PRELIMINARY ECOLOGICAL APPRAISAL & BAT ROOST ASSESSMENT

DECEMBER 2025

Mindale Farm
Ffordd Hendre,
Prestatyn
LL19 8PA

URBAN GREEN

QUALITY MANAGEMENT

Project Number:	UG3349				
Project:	Mindale Farm, Prestatyn				
Location:	Mindale Farm, Ffordd Hendre, Prestatyn LL19 8PA				
Title:	Preliminary Ecological Appraisal				
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Date:	04/12/2025				
Prepared By:	Toby Mills	**Signature:**		**Qualifications:**	Ecologist, BSc, ACIEEM
Reviewed By:	Jake Healy	**Signature:**		**Qualifications:**	Senior Ecologist, MSc, MCIEEM

Revision Status

Rev	Date	Comment	Prepared	Checked

URBAN GREEN

CONTENTS

TABLES & FIGURES

1 Executive Summary

1.1.1.1 Castle Green Homes is proposing to develop land at Mindale Farm in Prestatyn (hereafter referred to as 'the site'). The proposals include the development of 150 residential units with associated soft and hard landscaping, and an accompanying access route.

1.1.1.2 Urban Green has been appointed to complete a Preliminary Ecological Appraisal (PEA) of the site. The objectives of the assessment are to identify the main habitats on site and determine the suitability for any 'protected and/or notable' species that may occur on site. Further ecological surveys and mitigation, where appropriate, are recommended which aim to minimise potential impacts on ecology, due to the proposed development.

1.1.1.3 The key results and recommendations from the PEA exercise are summarised in Table 1 (below):

Table 1. PEA summary results

Site Context	The site is located on the rural-urban fringe of Meliden, with urban developments to the immediate east, and arable land to the west. The site is currently used as an active farm, with sheep grazing pasture consisting the majority of site.
Key Statutory Designated Sites	The site is situated within 5km of two National Site Network sites, 2km of several statutory designated sites, and within 500m of two non-statutory sites, with one located along the site's northern border. It has been assessed that National Site Network sites and statutory sites will not be impacted, although impacts to non-statutory site Pwll y Bont cannot reasonably be avoided, and as such, mitigation measures are to be included within a PMoW document.
Habitats	The site comprised majority of modified grassland (g4), with minor areas of mixed scrub (h3h), blackthorn scrub (h3a), bramble scrub (h3d), hawthorn scrub (h3f), sparsely vegetated land (s), temporary grass and clover leys (c1b), hardstanding (u) and buildings (u1b5), with dry/waterlogged ditches (r2b 50) and native hedgerows (h2a) surrounding the boundaries.
Key Ecological Results	The following potential ecological constraints were identified during the assessment: • Buildings B1, B2 and B4 were all assessed as having bat roosting potential; • Trees T15, T21, T23, G25a, G25b, T27, G28a. G28b and G28c were all assessed as having bat roosting potential; • The site was assessed as having low/moderate bat commuting and foraging potential; • A single, partially used mammal hole with badger potential was identified on site; • No ponds were identified on site; however, one pond was located immediately adjacent to site, and several ditches are present within the surrounding environment which may provide suitable habitat for great crested newt; • Suitable habitats on site for a range of common and widespread species, including nesting birds, common amphibians, widespread reptiles, and common mammals; and • No non-native invasive species were identified on site.

Recommendations	To comply with wildlife legislation, good practice guidelines and policy, we recommend the following: • A Precautionary Method of Works document is produced prior to the construction phase of development, covering species and habitats including commuting and foraging bats, nesting birds, common amphibians, widespread reptiles, hedgehog and other small mammals, and Pwll y Bont. • Great crested newt surveys including Habitat Suitability Index assessments and eDNA surveys are undertaken to identify the species' presence in the local environment; • A suite of bat surveys are to be undertaken, including Dusk Emergence Surveys, Night-time Bat Walkovers, Static Deployment Surveys and Aerial Tree Inspections; and • A 21-day monitoring period of the mammal hole on site is conducted to fully assess its potential for badger.
Ecological Enhancements	In line with the ecological objectives of the NPPF (2024) the following ecological enhancements are suggested for inclusion within the development: • Installation of bat and bird boxes within existing trees on the site; • Inclusion of 'hedgehog highways' in between plots; and • Creation of reptile/amphibian refugia in the southern sections of the site.

Legend:

Red Line Boundary

1

Kilometers

N

Client: **Castle Green Homes**	Issue: **01**	Figure: **01**
Project: **Mindale Farm**	Scale @ A4 **1:12,000**	
Title: **Site Context**	Approved by: **CL**	Checked by: **HL**
Drawing Ref: **UG_3349_SITE_CONTEXT**	Author: **CL**	Date: **17/11/2025**

U R B A N G R E E N

A: Ground Floor, The Tower, Deva City Office Park, Trinity Way, Manchester M3 7BF

T: +44 (0) 161 312 3131

weareurbangreen.co.uk

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Legend

- Red Line Boundary
- 1km Buffer
- 2km Buffer
- 5km Buffer
- Special Area of Conservation
- Ramsar
- Special Protection Area
- Local Wildlife Site

N

0 0.4 0.8 1.6 Kilometers

Client: Castle Green Homes		
Project: Mindale Farm		
Title: Designated Sites Results		
Issue: 01	Figure: 00	
Drawn: CL	Checked: TM	Approved: TM
Project: UG3349	Scale @ A3: 1:38,000	Date: 18/11/2025
Dwg No: UG_3349_ECO_DS_01		Revision: 01

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Legend

- Red Line Boundary
- Blackthorn scrub
- Bramble scrub
- Built-up areas and gardens
- Mixed scrub
- Modified grassland
- Sparsely vegetated land
- Temporary grass and clover leys
- Building
- Developed land sealed surface
- Hawthorn scrub
- Native hedgerow
- Rivers and streams
- Species-rich native hedgerow
- Tree
- Target Note - TN1 Mammal hole

N

0 20 40 80 Meters

Client: Castle Green Homes		
Project: Mindale Farm		
Title: UKHAB Habitat Map		
Issue: 01	Figure: 00	
Drawn: CL	Checked: WG	Approved: TM
Project: UG3349	Scale @ A3: 1:2000	Date: 10/11/2025
Dwg No: UG_3349_ECO_HM_01		Revision: 01

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Legend

N

Red Line Boundary

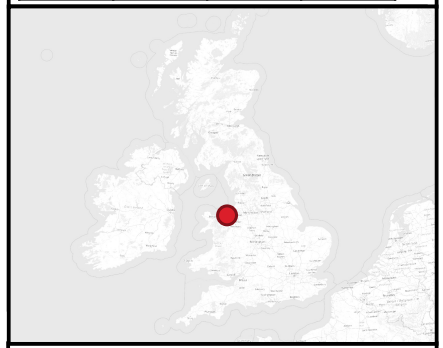
Bat Potential (Buildings)

- Negligible
- Low
- Moderate
- Building PRF

Bat Potential (Trees)

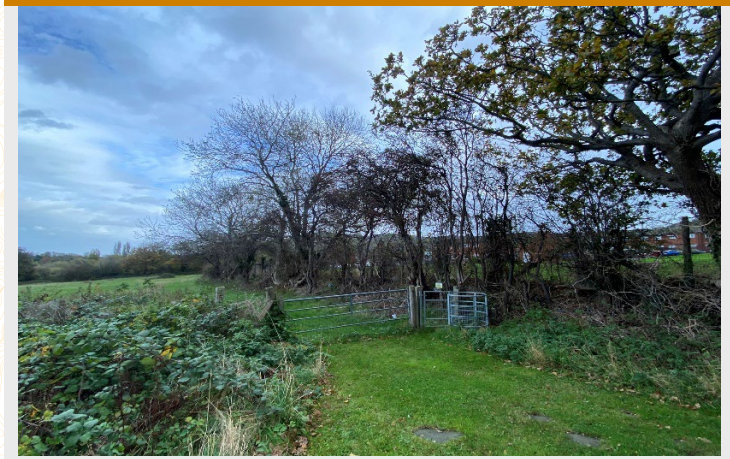
- Building PRF
- PRF-I
- PRF-M
- FAR

0 20 40 60 80 m



Client:	Castle Green Homes		
Project:	Mindale Farm		
Title:	PRA and GLTA Results Map		
Issue: 01		Figure: XX	
Drawn: BIG	Checked: TM	Approved: TM	
Project: UG3349	Scale @ A3: 1:1608	Date: 25/11/2025	
Dwg No: UG_3349_ECO_PRA_01		Revision: 01	

Figure 5. Photographs of the Site



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2 Introduction

2.1 Scope

2.1.1.1 Urban Green has been instructed by Castle Green Homes to carry out a Preliminary Ecological Appraisal to British Standard 42020:2013 guidelines at Mindale Farm, Prestatyn and detail the findings in a technical report. Specifically, the PEA comprises a desk-based assessment (using purchased biological records) and a UK Habitat Classification survey (UKHab), which is extended to include a search for protected species.

2.1.1.2 The proposals include the development of 150 residential units with associated soft and hard landscaping, and an accompanying access route. The development proposals will hereafter collectively be referred to as 'the development'.

2.2 Site Context

2.2.1.1 The site is located at National Grid Reference SJ 05539 80897 and comprises a total area of approximately 6.1ha (see Figure 1).

2.2.1.2 The site is located on the rural-urban fringe of Meliden, Prestatyn, located approximately 2.3km southwest of the town centre. The site is in current use as an active farm, hosting sheep stock and a small area of cropland to the west. Located to the south and east of site is the village of Meliden, with interspersed greenspace including woodland and grassland, and agricultural land to the north and west, consisting of a mixture of pasture and cropland. Located approximately 100m southeast of the site's southernmost point is National Trust site Graig Fawr, a nature reserve.

2.3 Purpose of Report

2.3.1.1 This report has been produced to set out the methods, results and recommendations of the PEA assessment. The purpose of the PEA report is to identify the main habitats on site and determine the suitability of these habitats to support protected and/or notable fauna and flora, with the addition of potential impacts on designated sites. This will inform the need for any further ecological surveys and/or mitigation to minimise the potential impacts on ecology on site and within the zone of influence.

2.3.1.2 Further information and details of UK legislation for those species which are formally protected is defined in Appendix 1, which are considered throughout the assessment.

2.3.1.3 The National Planning Policy Framework (NPPF) (2024) and other Local Planning Policies are considered with the PEA. Ecological enhancements are advised to be in line with relevant Planning Polices.

2.4 Surveyors

The UKHab surveys were undertaken by Toby Mills (Ecologist), Jo Reeves (Assistant Ecologist) and William Gillis (Biodiversity Net Gain Consultant). This report was authored by Toby Mills.

3 Methods

3.1 Overview

3.1.1.1 The PEA assessment and report follows the good practice methodology as detailed within the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2019).

3.2 Desk Study

3.2.1 Online Resources and Local Records Centre

3.2.1.1 Due to the size and scale of the development, combined with its geographical setting, a 1km ecological data search (including the purchase of third-party biological records) was undertaken as part of the desk study exercise. This is deemed an appropriate distance, based on the estimated Zone of Influence for the development.

3.2.1.2 Sources of information used in the desk study are presented in Table 2.

Table 2. Ecological desk study sources

Source	Date Consulted	Information Sought
The MAGIC Website	21/10/2025	Locations of statutory designated sites within 2km of the site boundary. Locations of National Site Network sites (Ramsar, Special Area of Conservation (SAC) and Special Protection Area (SPA)) within 5km of the site boundary. Locations of European Protected Species Licences (EPSL) and Class Licences within 1km.
Natural Resources Wales	21/10/2025	Relevant statutory designated site citations.
JNCC	21/10/2025	Information on former 'European' wildlife sites. Details of relevant Section 41 species and habitats.
Local Environmental Records Centres (LERC) Wales	21/10/2025	Locally designated wildlife sites within 0.5km of site boundary. Records of protected and notable species within 1km of the site boundary.

3.3 UK Habitat Classification Survey

3.3.1 Habitat Survey

3.3.1.1 The 31st October 2025 was selected to undertake the UKHab survey.

3.3.1.2 The survey methods were based on the standard methodology as detailed by The UK Habitat Classification User Manual (UKHab Ltd. 2023). The survey methodology was 'extended' to include a high-level search for signs of protected species (described in more detail below). A UKHab results figure has been produced to display the main habitats recorded within the site boundary (see Figure 3). The mapping techniques are based on The UK Habitat Classification User Manual (Butcher et al, 2020) guidance.

3.3.1.3 Plant species abundance is described using the DAFOR scale as shown in Table 3. Percentages are an approximate indication rather than a quantitative measure.

Table 3. Key to species abundance

Code	Category	Description	Indicative Percentage Ranges
D	Dominant	Covers most of an area	50% or greater
A	Abundant	Very common throughout the area.	30 – 50%
F	Frequent	Common or with many individuals stands	15 – 30%
O	Occasional	Occurs in several places but not throughout; populations are not large.	5 – 15%
R	Rare	Occurs in low numbers in relation to size of area.	Less than 5%
"L" will be used to indicate abundance in a localised area, e.g. LA = Locally abundant			

3.3.1.4 Any invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were noted during the UKHab survey visit.

3.4 Extended Protected Species Surveys

3.4.1.1 During the UKHab survey, the search was extended to include a high-level search for protected and/or notable species. In addition, habitats on site were assessed for the potential to support key protected species.

3.4.1.2 These assessments do not constitute dedicated phase II protected species surveys, rather, they provide an indication of what phase II surveys may be required in the context of the development.

3.4.2 Bats

Roosting bats

3.4.2.1 A Preliminary Roost Assessment (PRA) was carried out on the site's building using close-focussing binoculars, both internally and externally, searching for Potential Roosting Features (PRFs) on the external structure of the building, and searching for evidence of internal usage (e.g. droppings, feeding remains etc.).

3.4.2.2 The PRA methodology is based on information contained within the Bat Conservation Trust (BCT) guidelines, 4th edition (Collins, 2023). The categorisation within this report is based on that set out in Table 4, which is used as a basis for determining the requirement for further surveys.

Table 4. Suitability of buildings for roosting bats

Category of Suitability	Typical Characteristics	Further Survey Requirements
High Roost Suitability	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three separate survey visits spaced a minimum of three weeks apart. Surveys can be undertaken between May and September, with at least two surveys between May and August.
Moderate Roost Suitability	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but are unlikely to support a roost of high conservation status.	Two separate survey visits spaced three weeks apart. Surveys can be undertaken between May and September with at least one survey between May and August.
Low Roost Suitability	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate condition and/or suitable surrounding habitat to be used on a regular basis by larger numbers of bats.	One survey between May and August.
Negligible Suitability	Negligible habitat features on site likely to be used by roosting bats.	No further work required.

Ground Level Tree Assessment

3.4.2.3 A Ground Level Tree Assessment (GLTA) was carried out on site as part of the PEA. Tree labelling used within this report matches that used in the associated Arboricultural Impact Assessment (Urban Green, 2025) for consistency across reports.

3.4.2.4 The GLTA conducted included trees present within the woodland to the western boundary of site, which may be subject to disturbance during the construction phase of development

3.4.2.5 The GLTA methodology is based on information contained within the BCT guidelines, 4th edition (Collins, 2023).

3.4.2.6 The survey involves a detailed inspection of trees from the ground to compile information about the tree, Potential Roosting Features (PRFs) (or lack of), and any evidence of bats. The inspection was conducted systematically and consistently around all parts of the tree (from all angles, both up close to the trunk and further away, where access permitted). Binoculars were also used to focus in on features higher up the trunk and on upper canopy limbs when required.

3.4.2.7 All features identified were recorded utilising ArcGIS Field Maps, allowing for GPS data to be recorded for each feature.

3.4.2.8 During a GLTA, the suitability of trees and PRFs can be categorised according to the categories outlined in Table 5. However, at this stage, the PRFs are not inspected in further detail (aerially, with an endoscope etc.) and therefore this is only an estimate of their potential for supporting roosting bats.

Table 5. Suitability of Trees for Roosting Bats

Category of Suitability	Category definition
NONE	Either no PRFs in the tree or highly unlikely to be any.
FAR	Further assessment required to establish if PRFs are present in the tree.
PRF	A tree with at least one PRF present.
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Commuting and foraging bats

3.4.2.9 The site was assessed for its suitability for use by commuting and foraging bats.

3.4.2.10 The commuting and foraging assessment methodology is based on information contained within the Bat Conservation Trust guidelines 4th edition (Collins, 2023). The categorisation within this report is based on that set out in Table 6, which is used as a basis for determining the requirement for further surveys.

Table 6. Suitability of site for foraging and commuting bats

Category of Suitability	Habitat Characteristics
High Suitability	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting or foraging bats such as; river valleys, streams, hedgerows, lines of trees or woodland edge. Site is close to or connected to known roosts.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats such as lines of trees, scrub or linked back gardens. Habitat connected to wider landscape that could be used for bats for foraging such as; trees, scrub, grassland or water.
Low Suitability	Habitat that could be used by small number of commuting bats such as; defunct hedgerow, isolated features not well connected to surrounding habitat or Isolated habitat that could be used by a small number of foraging bats such as a lone tree or patch of scrub.
Negligible Suitability	No features on site suitable for use by commuting and foraging bats.

3.4.3 Badger

3.4.3.1 The presence of badger setts were recorded as part of the extended UKHab survey visit.

3.4.3.2 A badger sett is defined as 'any structure or place which displays signs indicating current use by a badger' (Protection of Badgers Act, 1992). Badger setts are commonly categorised dependent on their level of use and size. Descriptions for each type of sett are given in Table 7 (based on Harris, Cresswell, and Jeffries, 1989).

3.4.3.3 The term 'current use' is not synonymous with continuous badger occupation. A sett is defined as such as long as signs indicative of 'current use' are present (Protection of Badgers Act, 1992). Therefore, a sett remains protected by the Act until such a time as the field signs have deteriorated to such an extent that they no longer indicate that the sett is in 'current use' (Natural England, 2009). Using this definition, the status of a sett was assessed using the criteria in Table 8 (based on Harris, Cresswell, and Jeffries, 1989).

Table 7. Badger sett categories

Sett Category	Criteria
Main	The largest and most used sett. Usually, a large number of holes with large spoil heaps and established paths between sett entrances usually marked with latrines. In continuous use and used for breeding.
Annexe	Normally less than 150m from the main sett and are connected to it by one or more well established paths. Several entrances but not always in use even if the main sett is active.
Subsidiary	Often consist of several entrances and are usually at least 50m from the main sett. There is often no obvious path connecting with another sett and they are not always in use.
Outlier	Usually consist of one or two holes with no obvious paths. Small spoil heaps outside holes indicating they are not extensive underground. Sporadic use often inhabited by foxes or rabbits when not used by badger.

Table 8. Badger sett status

Level of use	Definition
Active	Entrance holes well used, clear of debris/vegetation, except bedding material. The holes may or may not have been excavated recently. Fresh spoil outside. Signs of wear consistent with use (presence of smooth, compacted soil / prints / hairs).
Inactive	Entrance holes not in regular use: they have some accumulated debris/vegetation and no field signs indicating recent use by badgers. Sett use is often seasonal, and a sett recorded as inactive could be in regular use after a minimal amount of clearance.
Disused	Entrance holes show no signs of recent use and are often partly or wholly blocked. Entrances may require considerable digging to re-open. Setts may become disused through collapse, flooding, interference or other reasons

3.5 Ecological Constraints

3.5.1.1 Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

3.5.1.2 This PEA does not constitute a comprehensive botanical survey, however, is sufficient to inform the assessment.

3.5.1.3 The high-level protected species assessment provides a likelihood of protected species occurring on or near the site based on the known distribution of species and the suitability of the habitat.

3.5.1.4 October to March (inclusive) is a considered a suboptimal time for undertaking UKHab surveys as plant species are less conspicuous during this period. This is not considered to be a significant constraint as the majority of habitats were successfully categorised under the UKHab survey methodology.

3.5.1.5 The conclusions and recommendations detailed in this report are based upon the redline site boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the redline boundary or proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

3.5.1.6 The findings of this report represent the professional opinion of qualified ecologists but does not constitute legal advice. The client may wish to seek professional legal interpretation of any wildlife legislation or corresponding recommendations cited within this report.

3.5.1.7 The PRA on site was conducted on buildings both internally and externally, where possible. Despite this, buildings B1 and B4 were not internally accessible. This is not considered to be a major constraint, as both buildings were assessed as being well-maintained internally, with no loft voids identified. Furthermore, external access points identified on such buildings led into inaccessible areas of the buildings, such as roof voids.

3.6 Report Validity

3.6.1.1 In accordance with CIEEMs Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM, 2019), the details of this report will remain valid for a minimum period of **18 months** from the date of the survey (i.e. until 31st March 2027). After this date, this assessment should be reviewed by an ecologist to determine whether any updates are required.

3.7 Protected Species Definitions

3.7.1.1 For the purposes of this report, the term 'protected' and 'notable' species relates to:

- Species included on Schedules 2 and 4 of The Conservation of Habitats and Species Regulations 2017 (as amended);
- Species included on Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended), excluding species that are only protected in relation to 'sale' (see Section 9[5] and Section 13[2]);
- Invasive non-native species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended);
- Species of Principal Importance as defined under Section 41 of the Natural Environment and Rural Communities Act 2006 (England), Section 7 of the Environment (Wales) Act 2016, Section 2[4] of the Nature Conservation (Scotland) Act 2004;
- Species specifically listed on relevant biodiversity action plans or similar; and
- Badger and their setts; protected under the Protection of Badgers Act 1992.

4 Results

4.1 Desk Study Exercise

4.1.1 Designated Sites

4.1.1.1 There are two sites which form part of the National Site Network (NSN) located within 5km of the site, with the closest being Liverpool Bay Special Protection Area (SPA), located approximately 2.6km north of site.

4.1.1.2 There are five sites of national importance within 2km of the site boundary with the closest site being Graig Fawr Site of Special Scientific Interest (SSSI), located 500m to the south-east.

4.1.1.3 Furthermore, two non-statutory designated sites within a 0.5km radius of the site. Of these, Pwll y Bont was the closest, located adjacent to the northern boundary of site.

4.1.1.4 Details of the relevant statutory and non-statutory sites can be found within Table 9.

Table 9. Designated sites returned during the desk study

Designated Site	Distance from Site	Site Description
Statutory Designated Sites		
Graig Fawr SSSI	100m southeast	A hillside located at the northern tip of the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB). Several UK Biodiversity Action Plan (BAP) Priority invertebrate species have been reported here.
Clwydian Range and Dee Valley AONB	100m southeast	A species rich 390km² AONB, comprised of limestone crags, heather moorland, and wooded valley. A number of protected species including tawny owl, peregrine falcon, water vole and badger have been reported in the area.
Prestatyn Hillside SSSI	952m east	Recognised for its limestone grassland, heath and scrubland habitat covering 0.266km².
Maes Hiraddug SSSI	1km southeast	A nature reserve managed for as a traditional hay meadow by the North Wales Wildlife Trust. Recognised as an important wildflower meadow for butterflies and insect pollinators, namely bees.
Moel Hiraddug a Bryn Gop SSSI	1.6km south	A limestone hill topped by an Iron Age hillfort recognised for its geological and archaeological significance.
Liverpool Bay SPA	2.6km north	Bordering the coastlines of northwest England and north Wales, it is classified for the protection of red-throated diver (*Gavia stellata*), common scoter (*Melanitta nigra*), and little gull (*Hydrocoloeus minutus*) in the non-breeding season; common tern (*Sterna hirundo*) and little tern (*Sterna albifrons*) in the breeding season, and an internationally important waterbird assemblage.

Designated Site	Distance from Site	Site Description
Dee Estuary Special Area of Conservation (SAC) & SPA	3.1km northeast	One of the most important estuaries in the UK for overwintering wildfowl, supporting internationally important populations.
Non-Statutory Designated Sites		
Pwll y Bont	Adjacent to northern boundary	A wet area on the outskirts of Meliden comprised of marshy grassland, species rich hedgerows, reedbed, and open ditches. The area supports many grassland plant species such as ragged robin, amphibious bistort, greater bird's-foot-trefoil, cuckooflower, meadowsweet, water mint and carnation sedge.
Prestatyn-Dyserth Walkway	455m south-east	A 4km walkway along a disused railway line which passes through grassland habitat which supports several notable species, including the locally scarce vascular plant Nottingham catchfly and spring sandwort, listed on Denbighshire's Rare Plant Register. Adjacent to the walkway is a former limestone quarry whose rocky outcrops support plant species such as bloody crane's-bill which is also listed on local rare plant registers.

4.1.2 Protected Species

4.1.2.1 Data supplied by the Local Environmental Records Centre for North Wales was searched for the closest and most relevant records. Notable bird species listed in Table 10 may utilise boundary habitats for nesting, with all wider features used for foraging. Species records over 10 years old have been omitted. Only bird species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), red or amber species on the Birds of Conservation Concern (BoCC), Birds of Conservation Concern Wales (BoCCW) or Environment (Wales) Act 2016 (Section 7) list are included. Only invertebrates species that are legally protected are included below.

4.1.2.2 Records relating to certain protected species, including badger sett locations, is sensitive information, and due to the risk of public interference, remain confidential.

Table 10. Desk study records for protected species within 1km of the site boundary

Common Name	Scientific Name	Key Legal Protection / Policy Consideration	Total Number of Records	Closest Record to Site Boundary	
				Distance (m)	Year
Birds					
Barn Owl	*Tyto alba*	WCA 1981 Schedule 1	1	Within 1km	2021
Kestrel	*Falco tinnunculus*	Amber BoCC5; Red BoCCW4; EWA S7	4	670	2021
Peregrine	*Falco peregrinus*	WCA 1981 Schedule 1	5	620	2021
Red Kite	*Milvus milvus*	WCA 1981 Schedule 1	3	Within 1km	2024
Tawny Owl	*Strix aluco*	Amber BoCC5	3	620	2020
Chaffinch	*Fringilla coelebs*	Amber BoCCW4	1	680	2017
Greenfinch	*Chloris chloris*	Red BoCC5; Red BoCCW4	1	820	2017
Linnet	*Linaria cannabina*	Red BoCC5; Red BoCCW4	1	670	2017
Lesser Redpoll	*Acanthis cabaret*	Amber BoCCW4; EWA S7	1	Within 1km	2022
House Sparrow	*Passer domesticus*	Red BoCC5; Amber BoCCW4	1	990	2023

Common Name	Scientific Name	Key Legal Protection / Policy Consideration	Total Number of Records	Closest Record to Site Boundary	
				Distance (m)	Year
Magpie	Pica pica	Amber BoCCW4	1	820	2024
Rook	*Corvus frugilegus*	Amber BoCC5; Red BoCCW4	22	840	2023
Redstart	*Phoenicurus phoenicurus*	Amber BoCC5	1	Within 1km	2023
Redwing	*Turdus iliacus*	WCA 1981 Schedule 1; Amber BoCC5	256	820	2024
Mistle Thrush	*Turdus viscivorus*	Red BoCC5; Amber BoCCW4	1	820	2024
Song Thrush	*Turdus philomelos*	Amber BoCC5; EWA S7	1	Within 1km	2021
Starling	*Sturnus vulgaris*	Red BoCC5; Red BoCCW4; EWA S7	2	1000	2016
Grey Heron	*Ardea cinerea*	Amber BoCCW4	1	360	2015
Grey Wagtail	*Motacilla cinerea*	Amber BoCC5; Amber BoCCW4	3	Within 1km	2022
Wren	*Troglodytes troglodytes*	Amber BoCC5	2	360	2021
Woodpigeon	*Columba palumbus*	Amber BoCC5	2	710	2019
Woodcock	*Scolopax rusticola*	Red BoCC5; Red BoCCW4	1	Within 1km	2016
Whitethroat	*Curruca communis*	Amber BoCC5; Red BoCCW4	1	Within 1km	2022
Willow Warbler	*Phylloscopus trochilus*	Amber BoCC5; Red BoCCW4	1	Within 1km	2017
Great Black-backed Gull	*Larus marinus*	Amber BoCC5; Amber BoCCW4	4	670	2023
Herring Gull	*Larus argentatus*	Red BoCC5; Red BoCCW4	3	670	2017
Common Gull	*Larus canus*	Amber BoCC5; Amber BoCCW4	2	820	2024
Amphibians					

Common Name	Scientific Name	Key Legal Protection / Policy Consideration	Total Number of Records	Closest Record to Site Boundary	
				Distance (m)	Year
Common Frog	*Rana temporaria*	WCA 1981 Schedule 5 (sale only); EWA S7	1	430	2020
Reptiles					
Common lizard	*Zootoca vivipara*	WCA 1981 Schedule 5 (sale only); EWA S7	122	490	2023
Bats					
Brown long-eared	*Plecotus auritus*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	1	490	2019
Noctule	*Nyctalus noctula*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	4	450	2022
Common pipistrelle	*Pipistrellus pipistrellus*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	11	490	2024
Soprano pipistrelle	*Pipistrellus pygmaeus*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	5	450	2023
Natterer's Bat	*Myotis nattereri*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2	2	880	2017
Myotis bat species	*Myotis* sp.	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2	3	450	2022
Serotine	*Eptesicus serotinus*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2	1	490	2019
Lesser horseshoe bat	*Rhinolophus hipposideros*	WCA 1981 Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	8	490	2019
Terrestrial Mammals					
Hedgehog	*Erinaceus europaeus*	Wild Mammals Act 1996; NERC Act 2006; EWA S7	16	150	2022
Otter	*Lutra lutra*	WCA 1981, Schedule 5; Hab Regs 2017, Schedule 2; EWA S7	1	670	2021
Water vole	*Arvicola amphibius*	WCA 1981, Schedule 5; EWA S7	4	520	2019
Invertebrates					

Common Name	Scientific Name	Key Legal Protection / Policy Consideration	Total Number of Records	Closest Record to Site Boundary	
				Distance (m)	Year
Silver-studded blue butterfly	*Plebejus argus caernensis*	WCA 1981 Schedule 5 (sale only); EWA S7	40	570	2017
Dingy Skipper	*Erynnis tages*	EWA S7	1	700	2023
Grayling	*Hipparchia semele*	EWA S7	1	750	2023
Wall	*Lasiommata megera*	EWA S7	6	670	2023

4.1.3 Additional Considerations for Protected Species

4.1.3.1 A large number of records of common lizard (*Zootoca vivipara*) were returned within the data search. The majority of these records were returned in relation to Graig Fawr, a designated site located to the south of site.

4.1.3.2 Several bat roosts were identified within the local environment. The closest recorded is located approximately 150m east of the site, relating to a satellite roost for lesser horseshoe bat (*Rhinolophus hipposideros*) within a derelict building, recorded in 2008.

4.1.4 Priority Habitats

4.1.4.1 A search for priority habitats, within 500m of the site, using purchased biological records from COFNOD and MAGIC, identified two priority habitats within the local environment, including semi-natural grassland approximately 400m from site and native woodland approximately 440m from site.

4.1.5 Ancient Woodland

4.1.5.1 No stands of ancient woodland were recorded within 500m of the site boundary and therefore will not be discussed further in this report.

4.2 Extended UK Habitat Classification Survey Results

4.2.1 Habitats

4.2.1.1 The broad habitat types recorded during the PEA (see Figure 3) are detailed below. Supporting UKHab primary and secondary codes are provided in Appendix 3, and photographs of the site shown on Figure 4.

4.2.1.2 The UKHab types recorded during the site visit were:

- Blackthorn scrub (h3a),
- Bramble scrub (h3d),
- Mixed scrub (h3h),
- Modified grassland (g4),
- Hardstanding (u),
- Vegetated garden (u 828),
- Sparsely vegetated land (s),
- Temporary grass and clover leys (c1b),
- Ditches (r2b 50), and
- Native hedgerow with trees (h2a).

Blackthorn scrub (h3a)

4.2.1.3 A small parcel of blackthorn scrub is present to the eastern boundary of site, surrounded by bramble scrub to the north, and mixed scrub to the south. The parcel consists solely of blackthorn (*Prunus spinosa*), with further growth restricted in most directions through browsing pressure from livestock, and competition from bramble (*Rubus fruticosus* agg.). The parcel is managed through browsing exposure, although vertical growth is generally untamed.

Bramble scrub (h3d)

4.2.1.4 Bramble was present in small, scattered patches across the site. These areas all shared similar qualities; all were dominated by bramble, with limited growth of other scrub species, with dense growth, and encroaching into habitats adjacent to each parcel.

Mixed scrub (h3h)

4.2.1.5 Three parcels comprised of mixed scrub on site; two major parcels were located along the northern and eastern boundaries of site, and one minor parcel to the southern boundary. These scrub habitats were all generally unmanaged, consisting of former hedgerows which have developed into scrub, with scattered small trees throughout the scrub. The habitats have been generally managed by browsing pressure, although are vertically untamed.

Modified grassland (g4)

4.2.1.6 Modified grassland formed the majority of area habitats present on site, consisting of active pasture for grazing sheep livestock. Subsequently, the grass is maintained to a short sward throughout, and limited in species diversity and richness, consisting of common and widespread species commonly associated with pastures in the wider environment.

4.2.1.7 A full species list is available within Appendix 2.

Hardstanding (u)

4.2.1.8 The southern area of the northern parcel on site consisted of four buildings of varying size and structure, alongside associated parking and accessways.

4.2.1.9 Four buildings present on site – B1, B2, B3 and B4. B1, B2 and B3 all consisted of different forms of storage unit – all were one storey, with B1 consisting of an annexed garage, and B2-B3 consisting of repurposed barns. B3 was in poor condition overall, with each other building kept in generally good condition. B4 consisted of a bungalow unit, with an attached vegetated garden to the west (see Section 4.2.1.11, below).

4.2.1.10 Each building was assessed for their bat roosting potential, with full detail provided within the PRA in Appendix 4.

Vegetated garden (u 828)

4.2.1.11 To the west of B4 consisted of a well-maintained, active vegetated garden, consisting of a mixture of ornamental planting and short sward modified grassland comprised of species associated with lawns throughout the UK.

Sparsely vegetated land (s)

4.2.1.12 The centre of the northern parcel of site comprised of an area of sparsely vegetated land, previously utilised for equestrian enrichment, although it was not determined if it is still in active use. Grass species associated with the surrounding modified grassland, including fescue (*Festuca* sp.), Yorkshire fog (*Holcus lanatus*) and perennial ryegrass (*Lolium perenne*) were all present.

Temporary grass and clover leys (c1b)

4.2.1.13 The area of site which connected the access road to the main parcel of site consisted of a temporary grass ley, planted with ryegrass (*Lolium* sp.) at the time of the survey. The parcel on site was part of further cropland within the local environment, with no physical barriers such as hedgerow or scrub breaking habitat continuity. The ryegrass was short and relatively immature at the time of survey.

Ditches (r2b 50)

4.2.1.14 Two main ditches were present within the site bounds, one to the northwestern corner, and another to the eastern corner. The ditch to the northwestern corner was overgrown by dense mixed scrub at the time of the survey and was dry. The ditch to the western corner was shallow and waterlogged, although was generally limited in scope within the wider environment, and did not feature any riparian vegetation.

Native hedgerow with trees (h2a)

4.2.1.15 Three species-poor native hedgerows were present on site. The first hedgerow was present between the cropland and modified grassland parcel within the access road, acting as a barrier between the two habitats. This was predominantly made up of hawthorn (*Cratageus monogyna*) with scattered trees including crab apple (*Malus sylvestris*) and pedunculate oak (*Quercus robur*), with evidence of human damage present across most of its length.

4.2.1.16 The second hedgerow was located surrounding the eastern boundary of the cropland, which also showed evidence of pruning. Species present within this hedgerow included ivy (*Hedera helix*), hawthorn and blackthorn, with a nutrient enriched base containing species such as nettles (*Urtica dioica*) and cleavers (*Gallium aparine*).

4.2.1.17 The final native hedgerow is present along the southernmost field connecting to the main road. This hedgerow was mainly made up of hawthorn, with occasional gorse (*Ulex europaeus*) and blackthorn. Heavy management was present along most of the hedgerow length due to it encroaching into residential gardens offsite.

Species-rich native hedgerow (h2a5)

4.2.1.18 One short species-rich native hedgerow was present, located along the southern boundary of the northern parcel of site, utilised as a form of screening hedgerow from the wider environment. The hedgerow formed of hawthorn, bramble, blackthorn, dog rose (*Rosa canina*) and ash, generally unmanaged and in an overall poor condition.

Individual trees

4.2.1.19 Several trees were present throughout the site's bounds. These trees ranged from semi-mature to veteran trees, comprised of a range of native and ornamental species, including pedunculate oak, ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), and Leyland cypress (*Cupressus* x *leylandii*).

4.2.1.20 A full GLTA has been conducted, and details of the trees with identified PRFs are provided within Appendix 5.

4.2.2 Protected Species

4.2.2.1 The results of the extended UKHab survey, as it pertains to protected species, will be detailed below. As part of this, an assessment of the suitability of habitats for protected species on or near the site may also be stated. If the results of these assessments conclude that habitats or features on the site have negligible suitability for a given protected species and/or desk study records do not indicate likely presence, then protected species/groups may be ruled out within this section.

Notable riverine fauna

4.2.2.2 Notable riverine fauna, including white-clawed crayfish (*Austropotamobius pallipes*), otter (*Lutra lutra*), water vole (*Arvicola amphibius*) and kingfisher (*Alcedo atthis*), have been ruled out from further assessment. The watercourses on site provided limited suitability for the species, with one ditch dry at the time of the survey, and another which, although waterlogged, did not have sufficient flowing water, wider habitat connectivity, suitable banks or river bed structure, or riparian vegetation to support the aforementioned species.

Amphibians

4.2.2.3 No ponds were present on site; however, immediately adjacent to the site's western boundary existed an attenuation basin with standing water at the time of the survey, and several larger ditches are present within the wider environment to the north. These habitats have potential to provide suitable breeding and resting opportunities for both common amphibians, such as common frog (*Rana temporaria*) and common toad (*Bufo bufo*), as well as great crested newt (*Triturus cristatus*). The site's well-managed habitats, such as grasslands and cropland, provide low foraging value for such species, although the scrub and hedgerows provide suitable cover.

Reptiles

4.2.2.4 The majority of site is considered unsuitable for reptiles, with grassland habitats subject to active management, and a lack of suitable ecotones between the grasslands and scrub on site. Notwithstanding this, habitats in the local environment, notably Graig Fawr to the south of site, provides suitable habitat for widespread reptiles within the local environment such as grass snake (*Natrix natrix*) and common lizard, the latter of which returned in abundance within the data search, and the scrub may provide suitable habitat for transient widespread reptiles.

Birds

4.2.2.5 The site provides suitable foraging and nesting habitat for nesting birds, most notably within the site's mature trees, hedgerows and scrub.

4.2.2.6 Additionally, although the site was mostly formed of well-maintained habitats, such as short-sward modified grassland, the cropland may provide some foraging and nesting value for ground-nesting farm birds, such as skylark (*Alauda arvensis*), should the cropland be utilised for graminoid crop growth.

4.2.2.7 There are several designated NSN sites located within 5km of the site, with the closest related to Liverpool Bay SPA, approximately 2.6km north of site, which is internationally designated for its importance for wintering wildfowl. Habitat surrounding Liverpool Bay SPA may be ustilised by such wintering wildfowl as 'functionally linked land'. Notwithstanding this, the presence of wintering wildfowl on site is considered unlikely, as the site provides overall limited foraging value for wildfowl species due to the active nature of the site. Furthermore, the presence of livestock within the field are likely to disturb the species, increasing flight response and expending unnecessary energy during the winter, a time when energy is persevered.

Badger

4.2.2.8 The site provides suitable foraging and commuting value throughout the modified grassland, mixed scrub, and fruit-bearing trees such as crab apple and pedunculate oak. The site generally has good connectivity to the wider environment, with wider suitable resting habitat to the east, within the woodland, and commuting corridors throughout the rural habitats to the west.

4.2.2.9 Furthermore, a mammal hole identified on site resembling a potential badger sett entrance was identified on site (Grid Reference SJ 05434 80826), within the hedgerow located to the western boundary of the northern parcel of site. The mammal hole appeared partially active at the time of the survey; however, no evidence of badger usage was identified within the sett entrance. No further sett entrances or mammal holes were identified on site or within proximity to the mammal hole on site.

4.2.2.10 The site has potential to support commuting, foraging and resting badger.

Roosting bats

4.2.2.11 A full PRA and GLTA was conducted on the buildings and trees on site. The results were as follows:

- Building B3 was assessed as having 'Negligible' bat roosting potential:
- Buildings B1 and B2 were assessed as having 'Low' bat roosting potential;
- Building B4 was assessed as having 'Moderate' bat roosting potential;
- Trees T15, T23, G25b, T27, G28a, G28b and G28c were all assessed as having 'PRF-I' bat roosting potential;
- Tree G25a was assessed as having 'PRF-M' bat roosting potential; and
- Tree T21 was assessed as having 'FAR' bat roosting potential.

4.2.2.12 The locations of such buildings and trees, and their categories are detailed within Figure 4, with detailed descriptions provided within Appendices 4 and 5, respectively.

Commuting and Foraging bats

4.2.2.13 The site comprises mostly of modified pasture land with limited foraging potential for foraging bats; however, the hedgerows and scrub provide foraging and commuting routes for local bat populations, connecting potential roosts within buildings to the south, to foraging opportunities to the north. Lesser horseshoe bat (*Rhinolophus hipposideros*), listed within Annex II of the Habitats Directive (2017), is known to be present within the wider environment. Furthermore, the hedgerows on site were well established, with veteran and mature trees throughout, expected to attract significant numbers of invertebrate prey.

4.2.2.14 The site has been assessed as having low/moderate bat commuting and foraging potential.

Common mammals

4.2.2.15 The site has potential for common mammals such as hedgehog (*Erinaceus europaeus*) and rabbit (*Oryctolagus cuniculus*) through the presence of suitable foraging habitats within the modified grassland, and suitable cover within the scrub boundaries.

Non-Native Invasive Plant Species

4.2.2.16 No invasive plant species were recorded within, or adjacent to the site's boundary during the PEA.

5 Ecological Assessment and Recommendations

5.1 General Recommendations

5.1.1.1 The following ecological recommendations apply at a site wide basis; species, habitat and/or designated site-specific recommendations are provided in Table 11 (below).

5.1.1.2 Should the scope of works change significantly, it is recommended that an ecologist is consulted to review this report and assess if the recommendations remain fit for purpose.

5.1.1.3 Should the development not commence within one year of this report, any bat surveys undertaken as part of the works should be repeated. Should the works not commence with 18 months of this report, all ecology surveys will likely require repeating.

5.1.1.4 An Ecological Clerk of Works (ECoW) following a Precautionary Method of Works (PMoW) document, should be implemented for all proposed vegetation clearance and earthworks on site. The PMoW document will be specific to the site and will detail the methods the ECoW and operatives must follow during the clearance works. Specifically, this document will cover commuting and foraging bats, nesting birds, common amphibians, widespread reptile species, hedgehog and other common mammals, badger, and Pwll y Bont. Further justification for the inclusion of each protected species or group may be provided in Section 5.2.

5.2 Designated Sites, Habitats & Protected Species

5.2.1.1 Designated sites, protected habitats, and species will be considered in the context of 1) the results of the UKHab Survey and desk study 2) the development proposals, and 3) the legislation or policy that applies to each. Recommendations to overcome these ecological constraints in the form of further surveys, mitigation and (optional) enhancement measures are systematically detailed for each in Table 9 (below). To clarify, ecological enhancements stated below are suggested, rather than required to demonstrate compliance with wildlife legislation.

Designated sites

5.2.1.2 Several sites that comprise the NSN are present within 5km of the site, with Liverpool Bay SPA the closest, located 2.6km north. Further assessment of impacts to such sites, in form of a Habitats Regulations Assessment, is not considered necessary, for the following reasons:

- The site is not directly hydrologically linked to NSNs within the wider environment, with the ditch to the south of site separated from Liverpool Bay SPA by anthropogenic factors;
- An increase in visitor pressure is not considered within the Site Improvement Plan for Liverpool Bay SPA; and
- The presence of populations of foraging wintering wildfowl on site is considered unlikely, as detailed in paragraph 4.2.2.7.

5.2.1.3 The closest located statutory designated sites are attributed to Graig Fawr SSSI and Clwydian Range and Dee Valley AONB, both located approximately 100m south of site. It is not anticipated that these sites will be significantly impacted by any phase of development, as these designated sites are situated uphill from the site, negating potential surface runoff, and are separated by anthropogenic factors, chiefly the main road A547, as well as established residential/commercial developments. Furthermore, most significant groundworks are to take place within the main parcel on site, located approximately 400m away, rather than along the access road, located closest to the SSSI.

5.2.1.4 Non-statutory designated site Pwll y Bont is located along the southern and eastern bounds of site, and consists of marshy grassland, species rich hedgerows and open ditches. Although offsite, it is recommended that precautionary working methods are implemented into the PMoW document to prevent development from negatively impacting the habitats or species associated with the site.

Amphibians

5.2.1.5 The site has potential to support great crested newt in their terrestrial phase based on the presence of suitable commuting and foraging habitat on site and the presence of ponds and ditches within 250m of site. Great crested newt are European Protected Species under the Habs Regulations (2017) and protected under Schedule 5 of the WCA (1981). In absence of mitigation, there is a risk that earth works and scrub clearance during the construction phase would cause an offence under these regulations through the killing/injuring of individuals.

Reptiles

5.2.1.6 The site has potential to support transient widespread reptiles in a foraging and commuting context, with confirmed presence within the wider environment, despite the site's overall poor suitability for the species. Reptiles are protected under the Animal Welfare Act 2006, in which it is an offence to cause unnecessary suffering to any wild animal. Furthermore, common lizard are listed on Section 7 of the Environment (Wales) Act 2016, making them a material consideration during development.

Nesting birds

5.2.1.7 The site provides suitable habitat for a range of common and widespread nesting bird species. Birds and their nests are protected under the Wildlife and Countryside Act (1981). In the absence of mitigation, the proposed works have the potential to contravene relevant legislation through the improper removal of hedgerows, trees and scrub on site.

Bats

5.2.1.8 The site was assessed as having low/moderate potential for foraging and commuting bat, with potential to support lesser horseshoe bat. Additionally, the site has potential for roosting bats within the site extent and immediately adjacent, with nine trees assessed as having bat roosting potential, and three buildings assessed as having bat roosting potential.

5.2.1.9 Bats and their roosts are protected under the Habitats and Species Regulations (2017) and the Wildlife and Countryside act (1981). In the absence of mitigation, the proposed works have the potential to impact important flight lines and foraging locations.

Badger

5.2.1.10 One partially active mammal hole with potential to support badger was identified within the site boundary. Badger and their setts are protected under the Protection of Badgers Act (1992). In absence of mitigation, the planned proposals have potential to disturb or injure a badger or destroy an active badger sett.

Table 11. Summary of ecological constraints, survey, mitigation and opportunities

Ecological Constraint	Further Survey Recommendations	Recommendations for Mitigation	Enhancement Opportunities
Designated Sites	No further assessment in relation to designated sites within the wider environment is required.	The site is located adjacent to Pwll y Bont, a local designated site. It is recommended that precautionary working measures are undertaken during the construction phase of development, as detailed within a PMoW document.	N/A
Habitats	Further surveys of trees (for roosting bats) are covered below. All other habitats have been sufficiently surveyed.	Tree protection must be enforced in accordance with BS 5837 (2012) for retained habitats, including potential HPIs.	Any proposed additional soft landscaping at the Site should aim to provide a minimum 10% net gain in biodiversity.
Badger	Further surveys are recommended to be conducted in the form of a 21-day monitoring period of the mammal hole identified on site to fully assess its usage in relation to badger.	A Precautionary Method of Works document should be produced (as stated in Section 5.1) to account for this species during the construction phase of the works.	N/A
Bats	The GLTA has preliminarily identified several trees with potential for roosting. Trees T15, T23, G25b, T27, G28a, G28b and G28c all have been assessed as having 'PRF-I' bat roosting potential, tree G25a was assessed as 'PRF-M' and tree T21 was assessed as having 'FAR' potential. All trees are anticipated to be impacted by development, either through removal or construction works in proximity. As such, further survey work including Aerial Tree Inspections should be conducted on trees on site prior to the construction phase to fully assess these trees' suitability. Buildings B1 and B2 have been assessed as having 'Low' bat roosting potential, whereas building B4 has been assessed as having 'Moderate' bat roosting potential. Such buildings are to be demolished on	Trees and buildings containing Potential Roost Features (PRFs) to be retained as part of the design, and a suitable buffer zone implemented to prevent potential impacts to roosting bats as part of the proposed development. The lighting strategy should be developed in line with current guidance (BCT and ILP, 2023).	Retention of features which offer suitable roosting opportunity for bats should be considered as part of the proposed development. Retention of suitable habitats on Site and proposed landscaping should seek to increase connectivity to the wider landscape for foraging and commuting bats. The provision of six bat boxes as part of the detailed design will provide roosting opportunities for local bat species, such as common pipistrelle and soprano pipistrelle. Bat boxes should be orientated in a south-western aspect and placed high enough to avoid collision risk (e.g., 4-5 m in height).

Ecological Constraint	Further Survey Recommendations	Recommendations for Mitigation	Enhancement Opportunities
	site to facilitate development. Further surveys are required to ascertain the presence or likely absence of roosting bats within these structures. Further survey work should be in the form of Dusk Emergence Surveys. B1 and B2 requires a minimum of 1x emergence survey, and B4 requires a minimum of 2x dusk emergence surveys, with at least one survey to be conducted between May – August. The site has been assessed as having low/moderate bat foraging and commuting potential. Further surveys are to be conducted to fully assess the sites' potential in the form of three static deployment surveys conducted once per season (Spring, Summer, Autumn), as well as three Night Bat Walkover surveys conducted once per season.		
Birds	No further survey or assessment required.	A Precautionary Method of Works document should be produced (as stated in Section 5.1) to account for this group in a nesting context only during the construction phase of the works. Specifically, vegetation (including scrub, tree and cropland) clearance on site should be undertaken outside of the core bird breeding season which is March-August, inclusive.	Retention and enhancement of existing habitats on Site, such as trees, scrub and tall grassland swards, and the provision of nest boxes as part of the soft landscaping will increase nesting opportunities available for breeding birds. Six bird boxes could be installed on the new buildings / retained trees. A plan to show the locations of these boxes and the specifications should be produced by an ecologist once the layout is finalised. This

Ecological Constraint	Further Survey Recommendations	Recommendations for Mitigation	Enhancement Opportunities
			would increase the carrying capacity of nesting birds on the site.
Reptiles and Amphibians	The site has potential to support great crested newt in their terrestrial phase. Further survey work regarding great crested newt is conducted on site, specifically targeting all waterbodies within 250m of the site extent should be subject to a Habitat Suitability Index assessment (HSI) and eDNA sampling.	A Precautionary Method of Works document should be produced (as stated in Section 5.1) to account for common amphibians and widespread reptiles in a foraging context only during the construction phase of the works.	Proposed soft landscaping at the Site should aim to incorporate habitats suitable for amphibian species, such as the introduction of ponds with suitable aquatic planting, areas of rough grassland and log piles. Arisings from vegetation clearance should be retained and used to create hibernacula/refugia suitable for amphibians and reptiles where possible. Amphibian gully pot ladders to be installed, as practicable, to provide amphibians, reptiles and small mammals with a means of escape should they become trapped.
Other Protected/Notable Species	No further survey or assessment required.	A Precautionary Method of Works document should be produced (as stated in Section 5.1) to account for these species in advance of the construction phase of the works. The main focus will be on removal of vegetation and earthworks in the context of hedgehog, rabbit and other small mammals.	Proposed soft landscaping at the Site should aim to incorporate habitats suitable for notable species. In addition, the implementation of 'hedgehog highways' within fencing should maintain and increase connectivity to the wider landscape.

Ecological Constraint	Further Survey Recommendations	Recommendations for Mitigation	Enhancement Opportunities
Invasive and Non-native Species (INNS)	No further survey or assessment required.	N/A	Native shrubs of local provenance should be planted as part of the soft landscaping.
Invertebrates	No further survey or assessment required.	N/A	Installation of invertebrate hotels/bug hotels on site to increase the carrying capacity of invertebrates on the site.

6 References

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Appendix 1 – Relevant Legislation

Legislation Relating to Protected Species

European Protected Species (EPS) and their resting places (e.g. bat roosts) are protected under:

- The Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way (CRoW) Act 2000
- The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 transposes the European Union's 'Habitats Directive' (Council Directive 92/43/EEC) into UK law. The Regulations provide for the designation and protection of 'European Sites', the protection of EPS, and the adaptation of planning and other controls for their conservation. EPS are listed on Schedule 2 of these Regulations.

Under the Wildlife and Countryside Act 1981 (as amended), it is an offence to:

- Intentionally kill, injure or take certain animals listed in Schedule 5;
- Intentionally or recklessly damage or destroy any structure or place used for shelter or protection by an animal listed in Schedule 5;
- Intentionally or recklessly disturb any such animal while it is occupying such a structure or place; or
- Intentionally or recklessly obstruct access to any such structure or place.

The Conservation of Habitats and Species Regulations 2017 makes it an offence to:

- Deliberately capture, injure or kill any EPS;
- Deliberately disturb EPS in a way that affects their ability to survive, breed, rear young, hibernate, migrate, or significantly affect their local distribution;
- Deliberately take or destroy the eggs of EPS; or
- Damage or destroy a breeding site or resting place of EPS.

Several EPS, including great crested newt (*Triturus cristatus*), otter (*Lutra lutra*), and various bat species (Chiroptera spp.), are also listed as Species of Principal Importance (SoPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

Legislation for White-Clawed Crayfish (*Austropotamobius pallipes*)

White-clawed crayfish are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Intentionally take white-clawed crayfish from the wild.

The species is also listed under Annex II and V of the Habitats Directive and included in Section 41 of the NERC Act 2006.

Legislation for Amphibians (excluding Great Crested Newt)

Under the Wildlife and Countryside Act 1981 (as amended), four widespread amphibians (smooth newt (*Lissotriton vulgaris*), palmate newt (*Lissotriton helveticus*), common toad (*Bufo bufo*), and common frog (*Rana temporaria*)) receive limited protection under Section 9(5).

Common toad (*Bufo bufo*) is also listed as a SoPI under Section 41 of the NERC Act 2006.

Legislation Relating to Reptiles

All native reptile species receive some protection under the Wildlife and Countryside Act 1981 (as amended).

- Full Protection:
    - Sand lizard (*Lacerta agilis*) and smooth snake (*Coronella austriaca*) are fully protected under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981.
    - Offences include intentional killing, injuring, capturing, disturbing, or damaging breeding/resting places.
- Partial Protection (against killing and injuring):
    - Common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*), and adder (*Vipera berus*) receive limited protection against killing and injuring.
    - Grass snake, slow-worm, and adder are listed as SoPI under Section 41 of the NERC Act 2006.

Legislation Relating to Breeding Birds

All wild birds, their nests, and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Intentionally kill, injure, or take any wild bird;
- Intentionally take, damage, or destroy a wild bird's nest while in use or being built;
- Intentionally take or destroy a wild bird's egg;
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while nesting, or its dependent young.

Schedule 1 species (e.g., peregrine falcon (*Falco peregrinus*), barn owl (*Tyto alba*), black redstart (*Phoenicurus ochruros*)) receive additional protection against disturbance.

A number of bird species are SoPI under Section 41 of the NERC Act 2006.

Legislation Relating to Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992 (as amended), making it an offence to:

- Wilfully kill, injure, or take a badger;
- Intentionally or recklessly damage, destroy, or obstruct access to a badger sett;
- Disturb a badger while it is occupying a sett.

Legislation Relating to Water Vole (*Arvicola amphibius*)

Water voles are fully protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Intentionally kill, injure, or capture a water vole;
- Damage or destroy their habitat;
- Disturb them in their habitat.

Water voles are SoPI under Section 41 of the NERC Act 2006.

Legislation Relating to Invasive Plant Species

Several invasive plant species (e.g. Himalayan balsam (*Impatiens glandulifera*), Japanese knotweed (*Reynoutria japonica*)) are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), making it an offence to plant or cause these species to grow in the wild.

Regulations covering invasive species also include:

- The Environmental Protection Act 1990 (covers disposal of controlled waste, including Japanese knotweed contaminated material).
- The Hazardous Waste Regulations 2005 (regulates hazardous waste disposal when herbicides have been applied).

Appendix 2 – Plant Species List

Habitat	Scientific name	Common name
Modified grassland	*Agrostis capillaris*	Common bent
	Cynosurus cristatus	Crested dog's-tail
	Dactylis glomerata	Cock's foot
	Festuca sp.	Fescue sp.
	Cirisum arvense	Creeping thistle
	Lolium perenne	Perennial rye grass
	Holcus lanatus	Yorkshire fog
	Urtica dioica	Nettles
	Ranunculus acris	Meadow buttercup
	Rubus fruticosus agg.	Bramble
Mixed scrub	*Cratageus monogyna*	Hawthorn
	Prunus spinosa	Blackthorn
	Rubus fruticosus agg.	Bramble
	Ulex europaeus	Gorse
	Salix sp.	Willow sp.
	Rosa canina	Dog rose
	Urtica dioica	Nettles
	Gallium aparine	Cleavers
	Cirisum arvense	Creeping thistle
	Hedera helix	Ivy
	Acer pseudoplatanus	Sycamore
	Quercus robur	Pedunculate oak
	Malus sylvestris	Crab apple
	Phragmites australis	Common reed

Appendix 3 – UK Habitat Classification Codes

Hierarchical code	Code	Meaning
Primary Code	h3a	Blackthorn scrub
	h3d	Bramble scrub
	u1	Built-up areas and gardens
	h3h	Mixed scrub
	g4	Modified grassland
	s	Sparsely vegetated land
	c1b	Temporary grass and clover leys
	u1b5	Building
	u1b	Developed land; sealed surface
	h3f	Hawthorn scrub
	h2a	Native hedgerow
	r2	Rivers and streams
	h2a5	Species-rich native hedgerow
Secondary Code	11	Hedgerow with Trees
	32	Scattered trees
	50	Ditch
	81	Ruderal or ephemeral
	102	Sheep grazed
	106	Mown
	128	Tall or tussocky sward
	507	Nutrient-enriched substrate
	517	Recent Management
	523	Non-native
	828	Vegetated garden

Appendix 4 - PRA Results

Building Reference	Details	Category of suitability
B1	Building B1 comprises a single-storey, small outbuilding constructed of painted concrete blocks, with a corrugated metal roof and UPVC windows and a door on the western elevation, as well as large double wooden doors on the southern elevation. Aerial imagery indicates that B1 has been in place for at least 20 years. The building is currently in active use for residential storage and therefore experiences regular anthropogenic disturbance. External B1 was approximately 3 m tall and had a large, flat roof comprising a single layer of corrugated metal, with no loft void. The building was well lit during the day, and several gaps were visible between the structure and the fascia and soffit boards leading into the roof. It contained two sealed UPVC windows and a door, as well as large wooden double doors on the southern aspect. Along the eastern, western, and southern roof edges, four access points were identified between the fascia and/or soffit boards and the roof Internal No internal cavities were identified within the roof, with the interior constructed of the same material as the exterior, and no roof void. Summary Although no evidence of bats was recorded during the assessment, four potential roost features (PRFs) and access points suitable for bat roosting were identified.	Low
B2	Building B2 comprises a single-storey, small active shed subdivided into several internal compartments. The building is not fully sealed, and there was evidence of water ingress into the interior. Each compartment has a double, ground-to-roof wooden door. According to aerial records, the structure has been in place for at least 20 years. The walls are constructed of concrete blocks and finished with paint, and the roof is a slightly pitched corrugated metal. External No external roosting features were identified leading into any internal cavities of the building. The roof, comprised of corrugated metal, featured a single layer, with no roof void present. Internal No evidence of bat use was identified internally, however several PRFs were identified within ventilation bricks and several internal access points identified. The double wooden doors also provide access points for bats. Summary No evidence of bats was identified during the assessment, however several PRFs and or access points were identified as being suitable for bat roosting and access.	Low

B3	Building B3 adjoins B2 to rear and comprised a disused stable, and an internal area now disused due to roof collapse. The roof consisted of corrugated metal roofing sheets with no roof void, and a slight roof gradient. The building featured concrete brick walls and a large sliding wooden door. B3 was subdivided into several stable areas along a narrow corridor. External Several potential bat access points were identified, specifically beneath the fascia boarding on the southern elevation. However, all access points identified lead directly into the stable, with no loft void present. The concrete bricks had been painted, leaving them sealed and without any potential access points for bats. Internal The interior of the building was not in regular active use. No evidence of recent bat activity—such as droppings or insect wings—was identified within the building, and heavy cobwebbing was present at potential features, suggesting no recent bat use. Wooden beams were present within the ceiling, but no potential roosting features were identified within them. Parts of the building were disused at the time of the survey and had suffered water damage due to a collapsed roof adjacent to the stable area. Summary No evidence of bats or suitable roosting feature/access points were identified during the assessment.	Negligible
B4	Building B4 comprises a single storey inhabited residential bungalow, with stone cladded exterior walls and a tiled roof. External The building's exterior consisted of a tiled roof with two chimneys in use and several skylights, as well as UPVC doors and windows. Potential roosting features were identified on the roof during the assessment. Slipped and missing tiles were present across the roof and within the ridge tiles. Although the roof was in moderately good condition, it could still provide potential access points and roosting features. Damaged brickwork and missing mortar were observed on both chimneys, which could also provide access points for bats. Internal No access to the internal building was possible on the day of the survey. Summary Evidence of suitable roosting feature/access points were identified during the assessment. No direct evidence of bats was found.	Moderate

Appendix 5 – GLTA Results

Tree Reference	Details	Category of suitability
G28a	G28a consisted of a mature ash (*Fraxinus excelsior*) with a single frost crack extending approximately 1.5m from the base. Within the top section of the crack there is a potential access point to a roost feature.	PRF-I
G28b	G28b consisted of a mature ash (*Fraxinus excelsior*) with multiple potential roosting features, including a knot hole, frost crack, canker and a wound. Each of these features could potentially lead to cavity spaces within the internal space of the tree.	PRF-I
G28c	G28c consisted of a mature ash (*Fraxinus excelsior*) with a single small cavity within an area of canker close to the base leading into a potential roosting feature.	PRF-I
T27	T27 consisted of a mature ash (*Fraxinus excelsior*) with butt rot and wounds at the base and canker and knot hole extending along the stem.	PRF-I
G25a	G25a consisted of a mature sycamore (*Acer pseudoplatanus*) with a large woodpecker hole facing west at approximately 3m and leading into a deep cavity.	PRF-M
G25b	G25b consisted of a mature sycamore (*Acer pseudoplatanus*) with butt rot and a cavity feature approximately 1m from ground. Ivy is slightly obscuring the cavity.	PRF-I
G22	G22 consisted of a mature willow (*Salix* spp.) with several features including squirrel hole, wounds and a compression-fork approximately 0.5 – 1m from ground.	PRF-I
G21	G21 consisted of a mature English oak (*Quercus robur*) with one feature, a knot hole approximately 3m from ground.	FAR
T15	consisted of a veteran English oak (*Quercus robur*) with butt rot, split branches throughout crown and a stem break at approximately 5m.	PRF-I