as listed under Schedules 8 or 9 of the Wildlife and Countryside Act 1981) were identified on the site.

Table 4: Description and photographs of habitats within and adjacent to the site

Habitat type	Habitat description	Photograph
<p>u1 built-up areas and gardens</p> <ul style="list-style-type: none"> - 32 scattered trees - 827 garden 	<p>The front garden of the site features a small, isolated garden surrounded by a low stone wall. This garden contains typical amenity grassland, featuring perennial ryegrass (A), white clover (F) and occasional daisy, dandelion and other species.</p> <p>A large mature cedar tree is present in the middle of this garden area.</p>	

<p>u1b5 buildings</p>	<p>The site features a large residential dwelling, a small garage and an open awning. These structures are discussed in more detail in the PRA section, below.</p>	
<p>u1c artificial unvegetated unsealed surface</p>	<p>The site formerly contained a rear garden area with a small area of amenity grassland, which has been cleared, leaving a construction site of unsealed bare ground. Images from google maps and the design and access statement suggest that this contained a small area of amenity garden grassland, a path, and several mature trees along the western boundary. These trees have been removed under a granted planning permission (ref 23/02429/TCONR). It is likely therefore that this are would be previously classed as u1 built-up areas and gardens.</p>	

<p>h2b non-native hedgerow</p>	<p>A small section of coniferous hedgerow is present at the north-western boundary of the site. The hedgerow is uneven, likely due to the previous presence of three trees at the western boundary.</p>	
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Fauna



Bats



The results of the PRA are provided in Table 5. No evidence of roosting bats was identified during the survey.



Table 5: Assessment of the suitability of the site for bats



Feature	Description	Photographs
<p>Historical records</p>	<p>One EPSL within 2km for the destruction of a resting place of lesser horseshoe and brown long-eared bats, ~1600m to the north (EPSM2011-3243).</p>	



<p>Bat foraging and commuting habitat</p>	<p>The site itself contains a small section of hedgerow and a mature cedar tree, which will offer minor opportunities for bats and birds to forage. The site is located within 35m of the river windrush, which will offer an excellent foraging and commuting route for bats within the local landscape.</p>	
<p>B1 - overview</p>	<p>B1 is a historic 17th century building, which is a grade II listed building. It has a complex structure, due to multiple extensions, sub-structures and modifications. The broad structure is “U” shaped, with multiple pitched roofs surrounding a central flat roof above a wooden single-storey structure in the centre of the building.</p> <p>Internal works are currently being conducted in the building, which has resulted in internal stripping and modifications.</p> <p>The roofs of B1 are highly variable, with the majority of the roof clad in modern clay roof tiles, with occasional sections such as the southern elevation and small areas of the north-western apartment building, which feature historic stone tiles.</p> <p>The walls of B1 are made of mortared stone, which is in generally good condition. There are wooden framed windows and doors on multiple elevations, which are in reasonable condition.</p>	


<p>B1 – eastern wing</p>	<p>The eastern wing of B1 features six dormer windows. Four of these are clad in concrete hanging tiles, with pitched roofs clad in clay roof tiles. These appear in reasonable condition with no gaps or cracks which are suitable for bats. The other two dormers feature flat roofs and have no cladding.</p> <p>The roof tiles on the eastern wing of B1 appear heavily weathered and moss covered, but are otherwise in good condition, with no significant gaps or cracks that would be suitable for crevice dwelling bats. Occasional damaged tiles are visible, but these are otherwise tightly fitted and no suitable gaps for bats are visible in the damaged areas.</p>	
<p>B1 – single storey central section</p>	<p>There is a wooden extension filling the centre of the “U” shape of B1. This has a bitumen roof. The northern elevation of this is clad in wooden boards, which are in poor condition. The overlapping boards could offer some minor roosting features to crevice dwelling bats, although no suitable cavity space is present beneath and as such the habitat value is limited.</p>	

<p>B1 – central roof, view from the north-west</p>	<p>There is a large flat roof in the centre of the “U” shape of B1. This bitumen roof appears in reasonable condition, with two skylights. There are no roosting features on this roof.</p> <p>Visible in this photo is the variable nature of the roofs on site: the majority are clad in clay tiles, however several small sections of roof are clad in historic stone tiles which are generally loosely fitted and could offer some limited roosting value for crevice dwelling bats. A missing tile (circled in red) is present on the roof of the north-western wing of B1.</p>	
<p>B1 – north-western elevation</p>	<p>The north-western section of B1 features a separate living space/apartment with stairs accessing it on the north-western side. A small single-storey extension is present on the northern gable end, which features a sloped roof clad in clay roof tiles. These tiles are lifted in one location along the eastern edge, which could offer a minor roosting feature for a crevice dwelling bat. The western side of the roof of this elevation is in generally good condition, with one missing roof tile (circled in red in the photo above) which could offer a roosting feature for a crevice dwelling bat.</p> <p>Two gaps are present in the stonework of the side of this wing of B1 (circled in yellow, shown in more detail below).</p>	


<p>B1 – eastern wall of north-western wing</p>	<p>Two gaps are present in the stonework near a drainpipe on the eastern side of the north-western wing. The lower gap is filled with wiring, and is therefore too obstructed for bats to utilise. The second gap is large and relatively exposed. Bats could utilise this for roosting, but it is likely too exposed for long term roosting, and too small for large numbers of bats to utilise.</p>	
<p>B1- roof tile closeup of north-western wing</p>	<p>Several sections of the roof of B1 are clad in historic stone tiles, which feature occasional loose tiles which could provide limited roosting space to crevice dwelling bats.</p>	


<p>B1 – southern elevation</p>	<p>The southern elevation of B1 faces the main street of Bourton-on-the-Water. It features three dormer windows with hipped roofs, clad in historic stone tiles. These stone roof tiles are heavily weathered with large amounts of moss, however they otherwise appear in moderately good condition, with no loose or missing tiles which could offer roosting value to bats.</p>	
<p>B1 – southern and eastern elevations</p>	<p>The eastern gable end of the southern section of B1 appears in good condition, with no bat roosting features.</p>	

<p>B1 – interior</p>	<p>The interior of B1 features only one sealed loft space, a small crawl space within the southern section of B1. This is lined with fibrewood boards and mineral wool insulation, and has no gaps suitable for bats to access the space.</p>	
<p>B1 – interior</p>	<p>The majority of the interiors of B1 have been converted into habitable space, with no remaining loft spaces. The ceilings are typically vaulted or plastered, although in several areas the loft floor has simply been removed, exposing timber beams above. These exposed former loft spaces are clogged with cobwebs, indicating no recent use by bats. The roofs appear intact, with no access points for bats.</p>	

<p>B1</p>	<p>Much of the interior of B1 has been stripped. No bat roosting features could be found on the ground floor, but this report cannot guarantee none were present prior to the internal works. However given the prior usage of the site (as a model railway store) and the exposed nature of the majority of the roof voids prior to the strip, it is not considered likely that significant features were present prior to the strip.</p>	
<p>B1 – suitability assessment</p>	<p>B1 has a low suitability for bats. A handful of rooftile gaps are present on the northern elevation, and one low-suitability stonework gap is present, in addition to wooden cladding which could have limited suitability for bats on the northern elevation. However, these features are generally sub-optimal for bats, and will only support crevice dwelling bats. Only one interior loft space remains within the structure, which has no value for bats, and the site as a whole has no value for void dwelling bats. The value of the site is raised by the site’s proximity to the river Windrush, but the northern-facing nature of most of the features and its urban location will also lower their suitability.</p> <p>The majority of identified features either will not be impacted by the works, or are of a height and accessibility such that they can be inspected by an ecologist with an endoscope prior to commencement.</p>	

<p>B2</p>	<p>B2 is a free-standing carport in the rear garden of the site. It is covered with a polymer roof, with nine wooden support beams. It has no suitability for bats, due to its exposed nature and lack of insulation. It has a negligible suitability for bats.</p>	
<p>B3 – eastern elevation</p>	<p>B3 is a garage in the rear of the site, which has a flat roof clad in bitumen felt which appears to be in good condition. The sides are made of concrete breezeblocks, and the front garage doors are metal. There are wooden bargeboards around the eaves. Interior access was not possible.</p>	

<p>B3 – western elevation</p>	<p>The wooden bargeboards around the sides of B3 are slightly lifted, providing a small gap between the concrete brickwork and the wooden boards which bats could utilize. However an inspection of these gaps found them to be heavily clogged with cobwebs, indicating no recent activity from bats.</p>	
<p>B3 – suitability assessment</p>	<p>B3 has a low suitability for bats, due to the presence of a thin gap underneath the bargeboarding which runs around the sides of the structure. However, it is noted that this bargeboard gap is clogged with cobwebs along its entire length. Moreover, it is at a height where it can be easily inspected by an ecologist with an endoscope prior to the works to ensure the absence of bats.</p>	

<p>T1 – suitability assessment</p>	<p>T1 is large mature cedar to the south of B1, situated within the small front garden by the main high street of Bourton-on-the-Water. It will provide excellent habitat for birds, which could nest in its upper branches. However no bat roosting features could be seen, and it is assessed to have a negligible value for bats.</p>	
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Other Species

An assessment of the suitability of the site for protected or notable species is provided in Table 6.

Table 6: Assessment of the suitability of the site for protected or notable species

Species	Assessment of suitability
Amphibians	There is one EPSP within 2km for GCN (2019-40734-EPS-MIT) for damage and destruction of a resting place, ~1200m to the north. Connectivity to the site is heavily restricted by the urban surroundings of the site, with features such as the River Windrush, urban roads, buildings and walls severely reducing the connectivity of amphibians to the site. Amphibians are therefore considered unlikely to be found within the development area. The site itself contains no suitable habitat for amphibians: the rear garden has been cleared, and prior to that both the rear garden and front garden have short cropped grassland which will not offer suitable levels of cover or foraging for amphibians.
Reptiles	No evidence of reptiles was found on site. The site has no suitable habitat for reptiles, and reptiles are unlikely to be able to connect to the site due to the urban surroundings of the site.
Badgers	No evidence of badgers was found on site or within publicly accessible areas within 30m of the site.
Hedgehog	No evidence of hedgehogs was found on the site. The site contains little habitat suitable for hedgehogs, with only the coniferous hedgerow along the western boundary offering some limited cover for hedgehogs.

Riparian mammals	The site itself contains no suitable habitats for riparian mammals, and offers no suitable opportunities for holt construction or other activities. The site is located within 35m of the River Windrush, which is known to support otters and water voles. These species are likely to pass through bourton-on-the-water, but this is likely to be transitory due to the urban nature of the site and its surroundings. Combined with the barriers (a road) between the site and the windrush, this means it is unlikely that riparian mammals will be found on the site itself. The most likely pathway for impacts upon riparian mammals is through accidental pollution of the river windrush during site works.
Birds	B1, B2 and B3 contain no suitable habitat for nesting birds. The site's garden will offer only minimal habitat for birds, with only the cedar tree at the front of the site offering significant nesting value to birds.
Invertebrates	The site offers no significant value to invertebrates. The small area of grassland and the cedar tree at the front of the site will support a limit range of typical garden invertebrates.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Likelihood of the Presence of Protected Species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Where this report supports a planning application, the ecological interest of the study area (i.e. the area covered by the desk study and field survey) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity.

4.2 Evaluation

Taking the desk study and field survey results into account, Table 7 presents an evaluation of the ecological value of the site and also details any ecological constraints identified in relation to the proposed development which will comprise for building alterations, extensions and new rear cottage.

Table 7: Evaluation of the site and any ecological constraints

Feature	Survey Results Summary	Impact Assessment	Recommendations	Biodiversity Enhancement Opportunities ¹
Designated sites	<p>There are two statutory sites within 2km of the site, the closest being the Cotswolds National Landscape that the site lies within.</p> <p>The site lies within the impact risk zone for Salmonsbury Meadow SSSI and proposed development type is not listed as a possible high risk for this designation.</p> <p>Pp1</p>	<p>No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known) as well as the urban location of the site with surrounding physical barriers.</p>	None.	None.

¹ The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021).

<p>Habitats and flora</p>	<p>There are no notable habitats within the site but six priority habitats are present within 2km of the site, the closest being traditional orchard located ~260m from the site.</p> <p>The habitats within the site are common and widespread and have low ecological value, although the cedar on site has good value as a mature tree, and is likely to support nesting birds.</p> <p>The site's rear garden has been recently cleared. This previously contained small areas of amenity grassland.</p> <p>The site is located within 35m of the River Windrush, and therefore care should be taken to avoid pollution from the works entering the water system.</p>	<p>No impacts to any notable habitats are anticipated due to the small scale and distance of the proposed development from such habitats as well as the urban location of the site with surrounding physical barriers. The majority of works are occurring to the rear of the site, however care should be taken to avoid pollution spreading to the River Windrush, which is located 35m to the south.</p> <p>The development works on site have resulted in the loss of the site's rear garden. This will have resulted in a net loss in biodiversity at the site.</p>	<p>Best practice measures to minimise the possibility of pollution to the River Windrush must be implemented during construction.</p> <p>Retained trees and hedgerows should be protected in line with the measures outlined in the British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012).</p> <p>To compensate for the proposed habitat losses at the site, the following habitat creation measures should be incorporated:</p> <ul style="list-style-type: none"> • recreation of garden areas • native tree and hedgerow planting <p>However, the limited recreation of garden areas included in the current plans is unlikely to fully compensate for the grassland loss. As such, it is likely that off-site mitigation will need to be secured via a credit scheme to ensure biodiversity net gain.</p> <p>The client possesses off-site agricultural land within bourton-on-the-water, and this land can be enhanced to achieve biodiversity net gain. This should be supported and informed by a biodiversity net gain calculation.</p>	<p>The following habitat creation and enhancement opportunities could be incorporated into the proposed development:</p> <ul style="list-style-type: none"> • native tree and hedgerow planting <p>Species-specific enhancement opportunities are detailed later in this table.</p>
<p>Amphibians</p>	<p>One granted EPSL is present in the local landscape for amphibians, ~1200m from the site. The site itself contains no suitable habitat for amphibians, and the immediate surroundings of the site are heavily urban, with roads, buildings and walls which will prove barriers to amphibian connectivity to the site. The River Windrush to the south will also provide a barrier</p>	<p>No impacts are anticipated on great crested newt, as a result of the proposed development as this species is likely absent from the site.</p>	<p>None.</p>	<p>None.</p>

	to connectivity. It is assessed that it is highly unlikely that amphibians such as great crested newts could be found on site.			
Reptiles	The site contains no suitable habitat for reptiles, and the urban surroundings of the site will provide significant barriers to connectivity to the surrounding landscape. Therefore it is assessed that it is unlikely that reptiles will be encountered on site.	No impacts are anticipated on reptiles as a result of the proposed development.	None.	None.
Roosting bats (B1)	B1 has a low habitat value for bats. This is due to an absence of suitable internal features, and the presence of a handful of external features which could be suitable for a low number of roosting bats, but will not support maternity or hibernation roosting. The habitat value of the site is somewhat raised by its proximity to the river Windrush, which is an excellent commuting/foraging route for bats, but will be lowered by its urban location.	<p>The proposed development will result in the renovation and extension of this building, and the addition of new dormers and roof repairs. Of these works, only the works to the roof will directly impact on the roosting features identified in this report. These impacts could impact bat roosts present and could cause disturbance, death or injury to bats.</p> <p>The other works could cause indirect impacts via vibrations.</p>	<p>For low habitat value properties, one bat emergence or re-entry survey is typically required during the active bat season (optimal May to August, suboptimal September) to confirm presence or likely-absence of a bat roost in the building. Infra-red cameras should be used as an aid. Four surveyors are required to provide full coverage of the building. If the absence of a bat roost cannot be determined during the first visit, then further surveys will be required. If bat roosts are confirmed in the building two additional surveys may be required to characterise the roost and to inform an EPSL application to Natural England. Surveys should be a minimum of two weeks apart. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission.</p> <p>However, it is assessed that the works are small in scope, and that the roosting features within the area impacted by the works are sufficiently exposed that they can be fully inspected by an ecologist, and therefore it may be suitable to avoid further survey effort by implementing a precautionary working</p>	<p>The installation of 2 bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be installed on the mature cedar tree and at the eaves of the building. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. The bat boxes will be a specification suitable for crevice dwellers such as Beaumaris bat boxes, RSPB burford bat boxes or a similar alternative brand.</p>

			<p>method approach. This approach is recommended by the 4th edition bat survey good practice guidelines. This precautionary working method should include the following:</p> <ul style="list-style-type: none"> • The provision of a toolbox talk to contractors by a qualified ecologist to inform them of the potential presence of bats. • A pre-commencement inspection of any roost features by a qualified ecologist using a torch and an endoscope (this may be via ladders or scaffolding) • The removal of bat roost features by hand under the supervision of a qualified ecologist (where it is not possible conclude absence of bats during the pre-commencement inspection). • Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features. • Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features. 	
B2	B2 has negligible value for roosting bats due to a lack of potential roost features and its exposed nature.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on roosting bats as a result of the demolition of this building.	In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice.	None.
B3	B3 has a low value for bats due to the presence of loose wooden barge boarding around the edges of the garage. However this bargeboarding is clogged with cobwebs.	The proposed works will involve the demolition of this building, which could disturb any bats present, destroy any bat roosts present and cause death or destruction to bats, if present.	The only feature present is barge boarding, which is currently clogged by cobwebs and is at a height that it can easily be inspected by an ecologist with an endoscope prior to the commencement of works. Therefore under the new 4 th edition bat survey guidelines it is considered suitable to avoid further survey effort by implementing a precautionary working method approach. This precautionary working method should include the following:	The installation of 1 bat box at the site will provide additional roosting habitat for bats. The bat box will be installed on the new cottage. Bat boxes should be positioned 3-5m above ground level facing in a

			<ul style="list-style-type: none"> • The provision of a toolbox talk to contractors by a qualified ecologist to inform them of the potential presence of bats. • A pre-commencement inspection of any roost features by a qualified ecologist using a torch and an endoscope (this may be via ladders or scaffolding) • The removal of bat roost features by hand under the supervision of a qualified ecologist (where it is not possible conclude absence of bats during the pre-commencement inspection). • Avoiding the use of unnecessary lighting, particularly at night, or implementing a low impact lighting strategy to avoid illumination of retained or newly created roosts or roost features. • Avoiding excessive noise or vibration disturbance e.g. from power tools or radios, within close proximity of retained or newly created roosts or roost features. 	<p>south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. The bat boxes will be a specification suitable for crevice dwellers such as Beaumaris bat boxes, RSPB burford bat boxes or a similar alternative brand.</p>
<p>Foraging and commuting bats</p>	<p>The hedgerow on site and the nearby river Windrush could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.</p>	<p>The proposed development does not involve the loss of any significant areas of habitat.</p> <p>The proposed development will not include any significant changes to lighting which could impact the river Windrush, however care should be taken that the construction process does not involve the use of any such lighting, as increased light could deter bats from using this watercourse for commuting and foraging.</p>	<p>A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures:</p> <ul style="list-style-type: none"> • Light spill on to the river windrush should be avoided. • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. 	<p>None.</p>

			<ul style="list-style-type: none"> • Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. • External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. • Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available. 	
Badger	The site has no suitable habitat for badgers, and no evidence of badgers was found on site or within 30m of the site.	No impacts are anticipated on badgers as a result of the proposed development.	None.	None.
Hedgehog	The site contains no suitable habitat for hedgehogs.	No impacts are anticipated on hedgehogs as a result of the proposed development.	None.	None.
Riparian Mammals	The site itself contains no features suitable for riparian mammals. However the site is located close to the river Windrush, which supports otters and water voles. The site is separated from the river by a road, and the site itself is urban, reducing the likelihood that riparian mammals will access the site. However indirect impacts to the river could in turn impact	The proposed development will not result in the loss of any riparian habitats. However, due to the presence of the watercourse within close proximity of the site, indirect effects such as pollution could occur during construction.	Owing to the nature of the proposed development and the low potential for impacts to otter, further otter surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures: <ul style="list-style-type: none"> • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to the 	None.

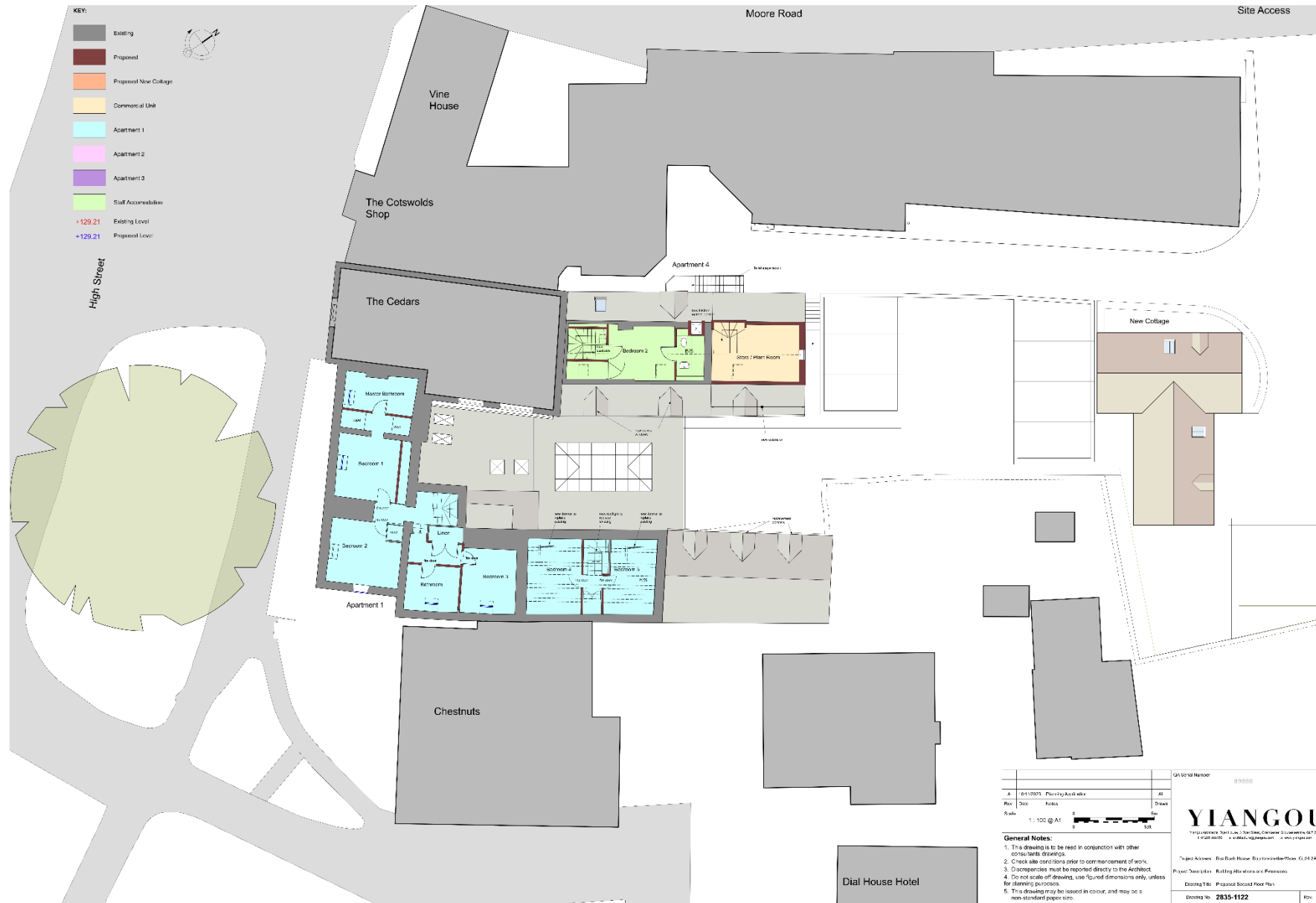
	otters or water voles, and steps should be taken to avoid this.		<p>watercourse and any retained habitats which otters could use.</p> <ul style="list-style-type: none"> • Best practice pollution prevention measures will be implemented to minimise impacts to the watercourse and any retained habitats that otters could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. 	
Birds	No evidence of bird nesting was found on site. B1-B3 have no value for nesting birds. T1, the cedar tree, could support nesting birds within its crown.	No impacts are anticipated on nesting birds as a result of the proposed development.	None.	None.
Invertebrates	The site contains no suitable habitat for invertebrates.	No impacts are anticipated on notable species or populations of invertebrates as a result of the proposed development.	None.	None.

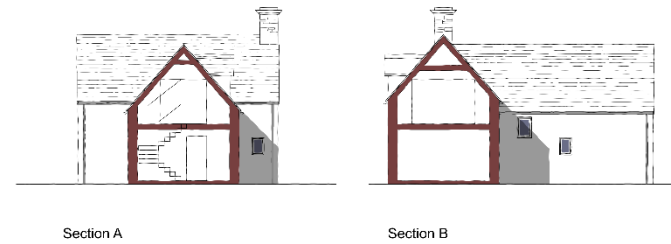
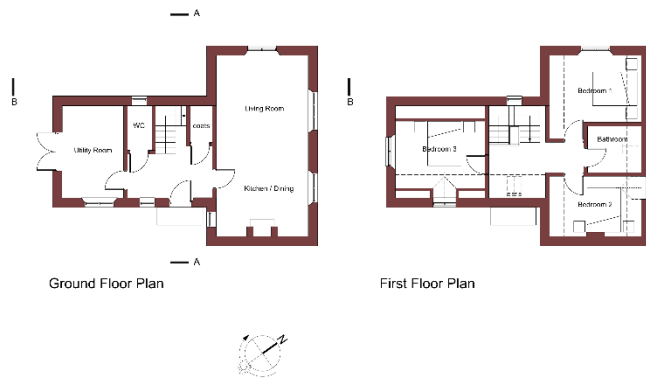
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Materials Key

- ① Coloured slate roofing
- ② Coursed rubble Cotswold Stone walling
- ③ Painted double glazed sash casement windows with ashlar stone surrounds
- ④ Painted Cast Iron rainwater goods
- ⑤ Painted double glazed sash casement dormer window with traditional fine render panels

A		15/11/2023		Planning Application		AL
Rev	Date	Notes				Drawn
Scale	1:100 @ A1		0 5m 10m		15m	

General Notes:

- This drawing is to be read in conjunction with other consultants drawings.
- Check site conditions prior to commencement of work.
- Discrepancies must be reported directly to the Architect.

DA Site Number: 89918

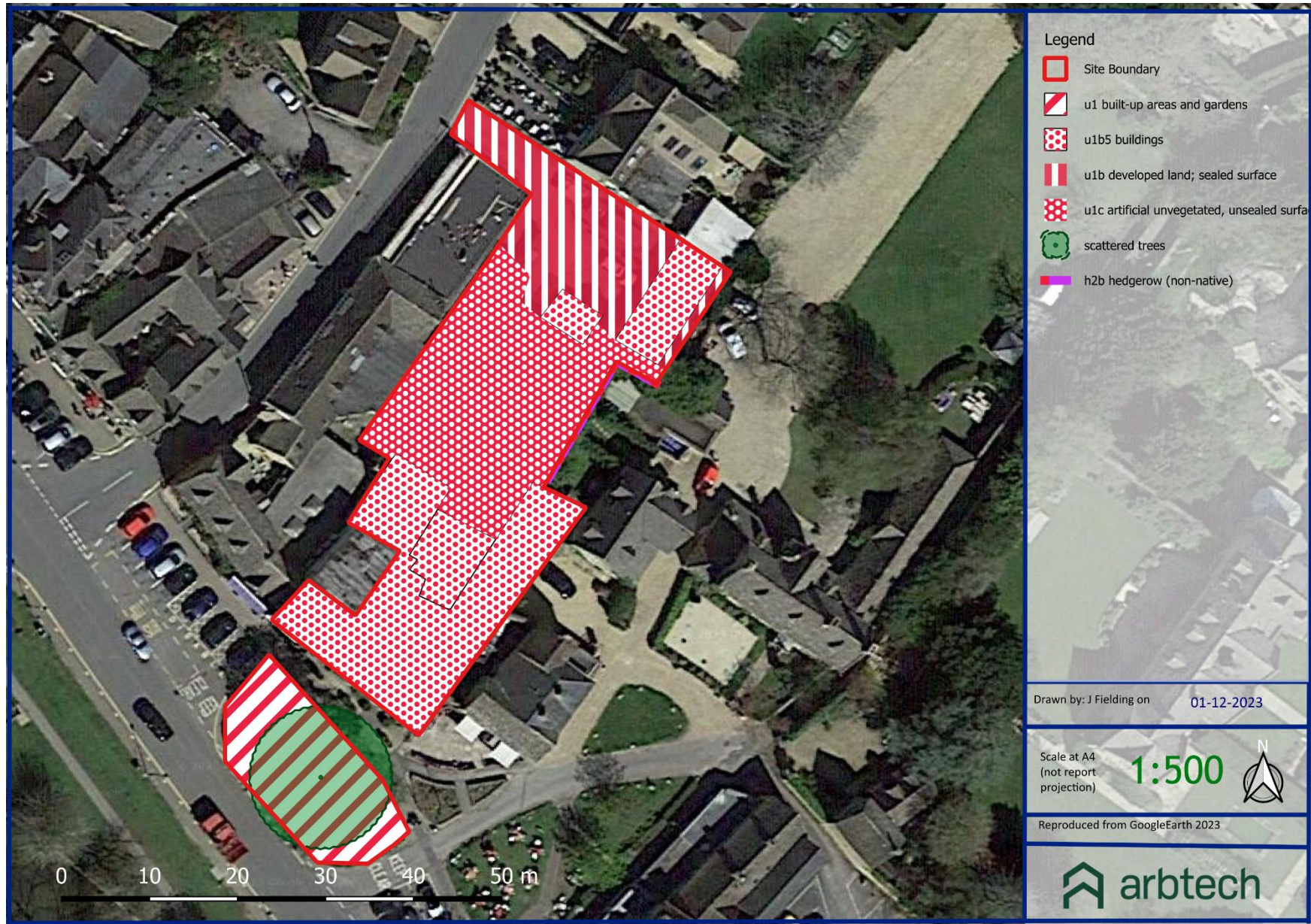
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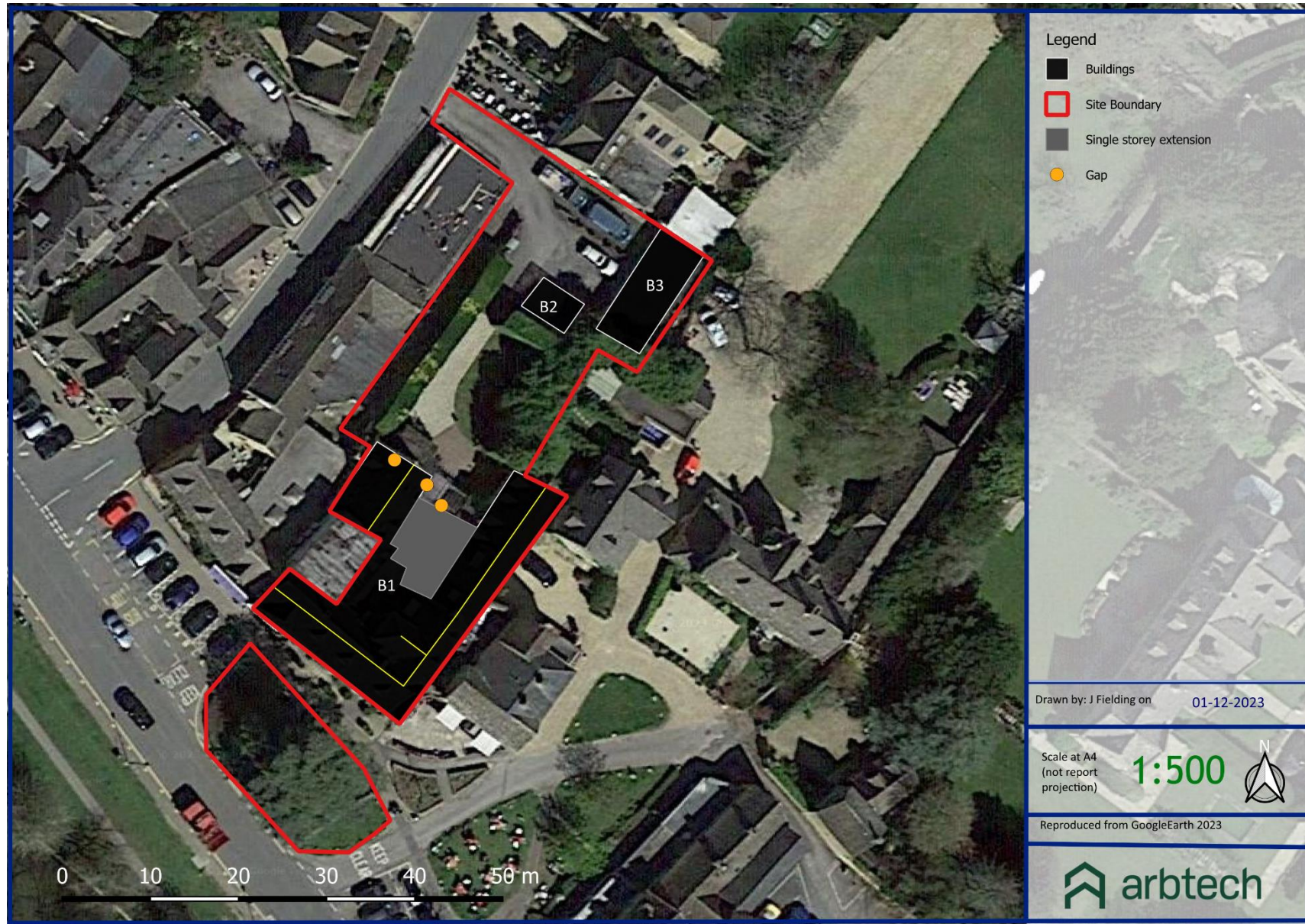
Appendix 2: Site Location Plan



Appendix 3a: Habitat Survey Plan



Appendix 3b: PRA Plan



Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds (the Wild Birds Directive) respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as Sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many Annex II species): a strict protection regime must be applied across their entire natural range, both within and outside Natura 2000 sites.

Annex V species (over 90): their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

The Conservation of Habitats and Species Regulations 2017 (as amended) form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12 nautical miles in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*”.

However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites.

The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) aims to promote the maintenance of biodiversity by requiring the Secretary of State to take measures to maintain or restore wild species listed within the Regulations at a favourable conservation status.

The Regulations make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4. However, these actions can be made lawful through the granting of licenses by the appropriate authorities. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on wild population of the species concerned.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A development licence will be required from the relevant countryside agency (i.e. Natural England) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agencies to define what would constitute a licensable activity. It is not possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and are commonly referred to as “Schedule 1” birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

Works should be planned to avoid the possibility of killing or injuring any wild bird or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Amphibians and Reptiles

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species

- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water Voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSL. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Hazel Dormice

Hazel dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)

- Intentional or reckless obstruction of access to any place of shelter or protection

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require a European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White Clawed Crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

The relevant countryside agency (i.e. Natural England) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation Afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally picking, uprooting or destruction of any wild Schedule 8 species
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
 - Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
 - Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) will be required from the relevant countryside agency (i.e. Natural England) for works which are likely to affect species of plants listed on Schedule 5 of the Conservation of Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any landowner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY***Environment Act 2021***

The Environment Act 2021 (EA 2021) received Royal Assent on 9 November 2021 and is expected to become fully mandated within the next couple of years. The Act principally creates a post Brexit framework to protect and enhance the natural environment. Through amendments to the Town and Country Planning Act 1990, the Act will require all planning permissions in England (subject to exemptions which is likely to include householder applications) to be granted subject to a new general pre-commencement condition that requires approval of a biodiversity net gain plan. This will ensure the delivery of a minimum of 10% measurable biodiversity net gain. The principal tool to calculate this will be the Defra Biodiversity 3.0 Metric. Works to enhance habitats can be carried out either onsite or offsite or through the purchase of 'biodiversity credits' from the Secretary of State. However, this flexibility may be removed (subject to regulations) if the onsite habitat is 'irreplaceable'. Both onsite and offsite enhancements must be maintained for at least 30 years after completion of a development (which period may be amended).

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

LOCAL PLANNING POLICY***Cotswold District Local Plan (August 2018)***

The plan can be viewed here: <https://www.cotswold.gov.uk/media/k2kjqvq3b/cotswold-district-local-plan-2011-2031-adopted-3-august-2018-web-version.pdf>

The following planning policies have implications in relation to biodiversity and the proposed development:

EN8 BIODIVERSITY AND GEODIVERSITY: FEATURES, HABITATS AND SPECIES

- 1. Development will be permitted that conserves and enhances biodiversity and geodiversity, providing net gains where possible.
- 2. Proposals that would result in significant habitat fragmentation and loss of ecological connectivity will not be permitted.
- 3. Proposals that reverse habitat fragmentation and promote creation, restoration and beneficial management of ecological networks, habitats and features will be permitted, particularly in areas subject to landscape-scale biodiversity initiatives. Developer contributions may be sought in this regard.
- 4. Proposals that would result in the loss or deterioration of irreplaceable habitats and resources, or which are likely to have an adverse effect on internationally protected species, will not be permitted.
- 5. Development with a detrimental impact on other protected species and species and habitats “of principal importance for the purpose of conserving biodiversity” (42) will not be permitted unless adequate provision can be made to ensure the conservation of the species or habitat.

Gloucestershire Biodiversity Action Plan

The BAP can be viewed here: https://www.gloucestershirenature.org.uk/_files/ugd/2d7e8a_96b40a094d23477c8c7efa96a838f655.pdf

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to ‘local populations’ of EPS and not individuals/site populations.