Preliminary Ecological Appraisal Report

The Tallet, Nupdown Lane, Oldbury-on-Severn, South Gloucestershire, BS35 1RS

Client	Emma Dawson
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Document History

Version	Date Issued	Revision
1	24/05/2021	Issued to the client.
2	30/05/2022	Report updated to take amended site boundary into account.

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The summary of wildlife legislation provided is for general guidance only and does not in any way provide legal opinion or a definitive statement of the law. For detailed information, the legislation itself should be reviewed and a legal professional consulted.

Smart Ecology cannot be held liable for any information provided by third parties which is referenced within this document. The evidence in this document is based upon the field survey(s) detailed. Due to the changing nature of ecology the list of species present cannot be considered comprehensive and Smart Ecology cannot guarantee that other protected/notable species and habitats are not present.

The ecology of a site is constantly changing and therefore the information provided in this document is only relevant at the time of survey. **If it has been over 12 months since this survey was undertaken advice should be sought on whether an updated survey is necessary.**

The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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Non-Technical Summary

Purpose of Report	Smart Ecology was commissioned by Emma Dawson on behalf of her family to undertake a Preliminary Ecological Appraisal of a site at The Tallet, Nupdown Lane, Oldbury-on-Severn, South Gloucestershire, BS35 1RS. The purpose of the appraisal was to inform a planning application for the conversion of a building into a residential dwelling.
Methodology	A desk study and an Extended Phase 1 habitat survey were undertaken.

Ecological Feature	**Potential Impacts without Mitigation** (refer to Section 5)	**Required Surveys/Mitigation** (refer to Sections 6.1 & 6.2)
Scattered trees	Felling of trees and damage to retained trees during works. Removal of trees would result in a reduction in the biodiversity value of the site.	Retain trees wherever possible, and protect retained trees during works. Plant new native trees on the site to compensate for any felled.
Bats	Destruction of a confirmed roost in the building and potential for killing or injuring bats (if present at the time of works). Installation of external artificial lighting could disturb foraging and commuting bats.	**Dusk emergence/dawn re-entry surveys are required to characterise the confirmed bat roost and check for roosts elsewhere in the building (May to August/September).** Avoid installing external lighting, or mitigate impacts where external lighting is essential.
Birds	Damage/destruction of active nests if climbing vegetation on the exterior of the building, trees, or introduced shrubs are removed during the nesting season (which is typically March until the end of August).	Removal of climbing vegetation, trees and shrubs must be undertaken outside of the nesting season, or these must be checked for active nests by an ecologist no more than 48 hours before removal. If active nests were present these would have to be left undisturbed until the young had fledged.
Badger	Injury/death if badgers are trapped in any open excavations or open pipework during construction.	Cover excavations or provide a ramp overnight and cap any open pipework overnight.
Other mammals	Injury/death during site clearance and if hedgehogs become trapped in open excavations or open pipework during construction. Obstruction of hedgehog movement through the site if new fences are installed.	Check the base of introduced shrubs before removal to check for hedgehogs. Create holes at the base of any new fences so that hedgehogs can continue to move through the site.
Amphibians & reptiles	Injury/death during site clearance and construction.	Implement RAMs during site clearance and construction to avoid injury/death.

Conclusions	The proposed development would not impact any statutory designated sites or protected habitats. Further surveys are required to characterise a confirmed bat roost present in the building and check for the presence of other roosts. No significant impacts on ecologically valuable habitats or other protected and notable species are considered likely if the mitigation measures provided in this report are implemented.

Contents

1 Introduction

1.1 Background

1.1.1 Smart Ecology was commissioned by Emma Dawson on behalf of her family to undertake a Preliminary Ecological Appraisal of a site at The Tallet, Nupdown Lane, Oldbury-on-Severn, South Gloucestershire, BS35 1RS (central national grid reference ST 6300 9589). Refer to Figure 1, Section 10 for a location map, which shows the survey area delimited by a red-line boundary (hereafter referred to as the "site").

1.1.2 The purpose of the appraisal was to inform a planning application to South Gloucestershire Council for the conversion of an on-site building into a residential dwelling. Refer to Appendix 1 for the proposed site plan.

1.1.3 This report has been prepared by Joseph Wilkie and Robert Dunn. Joseph is an assistant ecologist at Smart Ecology and a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Robert is an associate member of CIEEM. The report has been produced with reference to CIEEM's Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017a), Guidelines for Ecological Report Writing (CIEEM, 2017b), and BS42020 Biodiversity – a code of practice for planners and developers (BSI, 2013).

1.2 Site Context

1.2.1 The site is approximately 1100 m^2 and comprises a building, part of a garden which includes amenity grassland, introduced shrubs, scattered trees, and a hardstanding driveway, and an area of poor semi-improved grassland with introduced shrubs and scattered trees, part of a concrete yard, and existing asphalt driveway to the public road. The site is situated in a rural location within the hamlet of Nupdown. The local landscape predominantly comprises farmland, with traditional orchards and small areas of woodlands also present.

1.3 Aims

1.3.1 The purpose of the survey and report was to:

- Identify any statutory[1] designated sites on or close to the site.
- Provide an ecological baseline for the site including habitats[2] and the presence of, and potential for, legally protected[3], notable[4], and non-native invasive species.
- Identify any potential impacts on designated sites, habitats, and species.
- Provide details of required further surveys and mitigation.
- Provide details of recommended biodiversity enhancements.

[1] Statutory designated sites are those protected by legislation and include Ramsar, Special Protection Areas (SPA), Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), and Local Nature Reserves (LNR).
[2] Including priority habitats listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.
[3] Legally protected species include species afforded protection by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).
[4] Notable species include priority species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, UK red data book species, and Birds of Conservation Concern (BoCC).

2 Legislation and Planning Policy

2.1 Legislation

2.1.1 Certain species and habitats are legally protected in the UK by legislation. The key pieces of legislation are:

- The Conservation of Habitats and Species Regulations 2017 (as amended).
- Wildlife and Countryside Act 1981 (as amended).
- Natural Environment and Rural Communities (NERC) Act 2006.
- Protection of Badgers Act 1992.
- Wild Mammals (Protection) Act 1996.
- The Hedgerows Regulations 1997.

2.1.2 The implications of legislation with regard to species are provided in Table 2-1.

2.1.3 Only a brief summary of wildlife legislation is provided here for general guidance and should not be considered a definitive statement of the law. For detailed information the legislation itself should be consulted.

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

2.1.4 These Regulations transpose the EU Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations require the designation and protection of European Sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) and the protection of European Protected Species (EPS).

2.1.5 A EPS mitigation licence is required if works affect EPS (e.g. bats) or their places of rest or breeding sites. EPS licences are issued by Natural England only after the following three tests have been satisfied:

- The proposed works must be for the purpose of preserving public health or safety or other imperative reasons of overriding public interest.
- There is no satisfactory alternative to the proposed works.
- The proposed works will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

2.1.6 It will be necessary to determine whether any European Sites or EPS may be impacted, either directly or indirectly, by the proposed development.

Wildlife and Countryside Act 1981 (as amended)

2.1.7 This Act implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Directive) and the EU Directive 79/409/EEC on the conservation of wild birds (Birds Directive).

2.1.8 The Act provides protection to a range of animal and plant species. It also requires sites with special wildlife or geological interest to be designated nationally as Sites of Special Scientific Interest (SSSI).

2.1.9 It will be necessary to consider whether the proposed development would have any direct or indirect impacts on any SSSI or species listed in relevant schedules of the Act.

Natural Environment and Rural Communities (NERC) Act 2006

2.1.10 Section 40 of this Act places a duty on public authorities to 'have regard' to conserving biodiversity when determining planning applications. Section 41 of the Act requires the Secretary of State to publish a list of species and habitats of principal importance to biodiversity (priority species and habitats). The local planning authority must 'have regard' to conserving these species and habitats when determining a planning application. The development would need to mitigate for any impacts on priority habitats and species.

2.1.11 The proposed development would need to mitigate for any impacts on priority habitats and species.

Protection of Badgers Act 1992

2.1.12 This Act provides specific protection for badgers and their setts from harm and disturbance.

2.1.13 The proposed development would need to mitigate any impacts on badgers and setts.

Wild Mammals (Protection) Act 1996

2.1.14 This Act makes it an offence to intentionally inflict unnecessary suffering on a wild mammal through mutilation, kicking, beating, nails, impaling, stabbing, burning, stoning, crushing, drowning, dragging, or asphyxiation.

2.1.15 Care would have to be taken during the construction phase of the proposed development to ensure that unnecessary suffering is not inflicted.

The Hedgerows Regulations 1997

2.1.16 These Regulations protect most hedgerows from removal unless permissioned by a local planning authority. They also provide historic and ecological criteria for defining important hedgerows. A local planning authority can only refuse permission to remove a hedgerow under the Hedgerows Regulations 1997 if a hedgerow is assessed to be important.

2.1.17 The proposed development should aim to retain and protect hedgerows and mitigate for impacts.

Table 2-1: Implications of legislation with regard to species

Legislation	Species	Legal Implications
The Conservation of Habitats and Species Regulations 2017 (as amended)	• Bats • Hazel dormouse • Otter • Great crested newt	It is illegal to: • Deliberately capture, injure or kill these species. • Deliberately disturb[1] these species. • Damage or destroy a breeding site or resting place used by these species.

Legislation	Species	Legal Implications
Wildlife and Countryside Act 1981 (as amended) – sub-sections 9(4) b and c and 9(5) only	• Bats • Hazel dormouse • Otter • Great crested newt	It is illegal to: • Intentionally or recklessly disturb these species while they are occupying a structure or place of shelter or protection. • Intentionally or recklessly obstruct access to a structure or place of shelter or protection.
Wildlife and Countryside Act 1981 (as amended)	• Birds	It is illegal to intentionally: • Kill, injure or take any wild bird. • Take, damage or destroy a wild bird's nest while it is in use or being built. • Take or destroy the eggs of any wild bird. There is additional protection for birds listed on Schedule 1 (S1) of the Act, which includes barn owls, whereby it is an offence to intentionally or recklessly disturb a S1 bird while building a nest or in or near a nest containing eggs or young, and disturb dependent young of a S1 bird.
Wildlife and Countryside Act 1981 (as amended)	• Water vole	It is illegal to: • Intentionally kill, take, or injure water voles. • Intentionally or recklessly damage or destroy a place of shelter or protection. • Intentionally or recklessly disturb water voles while they are occupying a structure or place of shelter or protection. • Intentionally or recklessly obstruct access to a structure or place of shelter or protection.
Wildlife and Countryside Act 1981 (as amended) – sub-sections 9(1) (partial) and 9(5) only	• Common reptile species	It is illegal to: • Intentionally or recklessly kill or injure common lizard, slow worm, grass snake, and adder.
NERC Act 2006	• Priority species	Local planning authorities must '*have regard*' to conserving priority species. Priority species include several bat and bird species, otter, hazel dormouse, water vole, hedgehog, brown hare, harvest mouse, polecat, common reptile species, great crested newt, and common toad.
Protection of Badgers Act 1992	• Badger	It is illegal to: • Wilfully capture, kill or injure a badger. • Damage, destroy or obstruct access to setts. • Disturb badgers in setts.

[1] Disturbance under the Conservation of Habitats and Species Regulations 2017 (as amended) is defined as impairing the ability of an animal to survive, breed, reproduce, rear or nurture their young, hibernate or migrate, or to significantly affect the local distribution or abundance of the species.

2.2 Planning Policy

National Planning Policy Framework (NPPF) 2021

2.2.1 Paragraph 174 states that planning decisions should protect sites of biodiversity value, minimise biodiversity impacts, and contribute to net biodiversity gains.

2.2.2 Paragraph 180 states that planning permission should be refused if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for.

2.2.3 The NPPF emphasises the need to consider biodiversity at a landscape scale, conserving, restoring and enhancing priority habitats and ecological networks, and protecting priority species. The NPPF also specifies the need to protect designated sites from adverse harm and to protect irreplaceable habitats (e.g. ancient woodland and veteran trees).

2.2.4 The proposed development would need to mitigate for impacts on biodiversity and provide net biodiversity gains where possible.

Local Planning Policy

2.2.5 The presence of EPS, including bats, is a material consideration in the planning process and local planning authorities will refuse planning permission where a EPS licence is unlikely to be granted and a criminal offence relating to an EPS is likely to result from a development.

2.2.6 The South Gloucestershire Local Plan Core Strategy (adopted 2013) and Policies, Sites and Places Plan (adopted 2017) set out policies for development and land use in the district. Refer to Table 2-2 for a summary of policies relevant to ecology and biodiversity at this site. Refer to the original documents for the full wording of these policies.

Table 2-2: Relevant South Gloucestershire Council policies

Policy	Details
Policy CS9 – Managing the Environment and Heritage	In order to protect and manage South Gloucestershire's environment and its resources in a sustainable way, new development will be expected to: • Conserve and enhance the natural environment, avoiding or minimising impacts on biodiversity and geodiversity.
Policy PSP3 – Trees and Woodland	Proposals should minimise the loss of existing vegetation that is of ecological importance. Where appropriate proposals should include: • Tree protection. • Replacement and additional tree planting.
Policy PSP19 – Wider Biodiversity	Where appropriate biodiversity gain will be sought from development proposals, this will be proportionate to the size of the scheme.

3 Methodology

3.1 Desk Study

3.1.1 The Multi-Agency Geographic Information Centre (MAGIC)[1] website was consulted for existing information on:

- Statutory designated sites within 1 km of the site.
- Priority habitats and ancient woodlands within 500 m of the site.
- Granted EPS mitigation licences within 1 km of the site.
- Statutory designated sites for bats within 6 km^2 of the site.
- Habitats within 6 km^2 of the site[3].
- Great crested newts licence returns and pond survey results within 1 km of the site.
- Mapped waterbodies within 500 m of the site.

3.1.2 The search areas are considered sufficient to take into account ecological receptors which could potentially be impacted by the proposed development.

3.1.3 A data search was not obtained from the Local Records Centre as it was considered that this would not provide any significant additional information to inform the assessment.

3.2 Field Survey

Personnel

3.2.1 The field survey was carried out by Joseph Wilkie; see Table 3-1 for details of the surveyor's experience and qualifications.

Table 3-1: Surveyor information

Surveyor	Natural England Survey Licences	Experience
Joseph Wilkie BSc, Qualifying member of CIEEM	Bats Level 1 (2021-54618)	Three years' experience in ecological consultancy. BSc Environmental Resource Management (Plymouth University – 1st).

[1] https://magic.defra.gov.uk/MagicMap.aspx (accessed May 2021).
[2] 6 km is the largest known bat Core Sustenance Zone (CSZ) (Collins, 2016).
[3] To inform an assessment of the suitability of habitats for commuting and foraging bats.

Survey Weather Conditions

3.2.2 The survey was undertaken on the 10th of May 2021. See Table 3-2 for details of the weather conditions during the survey.

Table 3-2: Survey weather conditions

Variable	Weather Conditions
Cloud cover	75 - 100 %
Temperature	13°C
Wind	Light breeze (BWS 2)
Precipitation	Intermittent showers

Extended Phase 1 Survey

3.2.3 A Phase 1 habitat survey was undertaken following the methodology outlined in the 'Handbook for Phase 1 Habitat Survey' (JNCC, 2010). This involved a walkover of the site to map habitats present against Phase 1 categories. As an extension to the Phase 1 habitat survey, any priority habitats within the site were identified and habitats assessed for evidence of, and potential to support, legally protected, notable and invasive non-native species. Any evidence of, and potential for, such species was recorded.

3.2.4 Specifically, the site was surveyed for evidence of, and potential for, the species/groups detailed in Table 3-3:

Table 3-3: Typical habitat requirements and field signs for surveyed species/groups

Species/ Group	Typical Habitat Requirements	Field Signs
Bats	Roost in buildings, trees, other structures, and underground sites. Foraging and commuting habitat include watercourses, waterbodies, hedgerows, tree-lines, scrub, woodland, pasture, and meadows.	Direct sighting, carcasses, droppings, urine, grease marks, feeding remains, squeaking.
Birds	Woodland, trees, scrub, hedgerows, moorland, heathland, wetlands, cavities within buildings, waterbodies, grassland.	Direct sightings, nests, droppings, feathers, eggs.
Badger	Woodland, dense scrub, hedgerows, moorland, grassland, field edges.	Direct sightings, setts, hair, footprints, dung, latrine pits, paths.
Hazel dormouse	Deciduous and mixed woodland (especially coppice managed with a successional stage of vegetation). Also hedgerows, conifer plantations, and dense scrub.	Direct sighting, nests, gnawed nuts.

Species/ Group	Typical Habitat Requirements	Field Signs
Otter	Holts in tree cavities, roots, rabbit burrows and bank-side rocks. Rivers, wetland, wet ditches, drains, ponds, lakes, coastal and marshland.	Direct sightings, anal jelly, spraint (dung), footprints, paths/tracks through vegetation, feeding remains, slides into and out of the water, couches (above ground resting places), holt entrances (below ground shelters).
Water vole	Vegetated banks on slow moving watercourses, reed beds, ponds, lakes, marshland, upland.	Direct sightings, latrines, droppings, feeding stations, burrows, feeding remains, lawns, nests, footprints.
Brown hare	Open farmland, grassland, woodland edges. Favours a mosaic of arable (cereal crops), grassland (with long areas for shelter) and hedgerows. Hare forms (resting places) may be in a grass tussock or behind a rock to give some protection. Hayfields provide better habitat than silage grassland as leverets are vulnerable to earlier cutting.	Direct sightings, footprints, droppings, forms, paths (tracks),
Hedgehog	Grassland, heathland, moorland, farmland, woodland, gardens	Direct sightings, footprints, droppings.
Polecat	Woodland, riverbank, marsh and farmland with hedgerows and small woods. Generalist species with wide ranges. Feed on rabbits, small rodents, birds, insects, frogs when gathered to spawn in the spring. Dens often in rabbit burrows in summer and move to farmyards (hay bales, under sheds, rubbish tips) in winter.	Direct sightings, footprints, droppings.
Harvest mouse	Long tussocky grassland, cereals, roadside verges, reedbeds, hedgerows, farmland and around woodland edges. Feed on seeds, berries, insects, cereal grains, also moss, roots and fungi. Nests found in dense vegetation (grasses, rushes, cereals, grassy hedgerows, ditches and brambles).	Direct sighting, nests.
Amphibians	Waterbodies for breeding. Terrestrial habitat includes most semi-natural environments including rough grassland, marsh, scrub, woodland, hedgerows, brownfield and low-intensity farmland. Tree stumps, mammal burrows, stone piles, log piles, compost heaps for shelter and hibernation.	Direct sightings, eggs attached to vegetation in waterbodies.

Species/ Group	Typical Habitat Requirements	Field Signs
Reptiles	Mosaic of habitats with potential for shelter and basking including rough grassland, scattered scrub, hedgerows, heathland, moorland, woodland glades, wetland, gardens and brownfield. Tree stumps, mammal burrows, stone piles, log piles, compost heaps for shelter and hibernation.	Direct sightings, sloughed skin.
Invertebrates	Diverse range of habitats including mature trees, deadwood, flower-rich grassland, tussocky grassland, waterbodies, wetlands, scrub, hedgerows and brownfield sites.	Direct sightings.
Fish	Running and standing water.	Direct sightings.
Plants	Waterbodies, woodland, grassland, hedgerow bases.	Direct sightings.
Invasive non-native species	All habitats.	Direct sightings.

3.2.5 An assessment was made of the likelihood that the protected, notable, and non-native invasive species/groups detailed in Table 3-3 occur on or close to the site with reference to the criteria provided in Table 3-4.

Table 3-4: Criteria for the assessment for the presence of species/groups

Likelihood of Occurrence	Assessment Criteria
Confirmed	Field signs and/or records confirm the presence of species/group.
High	Presence of species concerned not confirmed by field signs or records, but high quality suitable habitat present on site and connected to further suitable habitat AND/OR field signs present indicative of presence of species but presence not definitely proven. Site within known geographic distribution for the species/group.
Moderate	Presence of species concerned not confirmed by field signs or records, but moderate quality suitable habitat present on the site and some connectivity to further moderate or high quality suitable habitat in the wider landscape. Site within known geographic distribution for the species/group.
Low	Presence of species concerned not confirmed by field signs or records. Low quality suitable habitat on the site AND/OR poor connectivity to further suitable habitat in the local landscape. However, possible presence of the species/group cannot be completely discounted. Site within known geographic distribution for the species/group.
Negligible	No field signs and/or records of species. No suitable habitat present on or close to the site. Site not within known geographic distribution for the species/group.

3.2.6 The Extended Phase 1 Habitat survey included a preliminary bat roost assessment of the on-site building and trees, as follows:

Preliminary Bat Roost Assessment

Habitat Assessment

3.2.7 Habitats on and in the vicinity of the site were assessed for their suitability for commuting and foraging bats. An assessment of habitat suitability was made with reference to the BCT good practice guidelines (Collins, 2016); see Table 3-5 for the assessment criteria.

Table 3-5: Habitat suitability assessment criteria

Suitability	Description
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Building Survey

3.2.8 The building was surveyed for evidence of, and potential for, roosting bats following the methodology outlined in the BCT good practice guidelines (Collins, 2016). A detailed external and internal inspection was undertaken using a high-powered torch (Clulite 1 million candle power) and close focusing (8.5 x 21) binoculars. Possible entry/exit locations for bats, potential roost sites, and the presence or evidence of bats (e.g. carcasses, droppings, urine, grease marks, feeding remains, squeaking etc.) were noted. Samples of bat droppings were taken to permit DNA analysis if required, following good practice guidance protocol for bat dropping collection (Collins, 2016).

3.2.9 An assessment was made of the suitability of the building for roosting bats during the bat active period (i.e. March to October) with reference to the BCT good practice guidelines (Collins, 2016); see Table 3-6 for the assessment criteria.

Table 3-6: Bat roost suitability assessment criteria and required surveys

Suitability	Description	Number of Surveys Required[2]
Negligible	Negligible suitability for roosting bats.	None
Low	1 + potential roost sites that may be used by individual bats opportunistically. However, these potential roost sites do not provide suitable conditions[1] or have suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.	One
Moderate	1 + potential roost sites with suitable conditions[1] and surrounding habitat but unlikely to support high conservation status roosts.	Two
High	1 + potential roost sites with good conditions[1] and surrounding habitat, that are obviously suitable for use by large number of bats regularly.	Three
Confirmed bat roost	1 + roost sites.	Two (minimum)

[1] Conditions include size, protection, shelter, temperature, humidity, height above ground, light levels and disturbance levels.
[2] Recommended number of emergence/re-entry surveys required by the BCT good practice guidelines to provide confidence that bats are absent from the building/structure, or to characterise confirmed roosts.

Tree Surveys

3.2.10 On-site trees were inspected for potential bat roost features from ground level using a high-powered torch (Clulite 1 million candle power), close focusing (8.5 x 21) binoculars, and an endoscope to inspect accessible cavities. Trees were viewed from all angles and any potential roost features (e.g. woodpecker holes, rot holes, hazard beams etc.) or evidence of bats (e.g. droppings, odour, staining etc.) were noted.

3.2.11 An assessment was then made of the suitability of the trees for roosting bats with reference to the BCT good practice guidelines (Collins, 2016); see Table 3-6.

Hibernation Assessment

3.2.12 An assessment of the suitability of the building/trees for hibernating bats was undertaken, which considered the following aspects (Middleton, 2019):

- Presence and suitability of potential roost features.
- Temperature and humidity conditions likely to be present during the hibernation period (i.e. November to February).
- The suitability of habitat in the local landscape for bats.
- Presence of known roosts within, or close to, the structure/building.

3.2.13 Refer to Table 3-7 for the assessment criteria and suitability.

Table 3-7: Hibernation suitability assessment criteria (adapted from Middleton, 2019)

Suitability	Description
Negligible	Negligible suitability for roosting bats.
Low	Limited number of external features, many features shallow (e.g. less than 10 cm deep). The features would not typically be regarded as providing the protection from weather or favourable temperature and humidity conditions required during the winter period. OR External and/or internal features present which offer full protection from the weather, however the surrounding habitat offers negligible/low suitability for bats. OR No roosts exist in the structure or nearby over the active period.
Moderate	External and/or internal features present which larger numbers of bats could occupy. The features offer full protection from the weather and there is potential for suitable temperature and humidity conditions. The site is well connected to moderate or high suitability habitat.
High	External and/or internal features present which offer a 'classic' hibernation setting (e.g. stable temperature, humid conditions, underground site). The site is well connected to moderate or high suitability habitat.

3.3 Evaluation of Ecological Features

3.3.1 A valuation of ecological features (designated sites, species, and habitats) was undertaken in accordance with CIEEM guidance (CIEEM, 2018). Valuation is determined using the geographic framework provided in Table 3-8.

3.3.2 The value of an ecological feature is based on a professional ecologist's judgement and takes into consideration various characteristics including any site designations, species records, priority species and habitats, species rarity, the quality of the resources (e.g. habitat diversity, species population size), and location within the landscape context.

3.3.3 Sometimes it is not possible to provide a valuation of ecological features in the absence of data, which would have to be provided by further ecological surveys. Important ecological features, which may pose a constraint to the proposed development, are those with an ecological value which could be impacted by the development. These are the features which may require further survey work and mitigation.

Table 3-8: Framework for assessing the value of ecological features

Geographic Scale	Example of Ecological Feature
International **(most important)**	An internationally designated site e.g. Special Areas of Conservation (SAC), Special Protection Area (SPA), Ramsar sites. Regularly occurring populations of internationally important species.
National	Site of national importance e.g. Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR). Regularly occurring populations of nationally important species.

Geographic Scale	Example of Ecological Feature
Regional	Non-statutory site e.g. Local Wildlife Site (LWS), Key Wildlife Site (KWS), Country Wildlife Site (CWS) supporting a regionally significant area of priority habitat or regionally significant population of legally protected/priority species.
County	Non-statutory site e.g. Local Wildlife Site (LWS), Key Wildlife Site (KWS), Country Wildlife Site (CWS), ancient woodland, site supporting priority habitats, priority species, and/or legally protected species of significance for the county.
Local	Habitats which enhance the local habitat resource e.g. old species-rich hedgerow, deciduous woodland, pond, small areas of priority habitat or areas supporting small populations of legally protected/priority species which are not rare within the region, county, or nationally.
Site	Habitats of limited ecological importance e.g. scattered trees, hedgerows, woodland plantations, small areas of non-priority habitats that are of value for wildlife. Species of limited ecological importance.
Negligible **(least important)**	Hardstanding, bare ground, built environment, and other areas with negligible biodiversity value, including for priority and legally protected species.

3.4 Limitations

3.4.1 There were no limitations to the survey.

4 Baseline Ecological Conditions

4.1 Desk Study

Statutory and Non-Statutory Designated Sites

4.1.1 No statutory designated sites are located within 1 km of the site.

Priority Habitats and Ancient Woodlands

4.1.2 Refer to Table 4-1 for details of priority habitat and ancient woodland records within 500 m of the site.

Table 4-1: Priority habitat and ancient woodland records within 500 m

Priority Habitat and Ancient Woodlands	Details
Coastal and floodplain grazing marsh	Several mapped areas within 500 m, closest located approximately 70 m to the north-east of the site.
Traditional orchards	Two mapped areas within 500 m, located approximately 100 m to the north and approximately 120 m to the south of the site.
Ancient woodlands	None located within 500 m of the site.

Granted EPS Mitigation Licences

4.1.3 No EPS mitigation licences have been granted within 1 km of the site.

Statutory Designated Sites for Bats

4.1.4 No statutory protected sites designated for bats are located within 6 km of the site.

Great Crested Newt Licence Returns and Pond Survey Results

4.1.5 There are no records of great crested newt licence returns or pond surveys within 1 km of the site.

Waterbodies

4.1.6 Six waterbodies were identified within 500 m of the site. Refer to Table 4-2 for the distances of these waterbodies from the site, and to Figure 2, Section 10 for a map showing the location of these waterbodies.

Table 4-2: Waterbodies within 500 m

Waterbody	Approximate Distance from Site (m)
1	100
2	260
3	320
4	360

Waterbody	Approximate Distance from Site (m)
5	455
6	490

4.2 Field Survey – Habitats

4.2.1 The location and extent of habitats within the site are shown on the Phase 1 habitat map; see Figure 3, Section 10.

Amenity Grassland

4.2.2 Areas of short mown amenity grassland were present in garden areas. Species present included perennial rye-grass, red fescue, dandelion agg., common daisy, ribwort plantain, creeping buttercup, and springy turf-moss.

Building

4.2.3 One building was present on the site. The building was a steel portal framed structure which was originally in agricultural use, then used for stabling, and has subsequently been in ancillary use for approximately 15 years.

Hardstanding

4.2.4 Access to the site was laid with concrete and asphalt. The parking area was formed by hardstanding

Poor Semi-Improved Grassland

4.2.5 A small area of poor semi-improved grassland was present adjacent to the western elevation of the building. Grass species were dominant, and included perennial rye-grass, red fescue, and Yorkshire fog. Forb species present included, dandelion agg., lords-and-ladies, common valerian, cleavers, cowslip, *Myosotis* sp., cow parsley, curled dock, cyclamen sp., common dog violet, hogweed, and yellow archangel.

Introduced Shrubs

4.2.6 Areas of amenity shrub planting were present on the site. Species present included, rhododendron, cherry laurel, copper beech, dogwood sp., and Mexican orange. Other plant species present within the amenity shrub planting included peony sp., and wisteria.

Scattered Broadleaved Trees

4.2.7 Several semi-mature trees were located on the site. Species present included silver birch, field maple, copper beech, plum sp., downy birch, and elder.

4.3 Field Survey - Species

4.3.1 Table 4-3 provides details of an assessment of the suitability of habitats on and close to the site for protected, notable, and invasive non-native species/groups, details of any evidence of these species/groups, and an assessment of the likelihood that these species/groups occur on or close to the site.

Table 4-3: Site suitability assessment for protected and notable species/groups and invasive non-native species

Species/ Group	Habitat Assessment	Evidence	Likelihood of Presence/Occurrence
Bats (foraging and commuting)	Site provided a small area of low suitability foraging and commuting habitat, with connectivity to habitats in the local landscape provided via gardens.	N/A	**LOW** Bats may occasionally forage on and close to the site.
Bats (roosting)	The building supported a confirmed bat roost and had other features with potential for use by roosting bats (see Appendix 3 and Appendix 4 for the results of the preliminary roost assessment). The on-site trees were assessed to have negligible suitability for roosting bats	Confirmed bat roost within the building.	**CONFIRMED**
Birds	Small area of suitable foraging habitat on the site. Potential for nesting within on-site trees and within climbing vegetation on the exterior of the building, and in introduced shrubs.	None	**HIGH** Habitats on the site likely to be used by common and widespread species for foraging and nesting.
Badger	No setts on or within 30 m of the site. Small area of suitable foraging and dispersal habitat on the site.	None	**LOW** Occasional use of the site for foraging and dispersal possible.
Hazel dormouse	No suitable habitat on or close to the site.	None	**NEGLIGIBLE**
Otter	No suitable habitat on or close to the site.	None	**NEGLIGIBLE**
Water vole	No suitable habitat on or close to the site.	None	**NEGLIGIBLE**

Species/ Group	Habitat Assessment	Evidence	Likelihood of Presence/Occurrence
Other mammals	Small area of suitable foraging and dispersal habitat which could be used by hedgehog. Also potential for refuge by hedgehog at the base of introduced shrubs.	None	**MODERATE** Suitable foraging and refuge habitat on the site for hedgehogs.
Amphibians	The grassland could be used for dispersal and foraging. The base of introduced shrubs provided suitable refuge habitat.	None	**LOW**
Reptiles	The grassland could be used for dispersal and occasionally for foraging. The base of introduced shrubs provided suitable refuge habitat.	None	**LOW**
Invertebrates	Site provided low value habitat for invertebrates, likely to be used by common and widespread species only.	None	**LOW**
Fish	No suitable habitat on or close to the site.	None	**NEGLIGIBLE**
Plants	On-site habitats provided negligible potential for rare or notable species to be present.	None	**NEGLIGIBLE**
Invasive non-native species	N/A	None	**NEGLIGIBLE**

5 Ecological Constraints

5.1.1 It is proposed to convert the on-site building into a residential dwelling. The proposals would also require the removal of a small area amenity grassland and introduced shrubs. See Appendix 1 for the proposed site plan.

5.1 Great Crested Newt Rapid Risk Assessment

5.1.1 A Natural England Rapid Risk Assessment (RRA) was undertaken (see Figure 5-1), which is an assessment of the likelihood that the proposed development would result in an offence with respect to great crested newts. This RRA assumes that great crested newts are present within all waterbodies identified within 500 m of the site and that the whole site is cleared of suitable habitats. It is also assumed that precautionary methods of working would be implemented during site clearance and works to avoid impacts on individual great crested newts. This RRA indicates that it is highly unlikely that the proposed development would result in an offence being committed with respect to great crested newts.

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100 m of any breeding pond(s)	No effect	0
Land 100 - 250m from any breeding pond(s)	0.1 – 0.5 ha lost or damaged	0.1
Land >250 m from any breeding pond(s)	0.1 – 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
	Maximum:	0.1
Rapid Risk Assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**	

Figure 5-1: Rapid Risk Assessment (Natural England, 2015)

5.2 Evaluation of Potential Impacts

5.2.1 Statutory designated sites, protected and ecologically valuable habitats, and protected and notable species may pose a constraint if there is potential for them to be impacted by a proposed development. Invasive non-native species may also pose a constraint to development, and provide opportunities to enhance the biodiversity value of a site by their removal or control.

5.2.2 Table 5-1 provides a valuation of features on and close to the site which could be impacted by the proposed development, justification for the valuation, and details of potential impacts upon these features in the absence of mitigation. Only species which were present or assessed to have potential to be present on or close to the site are included in the valuation. Features highlighted in blue have the potential to pose a constraint to the proposed development of the survey area and would require further surveys and/or mitigation (see Section 6).

Table 5-1: Valuation and potential impacts on ecological features

Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Statutory designated site	International and National	Site of international and national importance for biodiversity.	No impacts anticipated.
Priority habitats	County	Habitats of importance at the county level.	No impacts anticipated.
Ancient woodland	National	Irreplaceable habitat.	None.
Amenity grassland	Site	Widespread and common habitat.	Loss of small area of short mown species-poor grassland is considered highly unlikely to have a significant biodiversity impact.
Buildings	Unknown	N/A	Negligible intrinsic value. However, see potential impacts on roosting bats and nesting birds.
Hardstanding	Negligible	No ecological value.	None.
Introduced shrubs	Site	Widespread and common habitat. Mostly non-native species.	Removal of small areas of introduced shrubs is considered highly unlikely to have a significant biodiversity impact. However, see potential impacts on nesting birds, hedgehogs, amphibians and reptiles.
Poor semi-improved grassland	Site	Widespread and common habitat.	Loss of small area of species-poor grassland considered highly unlikely to have a significant biodiversity impact. However, see potential impacts on nesting birds, hedgehogs, amphibians and reptiles.
Scattered broadleaved trees	Site	Widespread and common habitat.	Felling of trees. Damage to retained trees during works. Removal would result in a reduction in the biodiversity value of the site Also see potential impacts on nesting birds.
Bats (foraging and commuting)	Site	Small area of low value foraging and commuting habitat on the site.	Loss of small area of low value foraging habitat on the site is considered highly unlikely to have a significant impact on bat local populations. Further and more extensive suitable habitat in the local landscape. Installation of external artificial lighting could disturb foraging and commuting bats.

Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Bats (roosting)	Unknown	A confirmed bat roost is present within the building, and the building had other features with potential for use by roosting bats.	Destruction of a roost in the building and potential for killing or injuring bats (if present at the time of works).
Birds	Site	Small area of suitable foraging and nesting habitat on the site.	Loss of small area habitat on the site is considered highly unlikely to have a significant impact on local bird populations. Further and more extensive suitable habitat in the local landscape. If climbing vegetation growing on the building's exterior, trees, and introduced shrubs are removed during the nesting season (which is typically March to August inclusive) then there is potential for killing/injury of birds, and destruction of active nests.
Badger	Site	Small area of suitable foraging and dispersal habitat.	Loss of small area of suitable foraging habitat is considered highly unlikely to have a significant impact on the local population. Further and more extensive suitable habitat in the local landscape. Injury/death if badgers are trapped in any open excavations or open pipework during construction.
Other mammals	Site	Small area of suitable foraging and dispersal habitat for hedgehog.	Loss of small area of suitable habitat is considered highly unlikely to have a significant impact on the local hedgehog population. Further and more extensive suitable habitat in the local landscape. Injury/death if hedgehogs (and other mammals) are trapped in any open excavations or open pipework during construction, or harmed during vegetation clearance. Obstruction of hedgehog movement through the site if new fences are installed.

Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Amphibians	Site	Small area of suitable terrestrial habitat on the site.	Loss of a small area of suitable terrestrial habitat is considered highly unlikely to have an impact on amphibian populations. Further and more extensive suitable habitat in the local landscape. Injury/death during site clearance and construction.
Reptiles	Site	Small area of suitable habitat on the site.	Loss of small area of suitable habitat is considered highly unlikely to have a significant impact on reptile populations. Further and more extensive suitable habitat in the local landscape. Injury/death during site clearance and construction.
Invertebrates	Site	Small area of suitable habitat on the site, likely to be used by common and widespread species.	No significant impacts anticipated. Further and more extensive suitable habitat in the local landscape.

6 Surveys, Mitigation and Enhancements

6.1 Surveys

6.1.1 Further surveys for roosting bats are required. The results of these surveys must be provided with the planning application to enable the local planning authority to fully assess the impacts of the proposed development.

6.1.2 A survey calendar is provided in Figure 6-1 which summarises the timings of required surveys.

Survey	J	F	M	A	M	J	J	A	S	O	N	D
Bat emergence/ re-entry surveys												

Figure 6-1: Survey calendar (blue shading shows survey timings)

Bats

Emergence/Re-entry Surveys

6.1.3 In accordance with good practice guidelines (Collins, 2016), emergence and re-entry surveys must be carried out to characterise the confirmed roost and to determine whether bats are roosting elsewhere in the building. An appropriate number of surveys would be necessary to fully characterise roosts, with the number required dependent on the results of the preceding surveys; typically two or three surveys are sufficient. These surveys must be carried out during the period between May and September inclusive, with at least two of the surveys carried out between May and August inclusive. It is also recommended that a sample of droppings is sent for DNA analysis to confirm the species present.

6.1.4 As the building supports a confirmed bat roost, a EPS mitigation licence must be obtained from Natural England to permit the proposed development to take place. A licence can only be applied for after planning permission has been granted and any relevant ecological conditions discharged.

6.1.5 No works that could affect bat roosts in the building can take place until surveys have been completed and a EPS mitigation licence has been obtained.

6.2 Mitigation

Scattered Broadleaved Trees

6.2.1 Retain trees wherever possible.

6.2.2 Where necessary, protect retained trees by erecting temporary fencing or barrier tape around root protection areas or using suitable ground protection in accordance with BS5387 - trees in relation to design, demolition and construction (BSI, 2012). The root protection area should be calculated as 12 times the tree stem diameter, unless otherwise advised by an arboricultural specialist. If required, this should be installed prior to works commencing and retained throughout the construction period.

6.2.3 If any trees require removal, then it is recommended that at least one native is planted on the site as compensation for every tree removed.

Bats

6.2.4 Mitigation required for bats roosting in the building would be determined after the completion of the further required surveys.

6.2.5 Avoid light spill onto surrounding habitats (trees and gardens). It is recommended that the use of external artificial lighting is kept to a minimum and warm-white (long wavelength, not UV) LED lights used, and motion sensors on short-duration timers and high motion threshold fitted (e.g. so that moths do not set them off).

Birds

6.2.6 Removal of climbing vegetation growing on the exterior of the building, any trees, and introduced shrubs must either be undertaken outside of the nesting season (which is generally March until the end of August), or these features must be checked for active nests by an ecologist no more than 48 hours before removal. If active nests were then found, then these would have to be left undisturbed until the young had fledged.

Badger & Other Mammals

6.2.7 During construction it is recommended that any excavations are covered overnight to prevent mammals falling in and becoming trapped. If excavations cannot be covered then a ramp at least 40 cm wide must be installed, with an angle no steeper than 40 degrees, to enable animals to escape. Excavations must be checked every morning to ensure that there are no trapped animals, and any animals present left to escape by their own volition (badger) or moved outside of the works area by hand or using a suitable container. Any open pipework larger than 100 mm outside diameter must be capped overnight to prevent animals becoming trapped.

6.2.8 Check the base of shrubs for hedgehogs before commencing the clearance of vegetation. If hedgehogs were found, then these must be moved outside of the work area by gloved hand or using a container.

6.2.9 If fence boundaries are to be installed around the new curtilage then it is recommended that holes at least 130 x 130 mm in size are created at the base on each boundary to ensure that hedgehogs and other mammals can continue to freely move through the site.

Amphibians & Reptiles

6.2.10 Implement Reasonable Avoidance Measures (RAMs) during site clearance and construction to minimise the risk of injuring or killing amphibians and reptiles, as follows:

- During construction, store building material on pallets or hardstanding to deter amphibians and reptiles from sheltering underneath. All waste must be stored in skips or containers and not in piles on the ground.
- Cover excavations overnight, or a ramp must be installed with an angle no steeper than 40 degrees to enable animals to escape. Any pipework must be capped overnight. Excavations must be checked every morning to ensure there are no trapped amphibians and reptiles; any animals present must be moved outside of the works area by gloved hand or using a suitable container.

- In the unlikely event that a great crested newt is found at any time during works then works must stop immediately and an ecologist must be contacted. A guide to newt identification is provided in Appendix 2, and this must be displayed on site for contractors to see.

6.3 Enhancements

6.3.1 In line with the NPPF and local planning policy, opportunities to provide a biodiversity enhancement are detailed in Table 6-1.

Table 6-1: Opportunities for biodiversity enhancements

Opportunity	Details
Provision of bird nest boxes	One or more nest boxes could be installed on the external elevations of the proposed dwelling. Ideally these should be integrated boxes which are built into the walls (e.g. Vivara Pro WoodStone House Sparrow Nest Box, Woodstone Build-in Open Nest Box, Schwegler Brick Nest Boxes). Alternatively, boxes could be mounted on the external walls (e.g. Vivara Pro Seville 28 mm or 32 mm WoodStone nest box, Vivara Pro WoodStone house martin nest) or on trees (e.g. 1B Schwegler bird box, Vivara Pro Seville 32mm WoodStone nest box, 2GR Schwegler nest box). Nest boxes must be installed 3 – 4 m above ground level, and ideally face between the north and east to avoid direct sunlight and prevailing wind and rain. Birds must have a clear flight path to and from the boxes.
Provision of bat boxes	One or more bat boxes could be installed on or within the external elevations of the proposed dwelling. Ideally these should be integrated boxes which are built into the walls (e.g. 1FR Schwegler bat tube, Vivara Pro Build-in Woodstone bat tube, Ibstock Enclosed bat box). Alternatively, boxes could be mounted on the external walls (e.g. Beaumaris Woodstone bat box, 1FF Schwegler bat box). Bat boxes must be installed at least 3 - 4 m above ground level, ideally facing to the south, south-west and/or south-east, located away from windows and other artificial light sources, and with a clear flight path to and from the entrance.
Provision of hedgehog nest box	A hedgehog nest box could be installed in a sheltered area on the site to provide nesting opportunities for hedgehogs.

7 Conclusions

7.1.1 It is proposed to convert the on-site building into a residential dwelling. The proposals would also require the removal of a small area amenity grassland and introduced shrubs. See Appendix 1 for the proposed site plan.

7.1.2 The proposed development would not impact any statutory designated sites or protected habitats. Further surveys are required of the building to characterise a confirmed bat roost and check for the presence of other roosts. No significant impacts on ecologically valuable habitats or other protected and notable species are considered likely if the mitigation measures provided in this report are implemented.

7.1.3 A summary of potential impacts which could arise from the proposed development and details of required further surveys and mitigation are provided in Table 7-1.

Table 7-1: Summary of potential impacts and required further surveys and mitigation

Ecological Feature	**Potential Impacts without Mitigation** (refer to Section 5)	**Required Surveys/Mitigation** (refer to Sections 6.1 & 6.2)
Scattered trees	Felling of trees and damage to retained trees during works. Removal of trees would result in a reduction in the biodiversity value of the site.	Retain trees wherever possible, and protect retained trees during works. Plant new native trees on the site to compensate for any felled.
Bats	Destruction of a confirmed roost in the building and potential for killing or injuring bats (if present at the time of works). Installation of external artificial lighting could disturb foraging and commuting bats.	**Dusk emergence/dawn re-entry surveys are required to characterise the confirmed bat roost and check for roosts elsewhere in the building (May to August/September).** Avoid installing external lighting, or mitigate impacts where external lighting is essential.
Birds	Damage/destruction of active nests if climbing vegetation on the exterior of the building, trees, or introduced shrubs are removed during the nesting season (which is typically March until the end of August).	Removal of climbing vegetation, trees and shrubs must be undertaken outside of the nesting season, or these must be checked for active nests by an ecologist no more than 48 hours before removal. If active nests were present these would have to be left undisturbed until the young had fledged.
Badger	Injury/death if badgers are trapped in any open excavations or open pipework during construction.	Cover excavations or provide a ramp overnight and cap any open pipework overnight.
Other mammals	Injury/death during site clearance and if hedgehogs become trapped in open excavations or open pipework during construction. Obstruction of hedgehog movement through the site if new fences are installed.	Check the base of introduced shrubs before removal to check for hedgehogs. Create holes at the base of any new fences so that hedgehogs can continue to move through the site.
Amphibians & reptiles	Injury/death during site clearance and construction.	Implement RAMs during site clearance and construction to avoid injury/death.

8 Local Records Centre Submission

A list of species recorded on the site during the survey is provided in Table 8-1. These records will be sent to the Local Records Centre.

Site Name	The Tallet, Nupdown Lane, Oldbury-on-Severn, South Gloucestershire, BS35 1RS	**Survey by**	Joseph Wilkie
Grid Reference	ST 6300 9589	**Position**	Ecologist
Provided By	Smart Ecology Ltd.	**Survey Date**	10/05/2021

Table 8-1: LRC Submission

Common Name	Scientific Name	Comment
Unidentified bat	-	Approx. 30 scattered dropping found within building under timber joists.

9 References

British Standards Institute (BSI) (2012). *BS5387 Trees in relation to design, demolition and construction - Recommendations*. BSI, London.

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CIEEM (2016). *UK Guidelines for Accessing and Using Biodiversity Data***.** Chartered Institute of Ecology and Environmental Management, Winchester.

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Middleton, N. (2019). *Assessing Sites for Hibernation Potential. A Practical Approach, including a Proposed Method & Supporting Notes.* Unpublished.

Natural England (2015). *Method Statement for Great Crested Newt Mitigation.* https://www.gov.uk/government/uploads/system/uploads/.../gcn-method-statement.xlsm

10 Figures

Figure 1 – Location Map

Figure 2 – Waterbody Location Map

Figure 3 – Phase 1 Habitat Map

Figure 1 - Location Map

The Tallet,
Nupdown Road,
Oldbury-on-Severn,
BS35 1RS

Site Boundary

Date:	03/03/2022
Drawn by:	Joseph Wilkie
Checked by:	Robert Dunn

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Smart Ecology

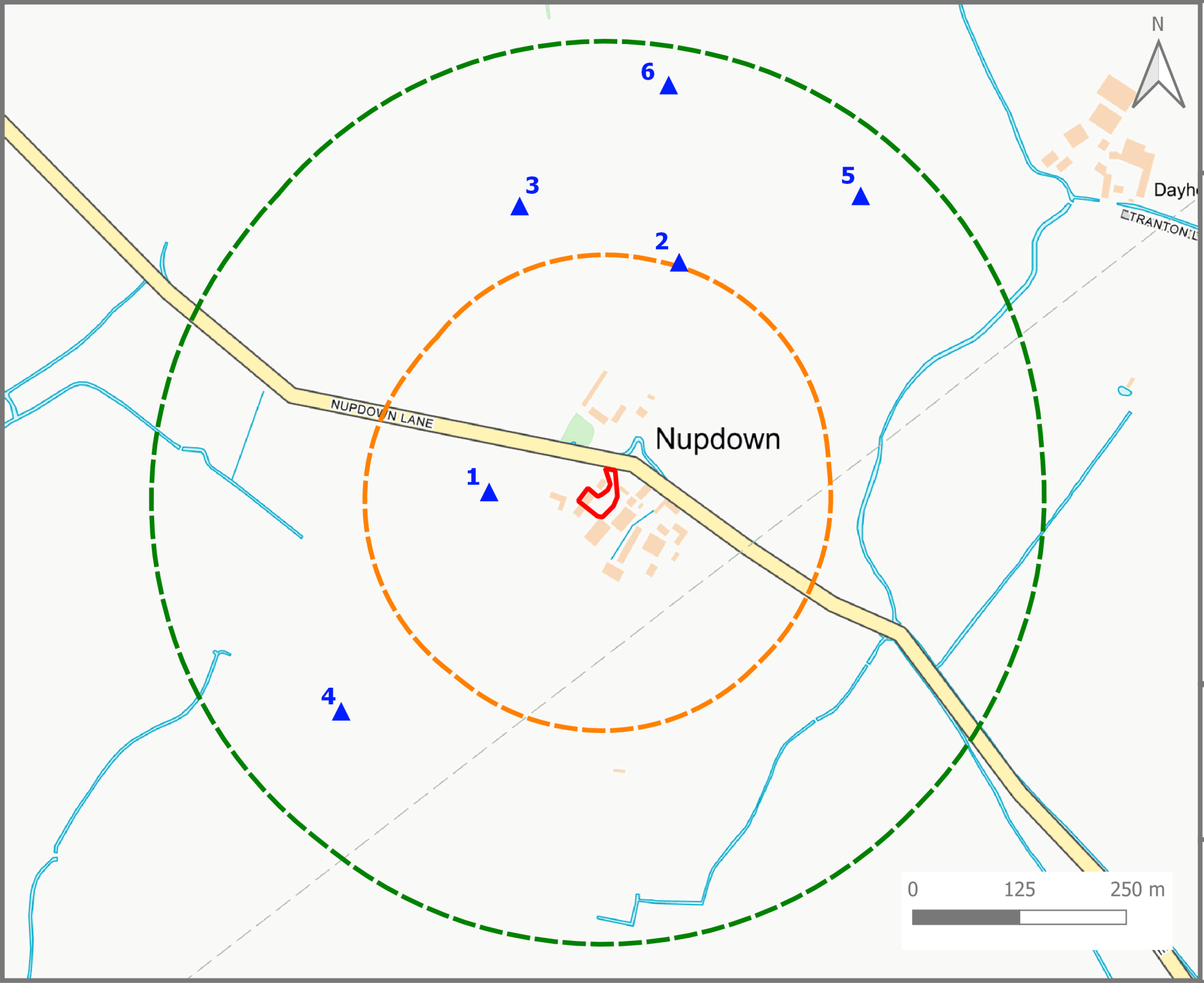

Figure 2 - Waterbody Location Map

The Tallet
Nupdown Lane
Oldbury-on-Severn
South Gloucestershire
BS35 1RS

- Waterbodies
- 250 m Buffer
- 500 m Buffer
- Site Boundary

Date:	03/03/2022
Drawn by:	Joseph Wilkie
Checked by:	Robert Dunn

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smart ecology

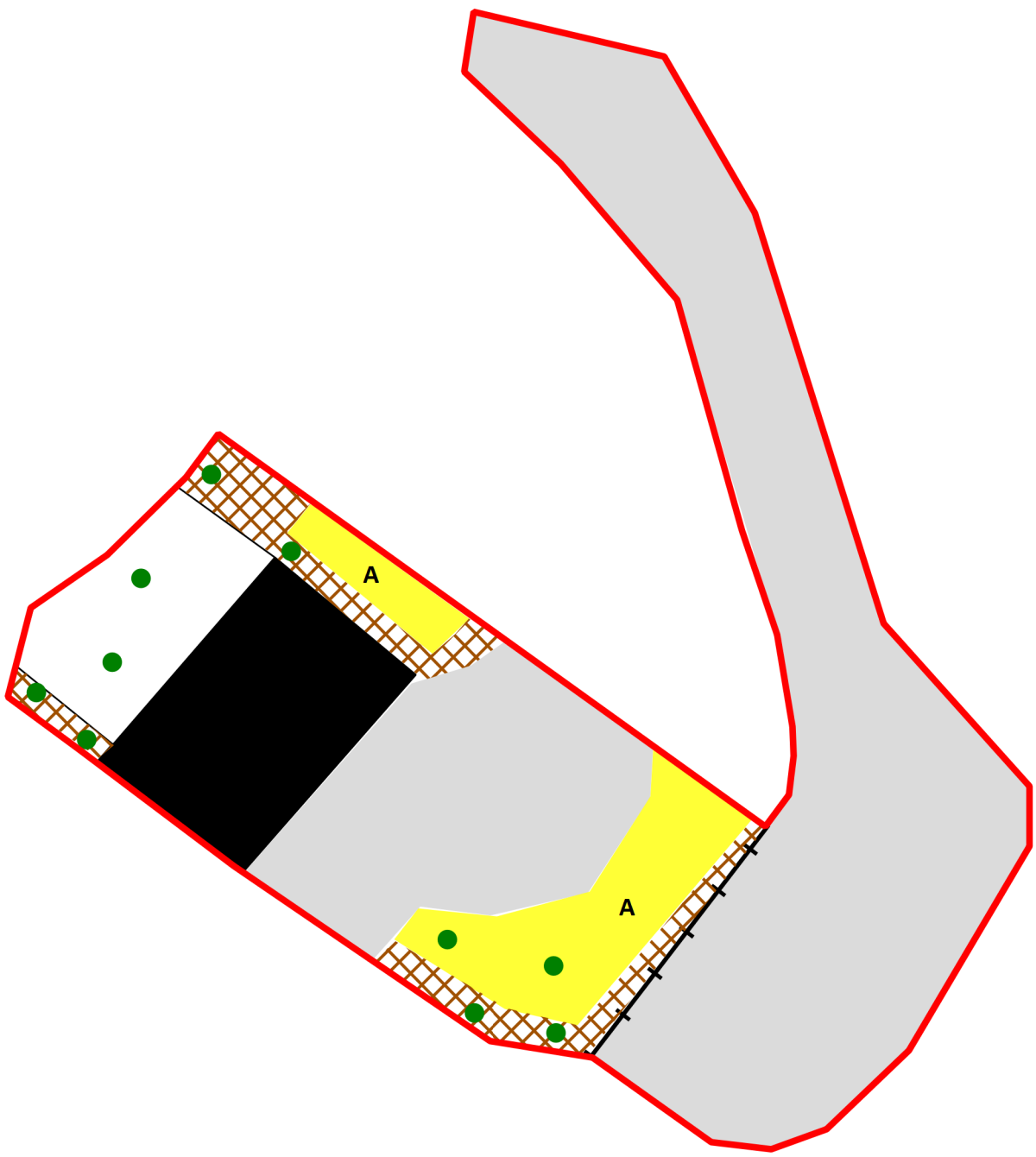

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Figure 3 - Phase 1 Habitat Map

The Tallet,
Nupdown Road,
Oldbury-on-Severn,
BS35 1RS

- A Amenity Grassland
- Building
- Fence
- Hardstanding
- Introduced Shrubs
- Poor Semi-Improved Grassland
- Scattered Trees
- Site Boundary

Not to scale. Indicitive positions only.

Date:	03/03/2022
Drawn by:	Joseph Wilkie
Checked by:	Robert Dunn

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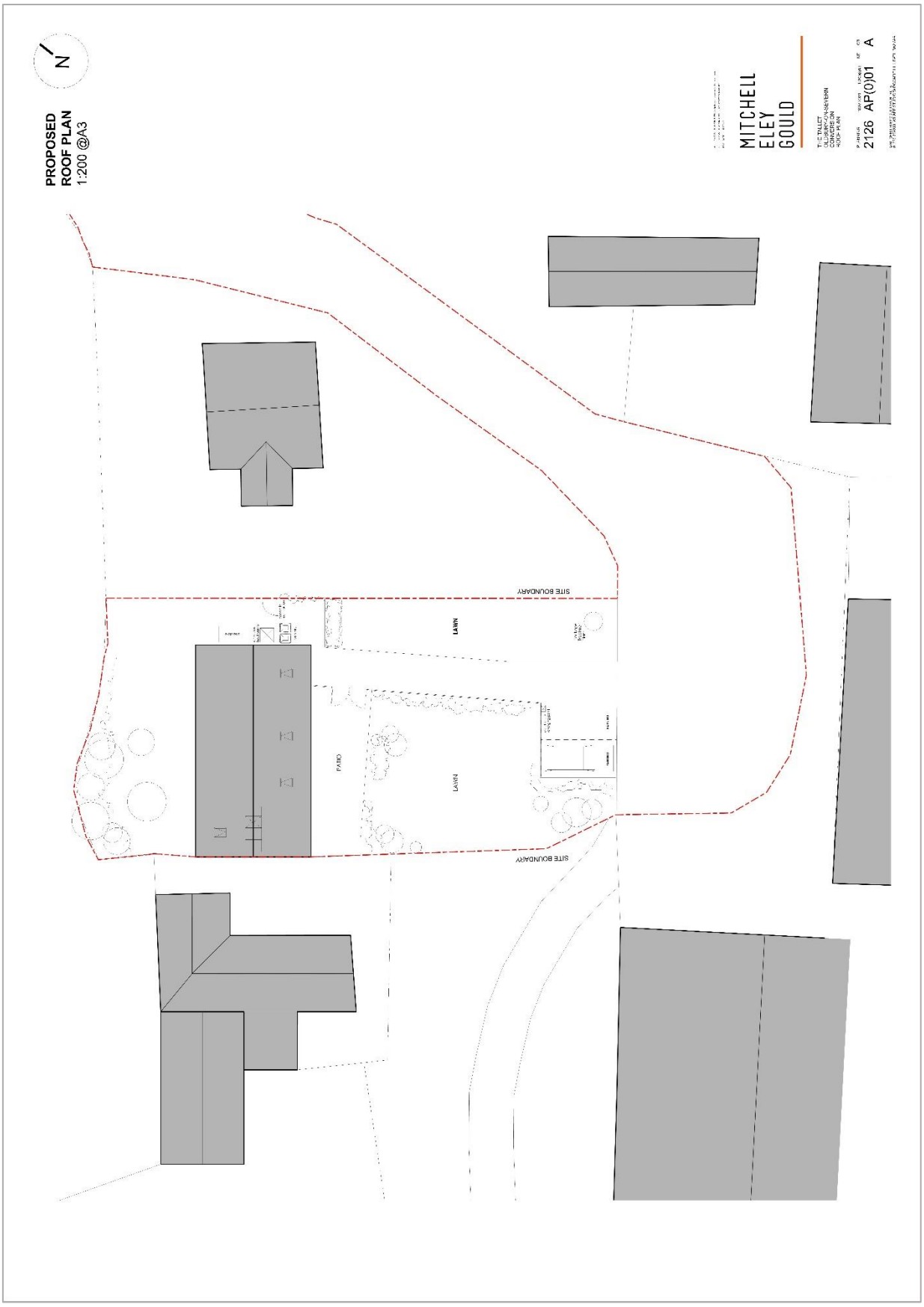
Appendix 1 – Proposed Site Plan

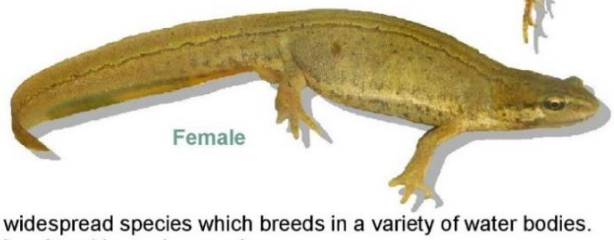


Appendix 2 – Newt Identification Guide

(Source: Amphibian and Reptile Conservation Trust)

Smooth newt

Grows to about 10 cm. Both sexes have orange or yellow belly stripe, with rounded black spots. Male has undulating crest running from head to tail tip.



A widespread species which breeds in a variety of water bodies. Often found in garden ponds.

After the 'tadpole' stage, young newts live on land. Most likely to be found from late summer to autumn as they disperse from ponds.

Palmate newt

Grows to 9 cm. Breeding male has ridge running along back, rather than a crest. Dark, webbed hind feet, and tail ends in filament.

There are two pale coloured nodules on the underside of the hind feet of female palmate newts.

Female looks similar to smooth newt.

Throat of palmate newt has no pigment (looks pink). Throat of smooth newt is off-white and usually spotted.

Great crested newt

Grows to 16 cm, but usually smaller. Crest in male has break at base of tail. Silvery-white stripe towards rear of tail conspicuous.

Both sexes have rough, granular skins and yellow/ orange bellies with irregular black spots.

Juveniles look like smaller versions of the female and may live on land or in the water.

Strictly protected species, requiring a licence to handle or disturb.

Appendix 3 – Preliminary Roost Assessment

Habitat Assessment

With reference to Collins (2016), it is assessed that habitats within the local landscape have **high suitability** for foraging and commuting bats; see Table A3-1 for details of the assessment. The presence of highly suitable habitats in the local landscape indicates a higher likelihood that bats may roost in buildings close to these habitats where suitable roosting opportunities are available.

Table A3-1: Habitat assessment results

Habitat and Environmental Context	Suitability Assessment Descriptions[1]		Description	Suitability[1]
General location	H	Rural	Rural location set among arable and pasture farmland.	**H**
	M	Suburban/intensive farmland		
	L	Dense urban		
Foraging habitat within 50 m	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Gardens and farmland.	**M**
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		
Foraging habitat within 2 km	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Approximately 80 % of area comprises arable and pasture farmland connected via hedgerows/tree lines. Remainder of area includes the River Severn, floodplain grazing marsh, and scattered orchards.	**H**
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		
Foraging habitat within 2 - 6 km	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Extensive section of the River Severn, further floodplain grazing marsh, scattered woodland (including ancient woodland) and orchards. Farmland bounded by hedgerows/tree lines.	**H**
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		

Habitat and Environmental Context	Suitability Assessment Descriptions[1]		Description	Suitability[1]
Commuting habitat	H	Continuous, high quality, well connected habitat (e.g. river valleys, hedgerows, tree lines, woodland edge)	Continuous connectivity to foraging habitat via hedgerows/tree lines. Also via the river.	**H**
	M	Continuous connected habitat (e.g. tree lines, linked back gardens)		
	L	Isolated habitats (e.g. gappy hedgerow, unvegetated stream)		
Overall Habitat Assessment Result				**HIGH**

[1] H = High; M = Moderate; L = Low

Building Survey

Table A3-2: Building survey results

General Photographs	
	
Eastern elevation	Western elevation
	
Interior	Interior

Interior (storage area)

Interior (storage area)

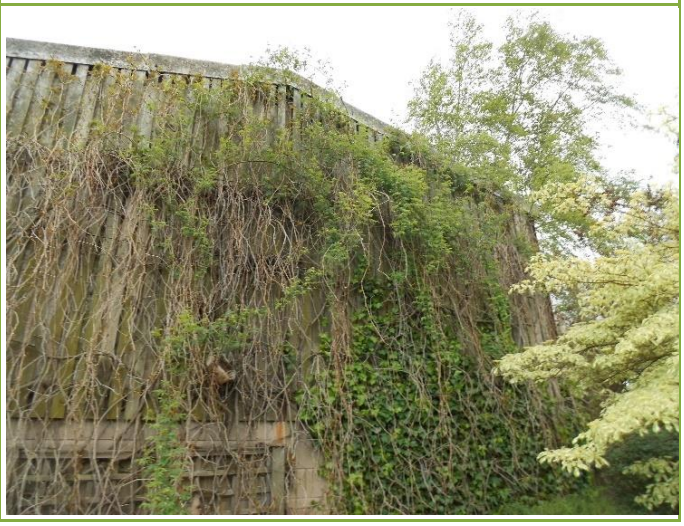
Interior (utility area)

Interior (utility area)

General Description	**Building description**	Metal framed portal building. Three internal rooms.
	Current use	Utility rooms and storage.
	Age	Unknown.
External Description	**Elevation construction**	Blockwork, partly rendered and corrugated metal sheeting (eastern elevation). Single skin timber cladding (northern, southern and western elevations).
	Roof type	Double pitched.
	Roof material	Corrugated asbestos style sheeting.
	Roof ridge orientation	Approximately north to south.
	Bargeboards/ fascias/soffits	Asbestos style bargeboards on gable ends.
	Windows/doors	One uPVC window on the eastern elevation. One wooden framed window on the northern elevation. Large metal garage door with wood frame on the eastern elevation.
	Lead flashing	None.
	Artificial lighting	Motion sensor security light (eastern elevation). Light spill from windows possible (north and eastern elevations).

External Potential Roost Features (See Appendix 4 for photographs)	• Gaps between cladding and wooden interior walls (P1). • Ventilation ridge tiles (P2).	
External Features for Birds	• Climbing vegetation on northern elevation (P3).	
Internal Description	**Number of roof spaces**	None – open up to the roof internally. No roof voids within internal rooms.
	Roof space dimensions	N/A
	Presence and extent of cobwebs	Abundant cobweb in the storage area. No significant cobwebs in utility rooms or under roof sheeting.
	Roof construction	Steel frame (main section). Exposed wooden joists (storage area).
	Roof lining	Unlined.
	Elevation construction	Blockwork. Rendered (utility rooms only).
	Natural light levels	Light (open area of building and utility rooms). Relatively dark (storage).
	Exposure to weather	Sheltered.
	Level of disturbance	Moderate.
	Flight space	Uncluttered.
	Artificial Lighting	Switch controlled strip lighting present throughout.
Internal Potential Roost Features (See Appendix 4 for photographs)	• On timber joists in the storage area (P4). • Gaps between timber wall boards and internal walls.	
Potential Access Points to Interior	• Numerous gaps between the blockwork walls, the upper wooden interior walls and the wooden ceiling boards, allowing access into the storage area and the main building section. • Ventilation gaps in the ridge tiles (P2). • Gaps beneath guttering (between roof sheets and metal sheet walls) on the eastern and western elevations (P5).	
Internal Features for Birds	• None.	
Evidence of Bats	• Approximately 30 droppings under timber joists in the storage area (P6).	
Evidence of Birds	• None.	
Bat Roost Suitability Assessment	**CONFIRMED ROOST (Active Period)** **NEGLIGIBLE (Hibernation Period)** Roost features would not provide stable temperature and humidity conditions typically required during the hibernation period.	

Appendix 4 – Building Survey Photographs

Number	Description	Photograph
P1	Example of the gap present between cladding and wooden interior wall.	
P2	Ventilation ridge tiles.	
P3	Climbing vegetation on the northern elevation of the building.	

Number	Description	Photograph
P4	Exposed timber joists in the storage area.	
P5	Gap beneath guttering (between roof sheets and metal cladding).	
P6	Approximately 30 droppings under timber joists in storage area.	

Number	Description	Photograph