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Plassey Lane
Willington
Malpas
SY14 7LT

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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 two years for planning purposes, after which time further survey information may be required.

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1 Executive Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Mr & Mrs Hughes, to undertake a preliminary ecological appraisal of a building at Mount Pleasant Farm to provide supporting information for a planning application for conversion of the redundant barn to residential.

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 for nearby designated sites and previously recorded protected species and a site visit undertaken at the site, OS grid reference SJ436432 on 2nd October 2023 by P. Marshall

1.3 Key Impacts and Mitigation Measures

Great crested newts are known to be in the area. It was considered that the site could provide potential habitat for bat, bird and newt species and these should be the main focus of the ecological appraisal. Species such as dormice were scoped out at the Phase 1 stage.

The development area extends to 0.03ha. With the buildings adjacent to significant areas of hard standing. No habitat of high ecological value will be lost. There will be potential for enhancement on the land released from the demolition of the stables.

The buildings are both of negligible value to bats and so no further surveys are considered necessary. An offence is considered highly unlikely. A non-licensable Precautionary Working Method Statement (PWMS) is recommended.

There are three bodies of water within 250m which have been taken into consideration. Ponds two and three are separated with land of low ecological value. Pond 1 supports fish and fowl and although is adjacent to the buildings is of negligible value for newts (HIS 0.33, poor). A method statement outlining reasonable avoidance measures will be proposed. An offence is considered highly unlikely. The pond will be protected during construction period.

No evidence of badger activity was recorded within 30m. No evidence of bird nests were recorded within the buildings. Reasonable avoidance measures will be recommended.

1.4 Conclusion

Works on converting the building 2 and removing building 1 can commence without a licence once planning permission has been granted. Method statements outlined in section 6 will be followed.

It is recommended that the ecological 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 to the north of the building.



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 24 months from report issue date	Ecological features can change and develop over time



2 Introduction

This report has been compiled by Peta Marshall BSc (hons) MA who has over 15 years' experience conducting ecological appraisals.

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

2.1 Project Background

Greenscape Environmental Ltd was commissioned by Mr & Mrs Hughes 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 conversion of a barn to residential at Mount Pleasant Farm, Willington, Malpas.

2.2 Purpose of the Report

This report aims to:

- Identify the key ecological constraints to the proposed development relating to priority habitats and species and protected species (HMSO, 1981).
- 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 (Ministry of Housing, Communities and Local Government, 2021).
- Provide information to assist landowners with avoiding committing legal offences in relation to wildlife (HMSO, 2000)

The development triggers the requirement for a preliminary roost assessment as it involves the conversion, modification, demolition or removal of buildings which are:

- Agricultural buildings (e.g. farmhouses, barns and outbuildings) of traditional brick or stone construction and/or with exposed wooden beams;

2.3 Site Context and Location

The site is located in a rural area, OS grid reference SJ43614327. It surrounded with a significant amount of pasture- modified grassland. There is a woodland to the west of the site which could support protected species, but connectivity to this is poor.



3 Methodology & Constraints

Broad methodologies for data collection and interpretation were informed by PEA guidance (CIEEM, 2017). 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 previously granted licences (Natural England, 2018). Previously recorded species in the vicinity are obtained from local records centres (Cofnod, 2023) and records held by Greenscape Environmental and shared with Cofnod. It is known there have not been surveys conducted on the site previously. There is little infrastructure locally where there may have been surveys, therefore reports of protected species is likely to be sparse.

3.2 Field Survey

3.2.1 Date and Survey Conditions

Table 3.1. Survey conditions

Date	Time Start – End (Sunrise/set Time)	Study Area	Equipment Used	Weather (Start/End)
2 nd October 2023	10:30 (sunset not applicable)	Site	Camera, strong torch, close focus binoculars	15C, 100% High cloud, overcast <F1 breeze

3.2.2 Habitats

The habitats on site were assessed for their potential to support protected species and therefore assist in the determination of site value.

The site had not be subject to any form of specific management, maintenance or cleaning prior to the survey.

3.3 Species Survey

3.3.1 Bats

An assessment of the suitability of site to support roosting bats was conducted following best practice guidance looking for evidence of roosting or potential access points (Collins, J. BCT, 2016). There were no constraints to this methodology.

3.3.2 Other Mammals

An assessment of the suitability of site and its surrounds to support badgers was conducted following best practice guidance looking for tracks, signs or setts (Scottish Badgers, 2018). There were no constraints to this methodology.

An assessment of the suitability of adjacent pond and its immediate surrounds to support water vole was conducted following best practice guidance looking for burrows tracks and signs (Dean, 2021). There were no constraints to this methodology.

Assessment for otters and hazel dormouse was ruled out at the phase 1 stage.



3.3.3 Birds

An assessment of the suitability of site and its surrounds to support nesting birds was conducted, looking for current/old nests and listening for bird calls. Whilst the survey was conducted out of the bird nesting season, no constraints were found.

3.3.4 Barn Owls

An assessment of the suitability of site and its surrounds to support barn owl was conducted following best practice guidance looking for droppings, pellets or nesting signs (Barn Owl Trust, 2012)

3.3.5 Amphibians

An assessment of aquatic habitat for great crested newts is based on the Habitat Suitability Index (ARG UK, 2010). The HSI assessment is based on ponds as they would be during the aquatic phase of a great crested newt, between March and the end of September. Some of the factors involved in the assessment cannot be accurately determined outside of this time period; such as macrophyte cover and water quality assessments. These values are given an educated guess based on the appearance of the pond in conjunction with any local knowledge. This is not seen as a constraint as the closest pond supports fowl and fish.

An assessment of terrestrial habitats of site and its surrounds to support great crested newts was conducted by looking for potential shelter and commuting features (Langton, et al., 2001).

3.3.6 Reptiles

An assessment of the suitability of site and its surrounds to support reptiles was conducted following best practice guidance by turning over detritus and other refugia and checking for suitable basking sites (Edgar, et al., 2010).

3.3.7 Invertebrates

An assessment of the suitability of site and its surrounds to support invertebrates was conducted following best practice guidance looking for food source plants (Buglife, 2019).

3.3.8 Invasive Species

Signs of invasive non-native plant species were searched for throughout the site.



4 Baseline Ecological Conditions

4.1 Nearby Features of Importance

4.1.1 Designated Sites

The map from MAGIC presented in **Error! Reference source not found.** indicated that the site is not within 1km of any designated areas.

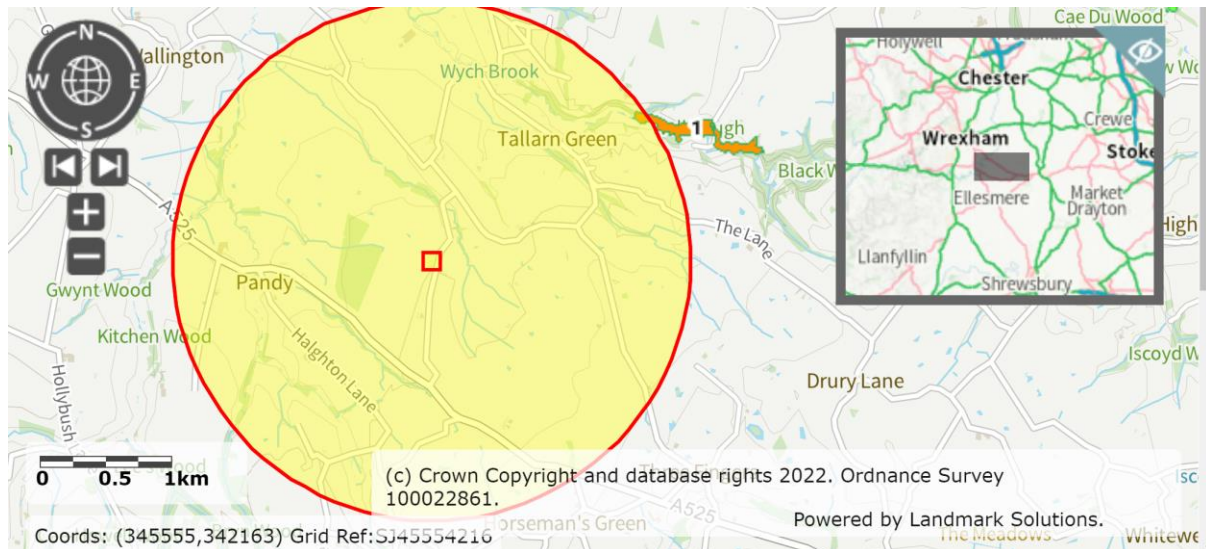


Figure 4.1; Map from Magic showing search for designated areas.

4.1.2 Nearby European Protected Species Licences

The site is close to the England/Wales border, so information has been searched for using the MAGIC site. EPS Licences for bats and newts are beyond the 2km zone of influence for great crested newts or bats.

4.2 Habitats on Site

The site in the red line area comprises hard standing with two buildings, Beyond the red line there is further hard standing and outbuildings along with the house and garden of the property. A pond is close to the buildings.



4.2.1 Surrounds



Figure 4.2: Modified grassland beyond the yard

The buildings are set on an area of hard standing with modified grassland beyond the yard. There is a pond to the immediate north of the buildings.



4.2.2 Building 1



Figure 4.3: Building 1

Building 1 is constructed of block and brick, with the wall being single brick thick above the wallplate. It has an unlined cement bonded corrugated roof with a well ventilated ridge. The interior is light as there are some translucent corrugated roof sheets.

4.2.3 Building 2



Figure 4.4: Building 2

Building 2 is constructed of brick with a corrugated cement bonded roof, again, well ventilated along the ridge.

There is a small enclosed mezzanine room to the western end of the building.

Metal shelters fill in the space between the two buildings.



4.3 Bats

4.3.1 Field Observations

Both buildings, including the mezzanine floor of building 2 were examined internally and externally by a licensed surveyor. No evidence of bats was observed and no potential bat roost features seen. The roofs were not well sealed at the gable ends and large gaps, not suitable for crevice dwelling bats were observed.



Figure 4.5: Interior Building 1

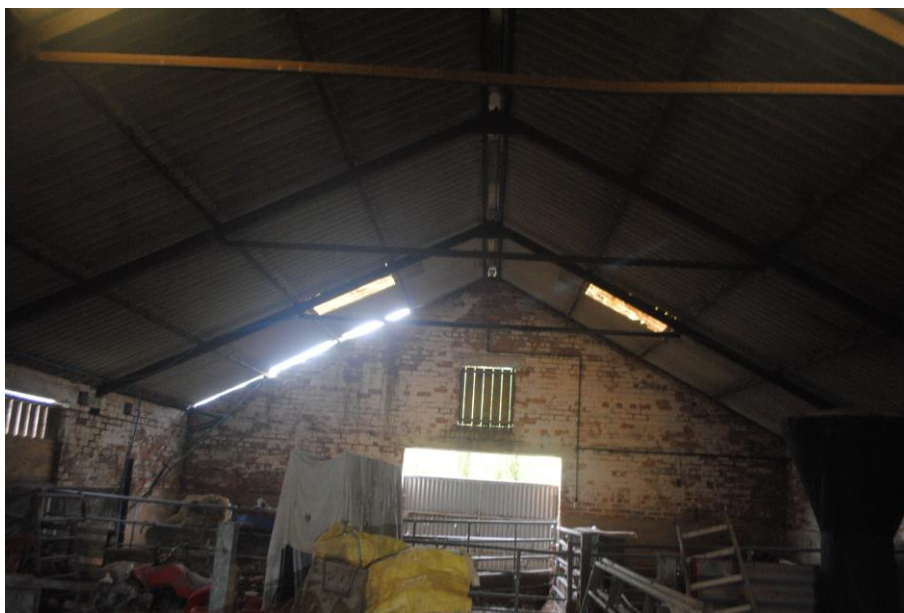


Figure 4.6; Interior Building 2 showing large gap along verge of the building.



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Cobwebs were observed under the mezzanine floor area. No bat droppings were seen in these. Presence of cobwebs suggests the lack of bats, supported by the lack of droppings in the webs themselves.



Figure 4.7; Cobwebs under mezzanine floor



4.4 Other Mammals

4.4.1 Field Observations

The site and surrounds were examined for evidence of badger activity in particular and none was evident within 30m which is considered to be the zone of influence for setts.

No evidence of wolverine activity was observed around the pond.

4.5 Birds

4.5.1 Field Observations

No redundant nests were observed within the buildings. No evidence of barn owl was observed.



4.6 Amphibians

4.6.1 Records

Commercially available records of amphibians within 2km include great crested newts (*Triturus cristatus*). These were most recently recorded in 2008 and have records scattered throughout the 2km search area.

Amphibian species data was provided to the NBN Atlas by NRW Licence Return Dataset under OGL licence.

4.6.2 Field Observations

The buildings are set on hard standing which is not optimal for the terrestrial phase for newts. There is a wall to the east and south of the buildings which would provide a barrier for newt dispersal.

There were 3 ponds within 250m. Ponds 2 and 3 are on the far boundary of the 250m so were considered to be of negligible value for newts with respect to this project. Most of the ponds were beyond the 250m.

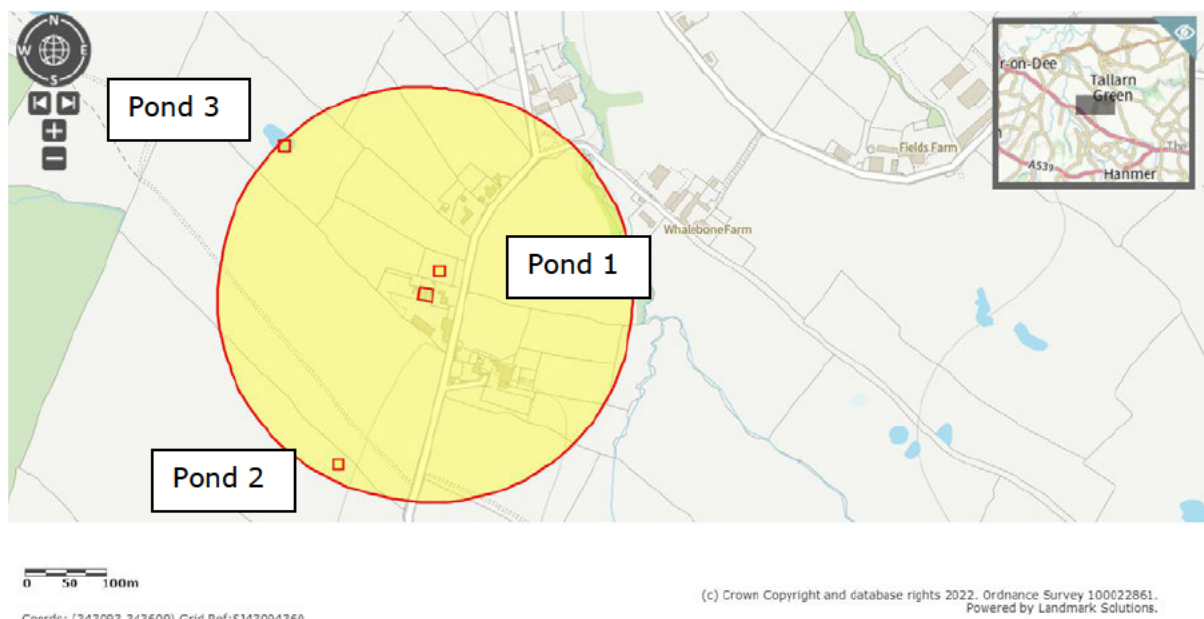


Figure 4.8. OS Map showing a 250m buffer around site, highlighting ponds

Pond 1



Pond 1 is close to the two buildings. It is known to support fish and to moderate impact from ducks and geese.



Figure 4.9, Pond 1 with buildings to the rear

Further surveys are not considered to be necessary, but the potential impact on individual newts will be negated with a method statement outlining reasonable avoidance measures.

4.7 Reptiles

4.7.1 Field Observations

The site had negligible features suitable for reptiles.

4.8 Invertebrates

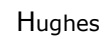
4.8.1 Field Observations

The site had negligible features for priority invertebrate species.

4.9 Invasive Species

4.9.1 Field Observations

No evidence of invasive plant species was found.



The current plans are for the conversion of a barn to residential. This will include the removal of a stable building adjacent to the building.





6 Impacts, Enhancements and Mitigation

6.1 Nearby Features of Importance

6.1.1 Impacts

The site is not within a typical zone of influence for any distinctive habitats.

It is however close to a pond which will need protecting from dust and silt run off during demolition and the construction phase.

6.1.2 Mitigation -construction plan for pond

Mitigation for habitats such as a SSSI is not considered necessary for this project. It is for the pond

Pond

1. The pond will be protected from the risks of dust and silt run-off during works by installing Heras fencing between the development site and the watercourse.
2. The fencing will have a plastic skirt installed along the base, with the plastic flap facing in towards the site and weighted down.
3. The plastic skirt will be checked daily for tears or gaps and repaired where necessary.
4. The plastic skirting will be cleaned if there is a build-up of dirt and waste
5. Materials stockpiled on site, such as solid hardcore and sand can pollute water and air with silt and dust.
6. Materials will be stockpiled away from the pond and kept in bulk bags
7. Once opened, easily dispersible materials such as dry cement will be stored in a sealed bag or storage unit
8. All empty bags will be appropriately stored and disposed of correctly to reduce the potential for them blowing into the pond.
9. Sufficient spills kits will be available on site, and all workers will be aware of their location and how to use them.
10. Any diesel/oil/chemical spills on site must be cleared as a matter of urgency. Where spills become absorbed into the ground it may be necessary to excavate the contaminated soil and remove from site.
11. Chemicals will be stored in the site compound in a suitably protected environment.



6.2 Habitats on Site

6.2.1 Impacts

The development as proposed will not result in the loss of any habitat of principal importance. The removal of one building will result in the potential for a gain of habitat not comprising hard standing and/or hardstanding.

As the site is not comprised of any habitats of principal importance listed in Section 7 of the Environment (Wales) Act (HMSO, 2016), mitigation will be delivered at a species level.

6.2.2 Mitigation and 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.

Hedgerows

It is recommended that the landscaping around the barn conversion 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>	10%
Holly	<i>Ilex aquifolium</i>	10%
Wild Service Tree	<i>Sorbus torminalis</i>	10%

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 to be used should be from the list below. These should also be native species, locally sourced where possible. Oak should particularly be encouraged because it supports a large diversity of invertebrates.

Table 6.3. Trees proposed for enhancement

Common Name	Latin Name
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

Both buildings are considered to have negligible potential for bat roosts and so further surveys are not considered necessary. The buildings offer negligible potential for hibernating bats. An offence is highly unlikely. And no cumulative negative impact on bat species is anticipated.

Both buildings and the pond (1) may provide foraging opportunities for bats, so the erection of a bat box on the exterior of the barn conversion would be an enhancement for bats using the area.

6.3.2 Mitigation

Work which can be conducted immediately once planning permission has been granted includes:

- Demolition of Building 1
- Conversion of Building 2

A non-licensable Precautionary Working Method Statement (PWMS) is recommended.

Precautionary Working Method Statement

1. A suitably licensed ecologist will be employed as an Ecological Clerk of Works (ECoW) to oversee works in areas sensitive to bats and provide expert advice.
2. A toolbox talk will be provided by the ECoW.
 - i. The developer and the contractors will be made aware that there is a very low possibility that bats may be found during demolition and will be advised to work in a way to ensure bats are not harmed during work in areas sensitive to bats; particularly around the roof areas.
 - ii. They will be provided with a simple emergency procedure to follow if bats are found at any stage of the work on site. It will be ensured that the method statement is retained on site at all times.
3. A pre-commencement check will be conducted by the ECoW using a strong torch and borescope where appropriate.
4. If a bat is found when the ECoW is not present, work will stop immediately and the ECoW contacted for advice.
 - i. The bat can only be handled by the ECoW or authorised person unless it is in immediate danger. The bat must be carefully placed in a well-ventilated lidded box with a small container (i.e. a plastic bottle lid) with water in it. The container must be kept in a quiet and safe place.
 - ii. Bats will not be moved without the permission from NRW as this would constitute an offence.
 - iii. Care should be taken to avoid rousing the bat whilst transferring to a suitable location, such as a suitable roost box or alternative roost space that provides



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a safe, quiet environment with a stable cool temperature and relatively high humidity.

- iv. If the bat is underweight or injured it will be cared for by an experienced bat carer until such time that it is strong enough to be released into a suitable alternative replacement roost on site.
5. The bat compensation will be created following the instructions in section 6.3.3.
6. Once building 2 has been reroofed, bat access will be limited by sealing all doors and windows, thus reducing the potential for bats to enter where they are not expected.

Lighting

Lighting will be designed to have minimal impact on bats and their commuting and foraging areas. The use of downlights is recommended 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 best guidance (ILP, 2023).
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 pond to the north of the building.
5. All external domestic lighting will be orientated towards the ground and controlled by PIR (Passive Infra-red), set on a short timer.



Figure 6.1. Example external down light design



6.3.3 Enhancements for bats

As the building to be converted is close to a pond, the erection of a bat box is recommended. This will be woodcrete for longevity and will be suitable for day roosts of crevice dwelling bats such as pipistrelles. It will be erected at a height of 3-4 m facing the pond.



Figure 6.2. Example woodcrete bat box: Beaumaris Bat Box Midi

6.3.4 Monitoring

Failing boxes or enhancements will be replaced at the cost of the developer if deterioration or damage is noted within five years post-development.



6.4 Other Mammals

6.4.1 Impacts

No negative impact on other mammal species is anticipated.

6.5 Birds

6.5.1 Impacts

No negative impact on bird species is anticipated, but occupation of the buildings during the demolition and or construction periods is possible between Feb to August inclusive. A precautionary method statement is therefore recommended..

6.5.2 Mitigation – precautionary method statement

1. The developer will be responsible for ensuring no nesting birds will be impacted by the proposed development, either by timing the demolition and commencement of building 2 for outside of the nesting season (1st March to 31st August inclusive) or if this is not possible, after a visual inspection within 24 hours prior to the development commencing shows no birds are nesting.
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 and the nesting bird season has finished, which is March to August inclusive.
3. Once work has commenced on the building and it is confirmed that there are no nesting birds present, building 2 will be sealed to prevent birds gaining access during works and potentially causing delay.

6.5.3 Compensation and Enhancements

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.

- a. Sparrow Terraces should be erected under the eaves of a building at a minimum height of 3m, in a westerly, northerly or easterly aspect.
- b. 26/32mm hole nest boxes (e.g. Schwegler 1b) should be installed at a minimum height of 3m in a westerly, northerly or easterly aspect.
- c. Swallow cups should be installed on the exterior of the building at eaves height, ideally beneath an overhang to shelter the cup.
- d. House martin boxes should be erected on the eastern or northern walls as high as possible under the eaves
- e. Integrated swift boxes should be placed as high as possible, preferably over 5m high, beneath an overhang or eaves.



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Cedarwood Sparrow Terrace



Schwegler 1b Bird Box



Swallow Nest Cup



House Martin Nest Box



Schwegler 16S Integrated Swift Box

Eco Habitats for swifts



Swift Box

Size (Width x Depth x Height) (mm)
327 x 140 x 140



Figure 6.3. Bird boxes

6.5.4 Monitoring

Failing boxes or enhancements will be replaced at the cost of the developer if deterioration or damage is noted within five years post-development.



6.6 Amphibians

6.6.1 Impacts

Potential impacts were ascertained in conjunction with chapter 6 of the Mitigation Guidelines (English Nature, 2001).

No negative impact on newt species is anticipated. The pond will not be damaged and connectivity with other ponds and habitat of value will not be impacted.

Although the site has negligible potential for amphibians, including GCN, there is a small risk that newts could use the site. Reasonable avoidance measures to ensure the safety of individual newts is maintained will be recommended. This will create a scenario by which the risk to individual newts is negated.

6.6.2 Mitigation: Reasonable avoidance measures

Appropriate mitigation for amphibians has been designed in line chapters 7 and 8 of the Mitigation Guidelines.

Pre-Construction

1. The site will be kept under management prior to construction. This will reduce the potential for newts to cross the land and reduce the potential for the terrestrial features to improve. All plants will be kept short (<10cm) to ensure there is no shelter for great crested newts on the site

Site Setup

2. A consultant will be employed as the ECoW to oversee the work in areas sensitive to great crested newts on site. This person will need to be licensed and an experienced surveyor for great crested newts.
3. The ECoW will provide contractors with a toolbox talk prior to work commencing. This will include information about the legal status of newts and responsibilities of the construction company to ensure no offence is committed. A document to assist with the identification of newts will be left on site.
4. The site will be checked thoroughly by the ECoW prior to demolition or construction commencing. This will confirm there are no newts present and that there are no potential places of shelter.
5. All cabins and equipment will be located on firm compacted ground, preferably a stone or concrete base.
6. Contractors are advised not to handle newts at any time.

Demolition/Construction Phase

7. The site foreman/manager will be responsible for ensuring all contractors are aware of the potential to find newts, and that they are familiar with the appearance of newts. If in doubt the ECoW will be contacted.
8. Stored subsoil must not be tipped onto any tall vegetation around the pond. The location of the storage area will be checked by the ECoW immediately before use.



9. All groundwork will be conducted during daylight hours as newts are least likely to move during this time.
10. Major construction work– this includes trenches for services, footings and other groundworks will be conducted between December to February when there is least movement of newts between ponds.
11. Trenches will be dug and filled in on the day created or will be covered over with close-fitting boards at the end of each working day.
12. If it is not possible to cover the trench, a ramp will be placed from the edge of the trench to the base to allow newts and small mammals to escape.
13. Open or covered trenches will be checked the following morning. This is particularly important when newts are most active, between March and November.
14. If a newt is found, then work will stop immediately and the ECoW contacted for advice. Great crested newts will not be moved without the permission of Natural Resources Wales as this would constitute an offence
15. Any heavy machinery will be stored on an area of hardstanding to avoid refugia being created.
16. Stored materials will be raised on pallets to reduce the potential they might act as a temporary resting place. This reduces the potential for damage or destruction of individual newts.
17. All waste will be placed straight into skips to reduce the potential of creating refugia.

Enhancements for Newts

1. The landscaping features will be designed to enhance the terrestrial features for newts. This will include new hedges and trees and wildflower planting. The hedge will be planted adjacent to the pond.
2. A hibernaculum will be constructed in the grassland around the pond. This will provide an environmental enhancement for all amphibians.

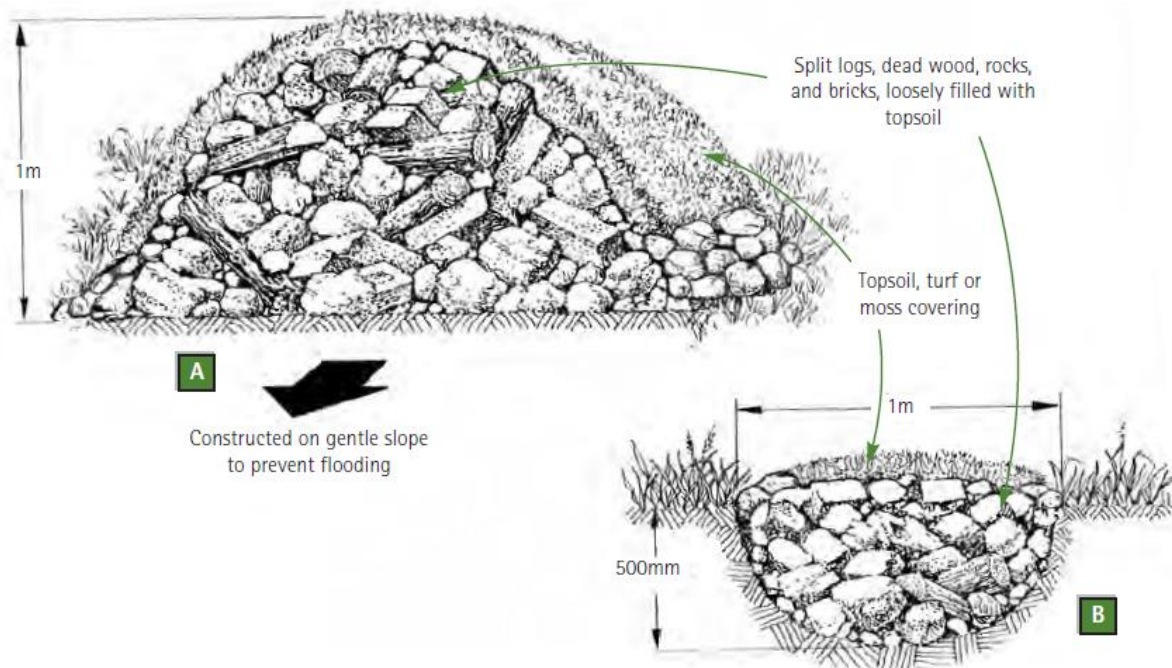


Figure 6.4. Hibernacula design from Froglife ©

6.6.3 Monitoring

The hibernaculum will be monitored, and more material added when notable decomposition is seen.



6.7 Reptiles

6.7.1 Impacts

No negative impact on reptile species is anticipated.

6.8 Invertebrates

6.8.1 Impacts

No negative impact on invertebrates is anticipated.

6.8.2 Mitigation and Enhancements

Invertebrate bricks / Bug houses will be erected on the site to enhance the area for nesting bees.



Figure 6.5. Invertebrate brick and bug house

6.9 Invasive Species

6.9.1 Impacts

No mitigation for non-native plant species is required.



7 Concluding Remarks

The survey has focussed on the potential habitats or protected species to be damaged or destroyed as part of this development. In particular bat and newt species were taken into consideration. The buildings offer negligible potential bat roost features and no further surveys are considered necessary.

The closest pond was found to support fish and duck and offer negligible potential for breeding newts, and as the buildings are situated on hard standing, an offence is considered highly unlikely. Further surveys are not considered necessary.

The development can proceed without the loss of habitat of significant value, and without the loss of the favourable conservation status of any protected.

The method statements provided in sections 6 of this report will be followed. This will create a scenario by which the risk to individual species is negated.

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
Peta Marshall BSc(hons)MA	Principal Consultant MCIEEM PIEMA Peta has a degree in Applied Biology and has been working in commercial environmental assessment for over 17 years. She has 17+ years' experience surveying for protected species. As a member of the CIEEM she is bound by professional conduct.	Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Mitigation Class Licence for Bats <u>England:</u> Bats - 2015-12200-CLS-CLS BMCL - RC084 GCN - 2015-18939-CLS-CLS <u>Wales:</u> Bats - S090542/1 GCN - S090807/1
Logan Maggs BSc(hons)	Senior 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 - S091096/1
Ben Jones BSc(hons) MSc	Senior Consultant MCIEEM Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 8 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales. As a member of the CIEEM he is bound by professional conduct.	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 - S091847/1 GCN - S091242/1
Brian Marshall	Technical Director FIEMA CEnv PEA Consultant with over 35 years in the Environmental Sector	



Appendix B – Methodology

Desk Study

Table B.1. Data sources

Organisation/Resource	Information Assessed
Freely available online species datasets (NBN Atlas)	Protected/Priority Species records (2km)
MAGIC website	International statutory designations (1km) • Special Protection areas (SPA) • Special Areas of Conservation (SAC) • RAMSAR sites National statutory designations (1km) • Sites of Special Scientific Interest (SSSI) • National Nature Reserves (NNR) EPS Licenses for protected species (2km)

The National Biodiversity Network (NBN) Atlas was checked to identify the protected species that have formally been recorded in the area. This was considered proportionate to the size of the development,.

As the development is a small-scale householder application a full data search is not required, a search was conducted on NBN for commercially available records.

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 UK Habitat Classification.

Table B.2. UK Habs metadata

Metadata	Information
Scope and purpose of survey	Preliminary ecological appraisal
Area surveyed	~1ha
Edition of UKHAb used	The UK Habitat Classification Version 2.0
Minimum Mapping Unit	50m ²
UKHab Primary Hierarchy used	Level 5
Secondary groups recorded	All secondary Codes
Year of survey	2023
Organisation and individual undertaking survey	Greenscape Environmental Ltd Logan Maggs

Target notes were used to identify potential for protected or notable species or habitats, where appropriate and to give more detailed site descriptions.

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 CIEEM (2017).

**Table B.3. 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 or a site that supports a viable population of a priority 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.

Species Surveys

Bats

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

An external assessment of all structures on site was undertaken to determine potential roost features (PRF) The potential suitability of the structures assessed was assigned a rating of low to high in accordance with table 4.1 of Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition.

An internal assessment of all structures was undertaken by a suitably licensed surveyor for evidence of roosting bats such as droppings, feeding remains and staining.

Daytime surveys were conducted with the aid of a strong torch.

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.
- Faeces under a roof access point, a well-used feeding point or a resting spot.
- Feeding signs such as discarded insect wings under a feeding point.
- Lack of cobwebs around eaves, roof spaces, beams or ceilings where routes are kept clear by bats or presence of droppings in a cobweb.
- Presence of roosting or dead bats in or behind any object.

Badgers

Surveys were conducted in line with Harris, S., Cresswell, P. and Jefferies, D. (1989) Surveying Badgers. Mammal Society - No9.

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 within 30m either side of the site boundary/where the site intersects with the watercourse.

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 assessment of aquatic habitat is based on the Habitat Suitability Index (HSI) and is applied according to guidance set out by the Oldham 2000, superseded by ARG in 2010, ARG UK Advice note 5. The HSI is a quantitative method of assessing the potential quality of a body of water in terms of its ability to sustain a population of great crested newts.

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)

Environment Act (2021) – Part 6 – Nature and Biodiversity

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

Wrexham Unitary Development Plan – EC6 Biodiversity Conservation

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.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine or to both .

Seven bat species are on the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions 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*”.



To allow a development that might result in an offence, a derogation licence can be sought via the implementation of a European Protected Species Licence. This is provided by Natural Resources Wales.

Work can be conducted under a derogation licence from Natural Resources Wales providing suitable compensation and mitigation is provided and the "three tests" can be met. These are:

Regulation 55(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety" or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Regulation 55(9)(a) States: the appropriate authority (Natural Resources Wales) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"

Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

The method statement in the EPS licence is a legally binding document which outlines the species, context of the colony, method of mitigating and compensating and ongoing habitat management for ensuring favourable conservation status.

Badgers

Badgers and their setts are specifically protected (HMSO, 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 priority species. 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 of 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.

Hazel Dormouse

The hazel dormouse is offered full protection under the Wildlife and Countryside Act 1981 Schedule 5 (as amended in 2010). The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which implement the EC Directive 92/43/EEC in the United Kingdom makes the hazel dormouse a European Protected Species.

Schedule 5 of the Wildlife and Countryside Act 1981 states that it is illegal to:

- Intentionally kill, injure or take a dormouse.
- Possess or control any live or dead specimen of anything derived from a dormouse.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse.
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

Regulation 53 of Schedule 2 of the Habitats Regulations makes it an offence to:

- Deliberately capture or kill a dormouse.
- Deliberately disturb a dormouse.
- Damage or destroy a breeding site or resting place of a dormouse.
- Keep, transport, sell or exchange, or offer for sale or exchange alive or dead dormouse or any part of a dormouse.

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.

Barn Owls

Barn owls are listed on Schedule 1 which gives them special protection.

It is an offence to:

- Intentionally kill, injure or handle any wild barn owl.
- Intentionally take, damage or destroy any wild barn owl nest whilst in use or being 'built'.
- Intentionally take or destroy a wild barn owl egg.
- Have in one's possession or control a wild barn owl (dead or alive) or egg (unless one can show it was obtained legally).
- Intentionally or recklessly disturb any wild barn owl whilst 'building' a nest or whilst in, on, or near a nest containing young.
- Intentionally or recklessly disturb any dependent young of wild barn owls.

It is not an offence to:

- Take a disabled wild barn owl solely for the purpose of tending it until fully recovered and then returning it to the wild.
- Kill, injure, take or disturb barn owls if these were incidental results of a lawful operation and could not reasonably have been avoided.



Amphibians

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"*.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine, or to both.

Work can be conducted under derogation licence from Natural Resources Wales providing suitable compensation and mitigation is provided and the "three tests" can be met. These are:

- Regulation 55(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety" or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.
- Regulation 55(9)(a) States: the appropriate authority (Natural Resources Wales) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"
- Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

The method statement in the EPS licence is a legally binding document which outlines the species, context of the colony, method of mitigating and compensating and ongoing habitat management for ensuring favourable conservation status.



Reptiles

Smooth snakes and sand lizards are designated and protected as European protected species (EPS). They are protected via a combination of Regulation 41 of the conservation of Habitats and Species Regulations 2010 and Sub-sections 9(4) b & c and Section 9(5) of the Wildlife & Countryside Act 1981 (as amended). These prohibit:

- a) deliberate capturing, injuring or killing
- b) deliberate disturbance; Disturbance of animals includes in particular any disturbance which is likely-
 - i. to impair their ability to survive, to breed or reproduce or to rear or nurture their young; or
 - ii. to impair the ability of hibernating or migratory species, to hibernate or migrate; or
 - iii. to affect significantly the local distribution or abundance of the species to which they belong;
- c) deliberate taking or destroying the eggs of such an animal; or
 - i. damaging or destroying a breeding site or resting place of such an animal and/or
 - ii. intentionally or recklessly –
 - a) disturbing any such animal while it is occupying a structure or place which it uses for shelter or protection; or
 - b) obstructing access to any structure or place which any such animal uses for shelter or protection.
- d) any person having in their possession or control, transporting, selling or exchanging, offering for sale or exchange, any live or dead animal or part of an animal, or anything derived from such an animal which has been taken from the wild and which is of a species or subspecies listed in Annex IV(a) to the Habitats Directive (This section also covers all other species listed on Annex IV of the Habitats Directive including those that are not native to the UK) unless the animal from which the part or the thing in question is derived, was lawfully taken from the wild (i.e. taken from the wild in the European Union without contravention of appropriate domestic legislation and before the implementation date of the Habitats Directive (in that Country e.g. 1994 in UK) or if it was taken from elsewhere).

Reptiles only (adder, grass snake, common lizard and slow worm) are protected via part of Section 9(1) of the Wildlife & Countryside Act 1981 (as amended) against:

- a) intentional killing and injuring (note the provision in Section 9(1) of Wildlife & Countryside Act 1981 prohibiting “taking” does not apply to reptiles) Both reptiles (adder, grass snake, common lizard and slow worm) and amphibians (common frog, common toad, smooth newt, palmate newt) are protected via part of Section 9(5) of the Wildlife & Countryside Act 1981 (as amended) against:
- b)
 - a. selling, offering or exposing for sale, or having in possession or transporting for the purpose of sale, any live or dead wild animal or any part of, or anything derived from, such an animal; or
 - b. publishing or causing to be published any advertisement likely to be understood as conveying buying or selling, or intending to buy or sell, any of those things.



Invertebrates

There are three invertebrate species that are European protected species (EPS) in the UK. They are:

- Large blue butterflies (eggs, caterpillars, chrysalises and adults)
- Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults)
- Little ramshorn whirlpool snails

It is an offence to:

- capture, kill, disturb or injure, on purpose or by not taking enough care, an EPS species
- damage or destroy a breeding or resting place (even accidentally)
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care)
- possess, sell, control or transport live or dead EPS invertebrates, or parts of them

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine or to both.

400 other species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981, Section 7 of the Environment (Wales) Act 2016.

Some species are listed under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and The Conservation Regulations 1994 which implement the EC Directive 92/43/EEC in the United Kingdom.

It is illegal to:

- Intentionally kill, injure or take a protected invertebrate.
- Possess or control any live or dead specimen of anything derived from a protected invertebrate.
- Cause intentional damage to or destruction of any structure or place used by a protected invertebrate for shelter or protection
- Cause intentional disturbance of a protected invertebrate occupying such a structure or place
- Cause obstruction of access to any structure or place used for shelter or protection
- Selling, offer for sale, possess or transport a protected invertebrate for the purpose of sale (live or dead animal, part or derivative)
- Advertise for buying or selling a live or dead protected invertebrate, part or derivative

Such species and their habitats listed under the NERC Act 2006 receive protection through the provisions of the NPPF. 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

Action will be taken to prevent invasive plants on one's land to spread into the wild and cause a nuisance.

The current fine is up to £5000 or a 2-year imprisonment if contaminated soil or plant material from any waste transferred is spread into the wild. Removal of soil material containing any plant material must be treated as controlled waste.



Appendix D – HSI Scores

Table D.1. HSI score and justification for Pond 1

Pond 1 Grid reference: SJ43644331		
Geographic Location	1	Zone A
Pond Area	1	The pond is approximately 500m ²
Permanence	0.9	Never dries
Water Quality	0.67	Moderate invertebrate diversity
Shade	1	There was estimated to be 60% shading of the area within 1m of the perimeter
Waterfowl	0.01	Severe impact of waterfowl Little or no evidence of submerged plants, water turbid, banks showing patches where vegetation removed evidence of provisioning waterfowl
Fish	0.01	Dense populations of fish known to be present
Pond Count	0.9	There are 9 ponds within a 1km radius not separated by significant barriers
Terrestrial Habitat	0.67	Habitat offers opportunities for foraging and shelter but may not be extensive (25-75% of 250m ²)
Macrophytes	0.45	There was very little floating or emergent vegetation in this pond, cover was estimated to be <10%
HSI Score	0.33 - Poor	



Appendix E - Bibliography

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