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Site Address: Land adjacent to The Wallers
Cefn
Buttington
Powys
SY21 8SZ

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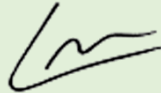
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The report should be read in its entirety.

Questions arising from the survey report should be directed to the author of the report who will be pleased to clarify any technical issues raised.

Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive. Many species are cryptic and transitional in habit.

Reports are considered valid for one year for planning purposes, after which time further survey information may be required.

Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

The use of this report or survey data for any form of formal submission to an NGO or other authority implicitly implies acceptance of the terms and conditions.



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1 Executive Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Steve Bowen on behalf of the client, Mid Wales Planning Development Ltd, to undertake a preliminary ecological appraisal of the land adjacent to The Wallers to provide supporting information for a planning application for construction of a residential development.

The survey report has these principal aims:

- To provide an initial assessment of the ecological value of the site in local context.
- To provide details supporting further surveys that may be required.
- To identify potential ecological constraints relating to the development, and recommend measures to avoid, reduce or manage negative effects, and to provide a net ecological gain.

1.2 Methodology

The appraisal included a desktop study, and a site visit undertaken at the site, OS grid reference SJ27341071 on 8th November 2021 by Ben Jones.

1.3 Key Impacts and Mitigation Measures

The desktop study included a search for nearby designated sites and previously recorded protected species. It was considered that the site would provide potential habitat for badgers and water vole due to the presence of a brook, and these should be the main focus of the ecological appraisal.

The site comprises an approximately 1ha semi-improved pasture grassland field split into two by a stockproof post and wire fence, all of which will be developed. The site is of low ecological value, but the hedgerow bordering the road is set to be removed, so work will need to be done under a method statement.

There are no still bodies of water within 250m, although there is a brook running along the northern boundary which has been taken into consideration. Amphibians are therefore unlikely to be using the site, however the presence of patches of ruderal allows potential refugia, therefore removal of these areas should be done at an appropriate time of year.

There was no roost potential for bats, therefore no further surveys are required, however it is important that the brook flowing along the northern boundary be maintained as a dark corridor for foraging and commuting bats.

No evidence of non-bat mammals was seen on site; however, enhancement hedge planting is recommended for commuting small mammals, to mitigate for the loss of the hedgerow alongside the road.

No nesting birds were observed, but the hedgerow and tree species provide potential for nesting. Hedge removal must therefore be done at an appropriate time of year.

No evidence of invasive species was observed on site, however due to historical records of Himalayan balsam on the land in 2017 care should be taken when removing vegetation near the watercourse, and if invasive species found, work will then commence under a strict method statement.

Work can continue without a licence but under a method statement once planning permission has been granted.



1.4 Conclusion

It is recommended that the biodiversity value of the site will be enhanced post-construction with the inclusion of bat and bird boxes. The landscaping will also be improved by planting new native species hedgerows and trees around site and between dwellings where applicable.

The method statements provided in section 6.3.2, 6.4.2, 6.5.2, 6.6.2 and 6.8.2 of this report will be followed, and work will be conducted at a suitable time of year to minimise potential impacts.

There are no other ecological constraints to the development as currently proposed.

Table 1.1. Timing of Works

Action	Timing	Justification
Update phase 1 survey	After 12 months from report issue date	Ecological features can change and develop over time
Removal of hedgerows	September to February inclusive	To avoid nesting birds
Removal of ruderal areas	Mid-February to May	Newts least likely to be hibernating in refugia
Planting of new hedges	After completion	Provide mitigatory nesting areas for birds, and connectivity enhancements for mammals



2 Introduction

This report has been compiled by Rebecca Wilson BSc(hons) MSc PhD. It has been reviewed in line with Greenscape's Quality Management System.

For full details of surveyors and licences please see Appendix A.

2.1 Project Background

Greenscape Environmental Ltd was commissioned by Steve Bowen to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of value. This forms part of the planning application for the construction of a residential development on an area of land adjacent to The Wallers.

2.2 Purpose of the Report

This report aims to:

- Identify the key ecological constraints to the proposed development.
- Inform planning to allow significant ecological effects to be minimised or avoided where possible.
- Allow any necessary mitigation or compensation measures to be developed following the mitigation hierarchy.
- Identify any additional surveys that may be required to inform the assessment.
- Identify the opportunities offered by a project to deliver ecological enhancement under NPPF Section 15.

The Local Planning Authority will require further information regarding protected species because of the destruction of potentially priority habitat.

2.3 Site Context and Location

The site is located to the northwest of Welshpool, OS grid reference SJ27341071. It is set in a rural environment surrounded by open farmland, with a small housing estate to the southwest. There is moderate connectivity to surrounding countryside and wooded areas via treelines and a small brook. There is a strip of forest running north to south 900m to the west, and a large area of woodland 1.4km northeast. A stream runs adjacent to the land along the northern boundary. The surrounds provide potential foraging, resting, and commuting opportunities for bats, nesting birds, non-bat mammals, amphibians, and reptiles.



3 Methodology

Broad methodologies for data collection and interpretation were informed by guidance outlined in CIEEM (2017) – Guidelines for Preliminary Ecological Appraisals. Full details can be found in Appendix B.

3.1 Desk Study

The desk study provides contextual information such as the site's proximity to designated areas and known records of protected or notable species.

3.2 Field Survey

3.2.1 Date and Survey Conditions

Table 3.1. Survey conditions

Date	Time	Equipment Used	Weather
08/11/2021	13:00	Camera, net	Overcast, wet underfoot, 8°C
Comments	Two surveyors used: Ben Jones, Rebecca Wilson		

3.2.2 Habitats

The level of survey is aimed to identify field signs of, or habitats with the potential to support protected species and therefore assist in the determination of site value.

3.2.3 Hedgerows

The aim of the assessment is to ascertain whether the hedgerow could be classified as important according to the definitions listed in the Hedgerow Regulations (1997).

3.3 Species Survey

Features on site were assessed for potential for bat roosts, foraging and commuting.

Badger surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No. 096 (2003).

An assessment of habitat suitability for water vole was conducted by methods adapted from Harris *et al.*, (2009).

An assessment of otter habitat suitability was conducted following Natural England Standing Advice and the Scottish Borders Council Technical Advice Note#2.

Features on site were assessed for potential for nesting birds.

The terrestrial habitats at the application site were surveyed and assessed with respect to suitability and potential value for great crested newts.

3.4 Constraints of the Survey

All areas were accessible for this survey. It was conducted at a sub-optimal time of year for the assessment of nesting bird and bat activity, but this was not considered a constraint because evidence left can be seen year-round. No other specific constraints have been identified.



4 Baseline Ecological Conditions

4.1 Nearby Features of Importance

4.1.1 Designated Sites

The map from Natural England presented in Figure 4.1 indicated that the site is within 1km of one designated area.

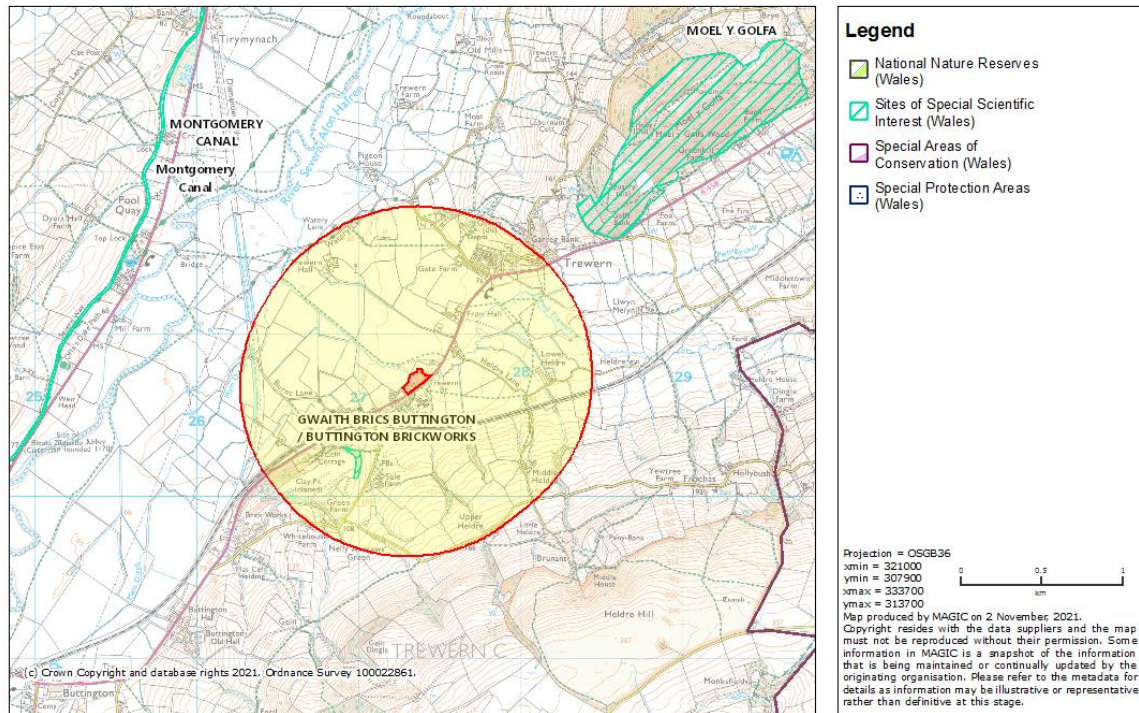
MAGIC**Land at The Wallers, Cefn**

Figure 4.1. Identifying any designated areas near site, a 1km buffer is shown

Table 4.1. Details of statutory designated sites within 1km

Type of Designation	Site Name & Ref	Reason for Designation	Distance & Direction
Statutory - SSSI	Buttington brickworks	Geological	600m Southwest



4.2 Habitats on Site

The site comprises a semi-improved pasture grassland (B2.2) of no botanical interest divided into two fields by a stockproof post and wire fence (J2.4).



Figure 4.2. Field divided by post and wire fence

The grassland contained several species including creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), thistle (*Cirsium sp.*), common nettle (*Urtica dioica*), dandelion (*Taraxacum officinale*) and greater plantain (*Plantago major*). Some wetter areas of the fields contained soft rush (*Juncus effusus*), and there were some areas of ruderal vegetation.



Figure 4.3. Field proposed for development as seen from north-eastern corner looking southwest



Figure 4.4. Areas of soft rush within field



Figure 4.5. Patch of ruderal in southern most field



Figure 4.6. Species found in the field



Figure 4.7. Thistles seen across the site

The field perimeter adjacent to the main road consists of a mixed hedgerow (J2.1.2) comprised primarily of hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), and wild rose (*Rosa sp.*).



Figure 4.8. The hedgerow along the south-eastern boundary

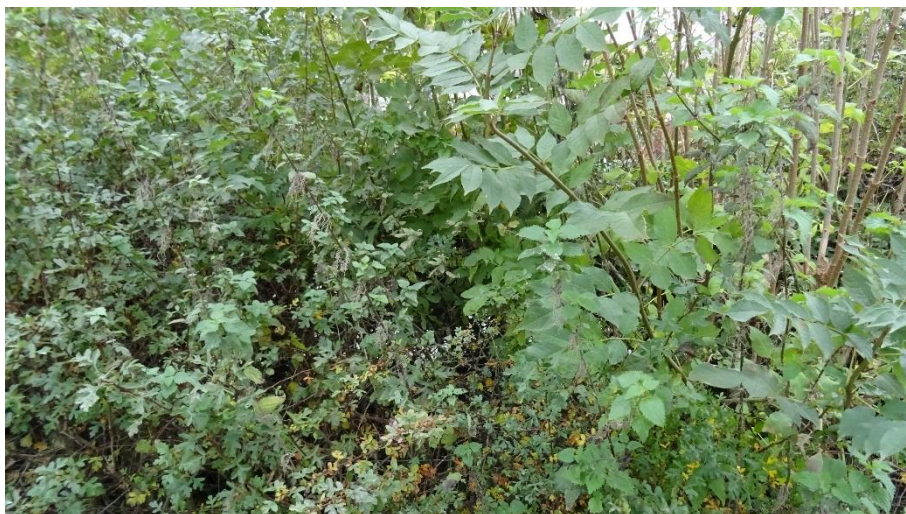


Figure 4.9. Hedgerow species mix



At the northern end of the field, there is a small, shallow brook (G2) forming the northern boundary, bordered by large areas of ruderal (C3.1). This area also contains several trees including alder (*Alnus glutinosa*), Hawthorn and willow (*Salix sp.*).



Figure 4.10. Northern boundary brook



Figure 4.11. Hawthorn trees bordering the brook



Figure 4.12. Maple, ash, and alder trees bordering the brook



4.3 Bats

4.3.1 Records

Records of bats within 2km include brown long eared bat (*Plecotus auritus*), noctule bat (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*P. pygmaeus*) 480m southwest of site in 2018. There are historic records of Daubenton's bat (*Myotis daubentonii*) from 1997 2km west of site. Natterer's bat (*Myotis nattereri*) were recorded 1.5km north of site in 2007 alongside lesser horseshoe bats (*Rhinolophus hipposideros*).

4.3.2 Field Observations

The site had no features of value for roosting bats. The trees on site had no cracks or crevices that might provide suitable roosting, and ivy cover was generally small and thin stemmed. The brook along the northern boundary is likely to be used by foraging and commuting bats.

4.4 Other Mammals

4.4.1 Records

Records of other mammals within 2km include brown hare (*Lepus europaeus*) 860m north of site in 2013, numerous records of Eurasian badger (*Meles meles*), many of which are roadkill along the A458. European otter (*Lutra lutra*) have been recorded in a number of areas 1.5 – 2km northwest of site, most recently in 2012, with a more recent record of a dead otter 600m southwest of site alongside the A458 in 2019. European hedgehog (*Erinaceus europaeus*) have been recorded in many locations both deceased and alive, with the most recent record from 2020 230m southwest of site.

4.4.2 Field Observations

There was no evidence of any mammals of principle importance on or around the site. One small field vole (*Microtus agrestis*) hole was seen, and two areas exhibit scrapings typical of rabbits (*Oryctolagus cuniculus*). The brook was checked for signs of water vole (*Arvicola amphibius*), but no evidence was seen.



Figure 4.13. Evidence of field vole in the northern field



4.5 Birds

4.5.1 Records

Records of birds within 2km include common passerine species including blue tit (*Cyanistes caeruleus*), great tit (*Parus major*) and house sparrow (*Passer domesticus*). All bird records are provided with low accuracy grid references so specific locations cannot be determined.

4.5.2 Field Observations

No evidence of or potential for ground nesting birds was found. The hedgerows and trees will provide potential suitable nesting habitat at an appropriate time of year. No evidence of nests was seen, but the survey was conducted outside of nesting season.



Figure 4.14. Hedgerow along the roadside set to be removed



4.6 Amphibians

4.6.1 Records

Records of amphibians within 2km include palmate newt (*Lissotriton helveticus*) 960m southwest of site in 2020, common toad (*Bufo bufo*) 1.5km northeast of site in 2012, and slow worm (*Anguis fragilis*) 2km northeast of site in 2008.

4.6.2 Field Observations

There were no ponds within 250m. The majority of the field is of no value for amphibians in their terrestrial phase, but the hedgerow base and the areas of ruderal would provide good shelter and hibernation sites for amphibians in the area.



Figure 4.15. Area of brash, domestic waste and ruderal seen in southern field which could provide potential refugia for amphibians

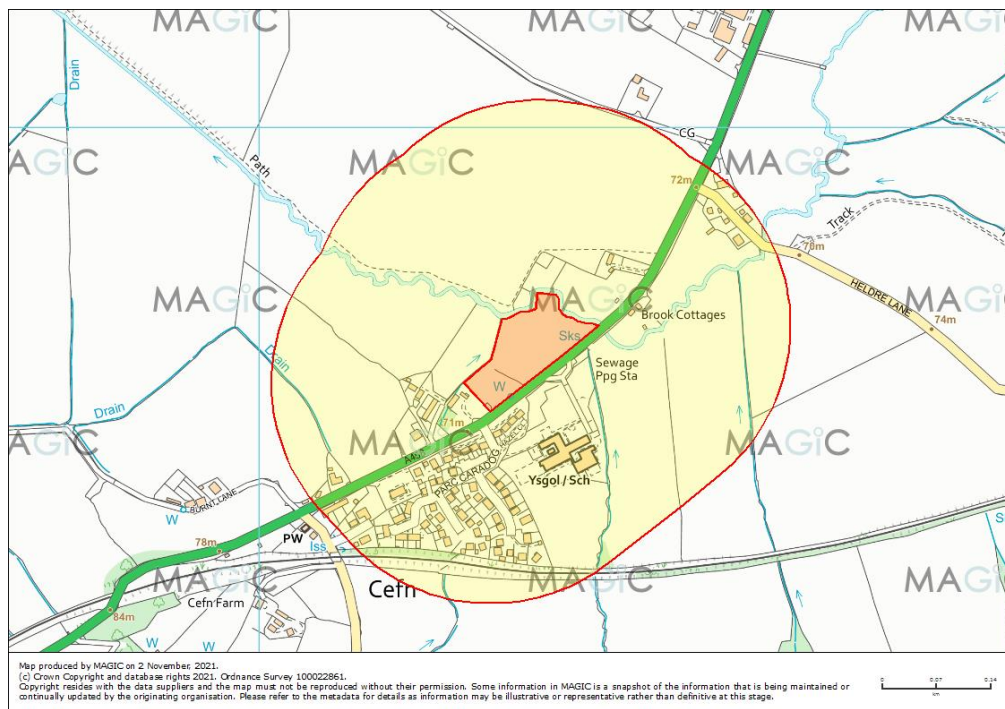


Figure 4.16. OS Map showing a 250m buffer around site, showing lack of ponds



4.7 Reptiles

4.7.1 Records

Records of reptiles within 2km include slow worm (*Anguis fragilis*) 2km northeast of site in 2008.

4.7.2 Field Observations

There was no basking habitat and limited shelter for reptiles on site.

4.8 Invasive Species

4.8.1 Records

Records of invasive species within 2km include giant hogweed (*Heracleum mantegazzanum*) 1.85km west of site in 2019, Himalayan balsam (*Impatiens glandulifera*) in 2017 adjacent to site, south of the surveyed fields.

4.8.2 Field Observations

No evidence of invasive species was seen in the hedgerows or alongside the water course.



5 Description of Proposed Development

At the time of writing there are no definite plans, but in 2018 outline planning was granted for three dwellings on the southern section of the site.

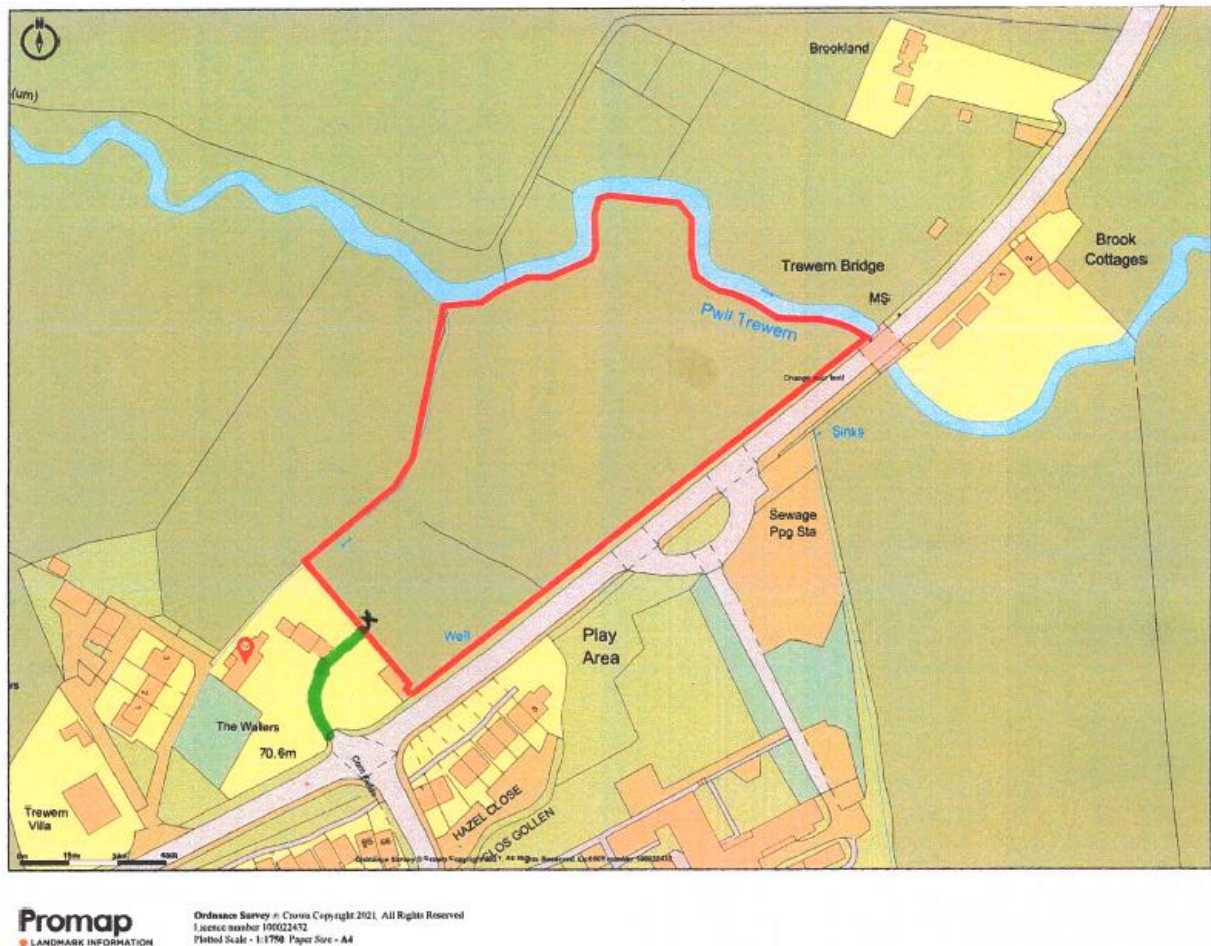


Figure 5.1. Location plan



6 Impacts, Enhancements and Mitigation

6.1 Nearby Features of Importance

Figure 4.1 shows that the nearest SSSI is 600m away, however as the reason for the designation is geological, and the area is separated from site by a housing estate, it is unlikely that such a development would have a negative impact on any species of importance.

6.2 Habitats on Site

6.2.1 Impacts

As the site is not comprised of any habitats of principal importance listed in Section 41 of the NERC Act (2006), mitigation will be delivered at a species level.

6.2.2 Enhancements

In order to obtain an ecological net gain for the site, the remaining green spaces and site boundaries will require enhancement for local wildlife.

It is recommended that the landscaping around the site will include some hedge planting to enhance the area for biodiversity.

Plants to use for landscaping and gapping-up of existing boundaries will include locally sourced native species. These will be planted in accordance with BS3936 (part 1, 1992, Nursery Stock, Specifications for trees and shrubs). Planting will occur between November and April depending on the timing of the development.

Table 6.1. New hedge planting scheme

Common Name	Latin Name	Distribution (%)
Hawthorn	<i>Crataegus monogyna</i>	35%
Blackthorn	<i>Prunus spinosa</i>	35%
Hazel	<i>Corylus avellana</i>	15%
Holly	<i>Ilex aquifolium</i>	15%

Table 6.2. Fruiting plant enhancement

Common Name	Latin Name
Crab Apple	<i>Malus sylvestris</i>
Wild Cherry	<i>Prunus avium</i>
Wild Pear	<i>Pyrus communis</i>

Trees

Trees to be used should be from the list below. These should also be native species, locally sourced where possible.

Table 6.3. Trees proposed for enhancement

Common Name	Latin Name
English Oak	<i>Quercus robur</i>
Sessile Oak	<i>Quercus petraea</i>
Lime	<i>Tilia cordata</i>
Rowan	<i>Sorbus aucuparia</i>
Silver Birch	<i>Betula pendula</i>

6.2.3 Monitoring

All habitat enhancements will be monitored post-development and any failing plants or features will be addressed as appropriate to maintain the value of the enhancement.



6.3 Bats

6.3.1 Impacts

There are no buildings on site, and the trees had no PRF so there will be no loss or damage to roosts or any potential for death or damage of individual bats. The brook along the northern boundary, alongside the presence of pigs in the opposite field, presents excellent foraging and commuting potential for bats which could be impacted by this scheme if illuminated by lighting. It is recommended that this area remain as a dark corridor, following the lighting scheme in section 6.3.2.

6.3.2 Compensation & Enhancements

It is recommended that permanent provision be made for roosting opportunities for bats with the inclusion of an integral bat box in at least 10% of the new buildings. This will be erected at a height of 3-4 m and in a southerly, westerly or easterly facing direction.

Enclosed Bat Box (B and C)

- Designed specifically for the pipistrelle bat
- Available in all brick types
- Discrete home for bats
- Various sizes
- Several roosting zones are created inside the box
- Bats are contained within the bat box itself
- Maintenance free with entrance at the base
- Ideal for new build & conservation work



Bat Box B



Bat Box C

Eco Habitats for Bats	Sizes (mm)	Durability
Bat Box Type A	215 x 65	F2 S2 – Fully Frost Resistant
Bat Box Type B	215 x 215 or 215 x 290	F2 S2 – Fully Frost Resistant

Figure 6.1. Example integral bat box



Lighting

Lighting needs to be designed to have minimal impact on bats and their commuting and foraging areas. This results in the recommended use of downlights and the horizontal spread of lighting to be kept to a minimum.

Where it is not possible to reduce the horizontal spread of light, a 2700°K to 3000°K LED light bulb is recommended, which will provide a warm white light. This range has the least impact on bats and invertebrates.

1. A lighting scheme will be drawn up in line with ILP and BCT Guidance Note 08/18.
2. All newly proposed external lighting will be directed away from any vegetated boundary features to retain dark corridors for commuting bats.
3. There will be no direct illumination of any enhancement features erected for bats.
4. There will be no direct illumination of the waterway along the northern boundary.
5. All domestic lighting will be below 10 lux, orientated towards the ground and controlled by PIR (Passive Infra-red), set on a short timer.



Figure 6.2. Example external down light design

6.4 Other Mammals

6.4.1 Impacts

While there were no signs of hedgehog or badger on site, the loss of the boundary hedgerow could result in the loss of a corridor for non-bat mammals. No impact on the brook is expected.

6.4.2 Mitigation and Enhancements

Hedgehog

Fences within and around the development will include holes at the base to allow hedgehogs to move freely.

The holes will measure 13x13cm. Hedgehog Highway signs will be installed above the holes to highlight their purpose, these can be purchased from <https://ptes.org/shop/just-in/hedgehog-highway/>.

The new homeowners welcome pack will include details of hedgehog friendly features.



6.5 Birds

6.5.1 Impacts

Work at this site will include tree and hedge removal which could affect nesting birds if conducted during the nesting season.

6.5.2 Mitigation and Enhancements

1. Any tree or hedge removal will be done outside of the bird nesting season, which is March to August inclusive. If this is not possible, a suitably experienced ecologist will conduct a check within the 24 hours prior to work commencement to ensure no nesting birds will be affected.
2. Should a nesting bird be found, a 4m buffer will be left around the nest, and no further disturbance conducted until the young have fledged.
3. It is recommended that a range of woodcrete boxes are erected around the site to provide an enhancement for passerine birds, and a selection of the following would be appropriate.



Cedarwood Sparrow Terrace



Schwegler 1b Bird Box



Schwegler 1ZA Roundhouse
Wren Box

Figure 6.3. Bird boxes

6.6 Amphibians

6.6.1 Impacts

There were no ponds within 250m, therefore no impact on newts is deemed likely, however there were patches of ruderal around site, which could potentially provide refugia for amphibians during their terrestrial phase.

6.6.2 Mitigation

The ruderal patches will be cleared in spring when amphibians are least likely to be sheltering amongst the roots.

6.7 Reptiles

No evidence of reptiles was seen on site and little habitat of value, therefore no impact on reptiles is deemed likely, and no further consideration required.



6.8 Invasive Species

6.8.1 Impacts

There was no evidence of invasive species on site, however the records show the presence of Himalayan balsam at the adjacent residential property to the southwest of the proposed site. As such, care should be taken during works, particularly around the waterways following the method statement below.

6.8.2 Management

Himalayan Balsam

If Himalayan balsam is found on site after work commenced, it will need to be managed. In order to manage Himalayan balsam, it will be removed from the site by hand. The stems will be pulled in May-June before the seed pods have developed. The stems are notoriously easy to pull as they have very short root systems.

The pulled stems will be composted away from any features that might spread parts of the plant.

The pulling and composting will be done every year for the next few years where necessary to avoid the recurrence of species from seeds currently dormant in the soil.

6.8.3 Monitoring

Any invasive plant species on site will be treated as per the recommendations in this report, and any recurrence will be noted and treated in the same way as an ongoing process.



7 Concluding Remarks

The survey has focussed on the potential habitats or protected species to be damaged or destroyed as part of this development.

The development can proceed without the loss of habitat of significant value, and without the loss of the favourable conservation status of any protected species. As there is no evidence of protected species within and around the development site, there is no requirement to address the three tests under Regulation 55 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

There were no buildings on site, and the trees had low potential for PRF so no impact on roosting bats is expected. The brook on the northern boundary of the site provides high potential for foraging and commuting corridors for bats, and care should be taken to ensure this remains a dark corridor.

Potential habitat for nesting birds was found in the hedgerow boundaries and trees. The removal of the hedge is to commence outside of bird nesting season, and compensatory hedgerows of native species be planted around the site after completion of works.

No evidence of protected mammal species was observed on site, however, the removal of the hedgerow could have a negative impact on commuting mammals, therefore hedge planting where possible will provide compensatory habitat.

There are no ponds within 250m of the area, therefore no amphibians are expected on site, though hedges provide potential commuting opportunities and the patches of ruderal provide potential refugia, therefore it is recommended these areas be removed in early spring when amphibians are least likely to be there.

No evidence of, or potential habitat for reptiles was seen on site, so no negative impact is expected.

There was no evidence of invasive species during the site visit, however records show Himalayan balsam was found on the adjacent land in 2017. As such work can continue provided care is taken when removing areas of vegetation near the watercourse. If Himalayan balsam is discovered on site, work will then continue under the guidance of a method statement.

The method statements provided in sections 6.3.2, 6.4.2, 6.5.2 and 6.8.2 of this report will be followed and works will be done at a suitable time of year. Other than those listed above, there are no ecological constraints to the development as currently proposed.



Appendix A – Surveyor Details

Table A.1. Details of surveyors' experience and licences held

Name	Membership of associations/ experience	Licenses
Ben Jones BSc(hons) MSc	Lead Consultant Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 6 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS <u>Wales:</u> Bats – S088669-2 GCN – S087992-1
Logan Maggs BSc(hons)	Lead Consultant Logan has a degree in Conservation and Land Management. He has over 10 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2016-24901-CLS-CLS GCN - 2017-29218-CLS-CLS <u>Wales:</u> Bats – S086874/1 Newts - 79665:OTH:SA:2018
Rebecca Wilson BSc(hons) MSc PhD	Rebecca has a PhD in bioenergy crop cultivation and has been assisting with ecological surveys in 2021	



Appendix B – Methodology

Desk Study

Table B.1. Data sources

Organisation/Resource	Information Assessed
BIS	Protected/UK BAP Species records (2km)
MAGIC website	International statutory designations (1km) <ul style="list-style-type: none">• Special Protection areas (SPA)• Special Areas of Conservation (SAC)• RAMSAR sites National statutory designations (1km) <ul style="list-style-type: none">• Sites of Special Scientific Interest (SSSI)• National Nature Reserves (NNR) EPS Licenses for protected species (2km)

A data search was purchased from BIS on 5th November 2021

A search on Multi Agency Geographic Information for the Countryside (Magic Maps) determined nearby designated areas. The map is presented in Section 4.1.

Field Survey

An assessment of habitats was conducted broadly following the JNCC Handbook for Phase 1 Surveys 2010.

The level of survey is aimed to identify field signs of or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

Determination of Ecological Value is based on the general criteria provided by IEEM (IEEM 2006).

Table B.2. Criteria of ecological values

Ecological Value	Description and Examples
High	Habitats or features that have high importance for nature conservation, such as statutory designated nature conservation sites of international or national importance or sites maintaining viable populations of species of international or national importance (e.g. Red Data Book species; European protected species).
Medium	Sites designated at a county or district level, e.g. Local Wildlife Site (LWS), ancient woodland site, ecologically 'important' hedgerows or ecological features that are notable within the context of a region, county or district (e.g. a viable area of a Priority Habitat on the county BAP or a site that supports a viable population of a county BAP species).
Low	Sites of nature conservation value within the context of a parish or neighbourhood, low-grade common habitats, such as arable fields and improved grasslands and sites supporting common, widespread species.



Hedgerows

The aim of the assessment is to ascertain whether the hedgerow could be classified as important according to the definitions listed in the Hedgerow Regulations 1997.

The hedgerow is measured and gaps within a hedge included in the total length as long as the gaps are 20m or less in length.

The total number of woody species present was recorded in the following manner:

- Where the length of the hedgerow did not exceed 30m the total number of woody species present in the hedgerow was recorded
- Where the hedgerow was between 30m and 100m the number of woody species present in the central 30m was recorded
- Where the length was between 100m and 200m the number of woody species in the central 30m stretches of 2 halves of the hedgerow were counted and the mean of the 2 halves calculated
- Where the length of the hedge was over 200m the hedge was divided into thirds and the central 30m of each section counted and the mean calculated

The hedgerow height, width, integrity, structure and management history was recorded.

Notes were made of the following in accordance to the criteria outlined in Schedule 1 of the Hedgerow Regulations 1997:

- Evidence of certain species of birds, animals or plants listed in Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended)
- Number of woody species on average in a 30m length
- Presence of rare tree species such as Black Poplar, Large Leaved lime, Small leaved Lime, Wild Service tree
- Number of standard trees within each 50m length
- Percentage of gaps in the hedge
- Presence of ditches, banks or walls
- Numbers of connections with other hedgerows, ponds or woodland
- Presence of parallel hedgerow within 15m of the hedge
- Presence of bridleways, footpaths, byways of public paths

Non-woody ground flora species listed in Schedule 2 of the Hedgerow Regulations were recorded.

Species Surveys

Bats

Methodology used is in accordance with recommendations by BCT, Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition, Collins (2016).

Features on site were assessed for potential for bat roosts, foraging and commuting.

All trees were assessed from ground level. All trees examined were categorised on their potential roost features (PRF). These features include cracks, splits in limbs, cavities, loose bark and thick stemmed ivy. Where appropriate and accessible these features were assessed using binoculars and/or endoscopes.

**Table B.3. Categorisation of trees for bats**

Value for Bats	Example Features
Negligible	A tree that lacks the requisite features to support roosting bats
Low	A tree that contains a feature or features that clearly offer little roosting habitat for bats
Moderate/High	A tree that provides one or more potentially suitable roosting features for bats
Confirmed roost	Bat presence has been confirmed

Daytime surveys were conducted with the aid of a strong torch and a pair of Pentax Papilio 8.5x21 close focus binoculars. Bat species may leave little evidence of their presence.

Evidence for the presence of bats includes:

- Holes, cracks and rot holes used as roosts, marked by streaks of urine and faeces.
- Smoothed, darkened edges where bats have rubbed and left natural body oils when entering and exiting a space.
- Feeding signs such as discarded insect wings under a feeding point.
- Presence of roosting or dead bats in or behind any object.

Badgers

Surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No 096 (2003).

Daytime surveys for badgers involved looking for:

- Scrapings where badgers have dug for food or used as latrines.
- Signs of a sett, including signs of use such as presence of badger hair.
- Tracks and prints.

Water Vole

An assessment of habitat suitability for water vole and otter was conducted by methods adapted from Harris *et al.*, (2009). The standard survey methodology; Strachan and Moorhouse (2006), was used for surveying for water vole. This involved searching for latrines, burrows, footprints, runs, feeding remains or lawns.

Otter

An assessment of habitat suitability for otters was conducted using guidance from Natural England Standing Advice and the Scottish Borders Council Technical Advice Note#2.

Daytime surveys for otter include searching for:

- Otter prints
- Paths and slides along the riverbank
- Spraints (droppings)
- Feeding remains
- A holt
- Couches (resting places used in the day)

Signs of mink are also recorded.



Birds

Searching for evidence of nesting birds, including barn owls, involved looking for:

- Presence of nests
- Collections of droppings and/or feathers
- Highly distinctive droppings or splats under roosting points.
- Presence of owl pellets/feathers
- Listening for bird song
- Recording bird activity

Amphibians and Reptiles

The terrestrial habitats at the application site were surveyed and assessed for their suitability and potential value for the support of GCN. The general topography, ground conditions and presence or absence of vegetation were recorded. A refugia search was conducted for amphibians and reptiles by looking under any logs, large stones and other debris.



Appendix C – Policy

The following areas of policy and legislation are of relevance to ecology and provide context to the surveys conducted. Findings presented in this report are in line with the following:

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – as listed in:

- Schedule 2. European protected species of animals
- Schedule 5. European protected species of plants

The Wildlife and Countryside Act (1981) – as listed in:

- Schedule 1. Birds protected by special penalties at all times
- Schedule 5. Protected animals
- Schedule 8. Protected plants

Countryside and Rights of Way Act (2000)

Hedgerow Regulations (1997)

The Protection of Badgers Act (1992)

Natural Environment and Rural Communities (NERC) Act (2006)

Planning Policy Wales 2002, updated Dec 2018

Section 6.4 – Biodiversity and Ecological Networks

The Nature Recovery Plan for Wales – Setting the course for 2020 and beyond (2015)

Environment Act (Wales) (2016)

Section 7

Powys Local Development Plan: Policy DM2 – The Natural Environment



Hedgerows

All hedgerows are potentially protected by the Hedgerow Regulations 1997. Under these regulations it is against the law to remove or destroy certain hedgerows without permission from the LPA. These Regulations do not apply to any hedgerow within the curtilage of or marking the boundary of a dwelling house.

Permission is required before removing hedges that are least 20m in length and over 30 years old. Permission is gained by submitting a Hedgerow Removal Notice to the LPA as set out in Schedule 4 of the Regulations.

Permission is not required in the following instances:

- To make a new opening in substitute for an existing one which gives access to land.
- To obtain temporary access to any land in order to give assistance in an emergency.
- To gain access to land where another means of access is not available or is available at a disproportionate cost.
- For National Defence purposes.
- Where planning permission has been authorised except where permission has been granted by the Town and Country Planning General Permitted Development Order 1995.
- To carry out work for the purposes of flood defence or land drainage.
- To prevent spread of or ensure eradication of a plant or tree pest.
- For work undertaken by the Secretary of State in respect of any highway for which he is the highway authority or in relation to which he has the same powers as the Local Highway Authority.
- To prevent obstruction of or interference with electric lines and plant or prevent danger under the Electricity Act 1989.
- For the proper management of the hedgerow.

Hedgerows in areas covered by Historic Landscape Characterisation are often protected on the basis of historical importance and their wildlife value.

Hedgerows are listed as a habitat of principal importance under section 41 of the NERC Act (2004). This draws on the UK Biodiversity Action Plan (BAP) definition of priority habitats. Under the 2007 UK BAP, hedgerow priority habitat includes all hedgerows with at least 80% cover of at least one woody UK Native species (BRIG 2011).



Bats

All bat species are protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a European Protected Species, or any part of, or anything derived from such a wild animal or plant.

Badgers

Badgers and their setts are specifically protected under the Protection of Badgers Act 1992. The act was primarily brought into force to prevent the deliberate injury to or death of badgers. Some aspects of the act affect developers. It is important that developers are aware of any badger setts located on the land they intend to develop.

All personnel working on sites where there are badgers should be aware of the Protection of Badgers Act 1992. Under this legislation it is an offence to:

- Damage a badger sett or any part of it.
- Destroy a badger sett.
- Obstruct access to, or any entrance of a badger sett.
- Causing a dog to enter a badger sett.
- Disturbing a badger when it is occupying a badger sett.

Water Vole

The water vole is protected by law and is a conservation priority within the UK's BAP. Under the Wildlife and Countryside Act 1981 (as amended by Variation of Schedule 5) (England) Order 2008 it is an offence to intentionally or recklessly:

- Damage, destroy or obstruct access to any structure or place that water voles use for protection of shelter.
- Disturb a water vole whilst it occupies such a place.
- Section 10 of the Act requires that "reasonable" steps are taken to avoid unnecessary damage to such structures.
- Capture, kill, disturb or injure water vole (on purpose or by not taking enough care).
- Damage or destroy a breeding or resting place (deliberately or by not taking enough care).
- Obstruct access to their resting or sheltering places (deliberately or by not taking enough care).
- Possess, sell, control or transport live or dead water vole, or parts of water vole.



Otter

The European Otter is a European protected species and is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended 2010). This makes it illegal to:

- Capture, kill, disturb or injure otters (on purpose or by not taking enough care).
- Damage or destroy a breeding or resting place (deliberately or by not taking enough care).
- Obstruct access to their resting or sheltering places (deliberately or by not taking enough care).
- Possess, sell, control or transport live or dead otters, or parts of otters.

Birds

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), birds, their nests and young are all protected from damage, particularly during the breeding season. The Act allows for fines or prison sentences for every bird, egg or nest destroyed. It makes it an offence to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built.
- Take damage or destroy the egg of any wild bird.
- To have in one's possession or control any wild bird, dead or alive or egg or any part of a wild bird or egg.

Some bird species are included in the UK and local BAPS and are recognised as species of principal importance for nature conservation in accordance with section 41 of the NERC Act 2006. Such species and their habitats receive protection through the provisions of the NPPF.

Amphibians and Reptiles

All species of amphibians receive a measure of protection under legislation.

The Wildlife and Countryside Act 1981 has been amended by the Countryside and Rights of Way Act (CRoW) 2000. This applies to England and Wales only. The key relevant fact is:

- Section 9(4) is amended to create an additional offence of reckless damage to, destruction of, or obstruction of access to, any structure or place used for shelter or protection; and reckless disturbance while occupying such a structure or place.

Great Crested Newts

Great crested newts are protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Deliberately take or destroy eggs of any such wild animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a European Protected Species, or any part of, or anything derived from such a wild animal or plant.



Great crested newts are listed as a priority species on the UK BAP and Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. The National Planning Policy Framework (NPPF) states that to minimise impacts on biodiversity and geodiversity, *“planning policies should... promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations”*.

Invasive Species

Himalayan Balsam

Himalayan Balsam is identified as an invasive non-native plant. It is listed under Section 9 schedule 14 of The Wildlife and Countryside Act. It is illegal to plant or otherwise cause Himalayan Balsam to grow in the wild in the UK.



Appendix D – Bibliography

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