



Carmarthen West

Ecological Appraisal

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Partnership Ltd**

On behalf of:
Lovell Partnerships Ltd

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Executive Summary

- S1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Lovell Partnerships Ltd (hereafter referred to as 'the Applicant'). This Ecological Appraisal considers the ecological implications of proposed development at Carmarthen West (hereafter referred to as 'the Site'). In brief, the proposals relate to the development of 84 new residential units and associated works.
- S2 Detailed ecological assessments of the Site were undertaken by EDP in 2025 and included an initial desk study and Extended Phase 1 Habitat Survey, and further detailed surveys with respect to bats, badger (*Meles meles*), dormouse (*Muscardinus avellanarius*) and reptiles.
- S3 No part of the Site is covered by any statutory or non-statutory designations. However, there are several such designations within the potential zone of influence of the Site, the most pertinent of which include Afon Tywi Special Area of Conservation (SAC) and Site of Special Scientific Importance (SSSI), Carmarthen Bay and Estuaries SAC, Cors Goch National Nature Reserve (NNR) and SSSI. In addition, Ancient Semi-natural Woodland (ASNW) lies within 1km of the Site.
- S4 With respect to habitats, the Site comprises one agricultural, species-poor grassland field, considered to be of negligible ecological importance. The southern boundary is defined by a species-rich hedgerow and associated wet ditch, which qualifies as 'important' under the wildlife and landscape criteria within the *Hedgerows Regulations* (1997). The wet ditch flows in an eastly direction, parallel to Clifford Byway. The western boundary of the Site is delineated by an intact, species-rich hedgerow whilst the north-east corner of the Site supports a section of species-poor hedgerow. Such features are judged to be of Local level importance and are Priority Habitats for Wales. Habitats supported by the Site are of value for a breeding bird and bat assemblage and also provide suitable habitat for badger, dormouse, common reptile and amphibians, as well as for notable mammal species such as European hedgehog (*Erinaceus europaeus*). However, a detailed reptile survey recorded no reptiles within the Site boundary and are thus presumed absent or in such low numbers as to be undetectable. Similarly, no evidence of dormouse was identified during the surveys or in such low numbers as to be undetectable.
- S5 EDP has provided specific proposals for the avoidance, mitigation and compensation of any predicted impacts including, where possible, the protection of those valued features within and adjacent to the Site and creation of new habitats to compensate for proposed losses, whilst delivering new foraging, breeding and refuge opportunities for protected/notable species.
- S6 Overall, given the scale of the development proposals and scope of those proposed mitigation measures in respect of habitats and protected/notable species, EDP considers that the proposed development is capable of compliance with relevant wildlife legislation and planning policy for the conservation of the natural environment at all levels, whilst also delivering benefits to biodiversity and ecosystem resilience.

Section 1 Introduction

- 1.1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Lovell Partnerships Ltd (hereafter referred to as 'the Applicant'). This Ecological Appraisal considers the ecological implications of proposed development at Carmarthen West (hereafter referred to as 'the Site').
- 1.2 This report has been prepared with reference to the following key guidance:
- Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal¹;
 - CIEEM Guidelines for Ecological Impact Assessment²; and
 - British Standard: Biodiversity - Code of Practice for Planning and Development³.
- 1.3 EDP is an independent environmental planning consultancy with offices in Cirencester, Cardiff and Cheltenham. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website (www.edp-uk.co.uk).

SITE CONTEXT

- 1.4 The Site is centred approximately at Ordnance Survey Grid Reference (OSGR) SN 38590 19736. The Local Planning Authority (LPA) is Carmarthenshire County Council (CCC). The location and extents of the Site are illustrated on **Plans EDP 1-3**.
- 1.5 The Site measures circa 3.4 hectares (ha) and is located to the west of Carmarthen and north of the A40 dual carriageway. The Site comprises a single agricultural field bound by hedgerows, with Fford Pendre forming its eastern boundary. Immediately south is Cliffordd Byway and an existing residential development. Agricultural land delineated by hedgerows and with pockets of woodland dominate the wider landscape to the immediate west, north and east. The Tawelan Brook and associated riparian habitat flows c.115m north and 290m east of the Site.

¹ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester

² CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2*. Chartered Institute of Ecology and Environmental Management, Winchester

³ BSI (2013) *Biodiversity - Code of Practice for Planning and Development*. BS 42020:2013. British Standards Institute

DEVELOPMENT PROPOSALS

- 1.6 In brief, full planning permission is sought for the development of 84 new homes, comprising 42 affordable and 42 open market units. The Landscape Strategy Plan is provided as **Appendix EDP 1** to this report.
- 1.7 The proposed development will feature comprehensive access and internal highway infrastructure, as well as dedicated active travel routes. It includes green infrastructure designed to include open space and deliver net benefit for biodiversity, along with play areas and drainage infrastructure, including Sustainable Drainage Systems (SuDS). Approximately 1ha of the Site will be dedicated to open spaces, amenity footpaths, attenuation features, existing and proposed planting, play areas, and social gathering spaces.
- 1.8 The ecological sensitivities of the Site have influenced the final layout through an iterative design process. Thus, the masterplan incorporates a degree of 'inherent' mitigation to avoid or reduce the severity of potential ecological impacts.

SCOPE OF THE ASSESSMENT

- 1.9 This Ecological Appraisal describes the current ecological interest within and around the Site, which has been identified through standard desk- and field-based investigations. It then considers the potential ecological impacts and opportunities for ecological enhancement based on the final masterplan (incorporating inherent mitigation) in the context of relevant legislation and planning policy. Finally, this Appraisal identifies the necessary additional measures to avoid, mitigate or provide compensation for potential impacts, and the mechanisms for securing such measures.
- 1.10 The remainder of this report is structured as follows:
- **Section 2** summarises the methodology employed in determining the baseline ecological conditions within and around the Site (with further details provided within appendices and on plans where appropriate);
 - **Section 3** summarises the baseline ecological conditions (with further details also provided within appendices and on plans where appropriate) and identifies and evaluates any pertinent ecological features/receptors;
 - **Section 4** describes how the development design has responded to the ecological constraints and any embedded/inherent mitigation, and then considers the potential impacts of the proposals on pertinent ecological features;
 - **Section 5** proposes mitigation and enhancement measures for the current and possible future planning stages, in the context of relevant legislation and planning policy, and mechanisms to secure their delivery; and
 - **Section 6** summarises the Mitigation and Enhancement Strategy for the Site and provides the overall conclusions of the Appraisal.

Section 2 Baseline Methodology

2.1 This section of the Ecological Appraisal summarises the methodologies employed in determining the baseline ecological conditions within and around the Site. This has been undertaken by appropriately qualified ecologists using relevant best practice methodologies wherever possible. Reasons for any departure from best practice methodology are given and normally relate to the timing of EDP's commission and/or the availability of access to parts of the Site or wider study area. Full details of the techniques and process adopted are, where appropriate, provided within appendices and on plans to the rear of this report.

DESK STUDY

2.2 The desk study is an important element of the initial baseline data gathering, which entails the initial collation and review of contextual information, such as designated sites, together with known records of important habitats or species.

2.3 The desk study involved collating biodiversity information from the following sources:

- West Wales Biodiversity Information Centre (WWBIC); and
- Multi-Agency Geographic Information for the Countryside (MAGIC) website⁴.

2.4 The desk study was undertaken during March 2025 and involved obtaining the following information:

- International statutory designations (10km radius around the Site);
- National statutory designations and non-statutory local sites (2km radius);
- Annex II bat species⁵ records (6km radius);
- All other protected, priority and notable species records (2km radius); and
- All other notable habitat records (500m radius).

2.5 These search areas are considered sufficient to cover the potential zones of influence⁶ of the proposed development in relation to designated sites, habitats and species.

⁴ www.magic.gov.uk

⁵ Bat species listed in Annex II of the EC Habitats Directive, namely Greater horseshoe, Lesser horseshoe, Barbastelle and Bechstein's bats.

⁶ Zone of Influence - the areas and resources that may be affected by the proposed development.

- 2.6 The adopted Carmarthenshire Local Development Plan (2006 – 2021)⁷ and Carmarthenshire Supplementary Planning guidance⁸. were also reviewed as part of the desk study to understand local priorities with regards to the protection of ecological features/biodiversity.

EXTENDED PHASE 1 HABITAT SURVEY

- 2.7 The main habitats within the Site, together with their dominant/characteristic plant species, were identified by undertaking an Extended Phase 1 Habitat Survey in March 2025.
- 2.8 Full details of the habitat survey methodology are provided within **Appendix EDP 2**.

DETAILED (PHASE 2) SURVEYS

- 2.9 The scope of Phase 2 surveys undertaken within the Site was defined during and/or following the initial studies described above.
- 2.10 The surveys ‘scoped in’ based upon the findings of the Extended Phase 1 Habitat Survey are summarised in turn below, with reference to sources of further detailed information where applicable.

Hedgerow Survey

- 2.11 Owing to the presence of hedgerows within the Site, with variable species-diversity, structure and condition, a detailed survey was undertaken to assess the value and condition of all onsite hedgerows and to identify whether any of them qualify as ‘important’, with reference to the Wildlife and Landscape criteria provided in Part II of Schedule 1 of the *Hedgerows Regulations* 1997. The survey was completed on 10 March 2025.
- 2.12 Full details of the hedgerow survey methodology, and any limitations encountered, are provided in **Appendix EDP 3**. The location of the hedgerow sections surveyed is shown on **Plan EDP 1**.

Bat Surveys

- 2.13 During the Extended Phase 1 Habitat Survey, a number of habitats present within the Site, including hedgerows, mature trees and dense scrub, were identified as being of moderate suitability to support foraging and commuting bats. In addition, trees present within, or immediately adjacent to the Site may support features suitable for roosting bats. The following surveys for bats were therefore undertaken, with reference to best practice guidelines⁹:

⁷ Carmarthen County Council. Carmarthenshire Local Development Plan (2006 - 2021). Found at: https://www.cartogold.co.uk/CarmarthenshireLDP/english/text/06_Specific-Policies.html#Ch6_8 [Accessed: October 2025]

⁸ Carmarthenshire Supplementary Planning. Carmarthenshire County Council. Found at: <https://www.carmarthenshire.gov.wales/media/3723/nat-env-and-biodiversity-draft-spg.pdf> [Accessed: 06.11.2025]

⁹ Collins, J. (ed.) (2023). *Bat Surveys: for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London

Bat Roost Inspection Surveys - Trees

- Ground Level Tree Assessment (GTLA) for bat roosting suitability, undertaken on 30 May 2025.

Bat Activity Surveys:

- Nighttime Bat Walkover (NBW) surveys conducted in May 2025, June 2025 and September 2025; and
- Automated detector surveys conducted monthly between April 2025 and October 2025.

2.14 Full details of the bat survey methodologies, and any limitations encountered, are provided in **Appendix EDP 4**. The results of the GTLA are presented on **Plan EDP 4**, the results of the NBW surveys are presented on **Plans EDP 5-7** and the locations of the automated detectors are shown on **Plan EDP 8**.

Dormouse Survey

2.15 During the initial habitat survey, the hedgerows and scrub were identified as being suitable for dormouse (*Muscardinus avellanarius*). A habitat quality assessment, in accordance with best practice guidance¹⁰, was therefore undertaken on 10 March 2025 to alongside the Extended Phase 1 Habitat Survey.

2.16 Surveys to determine the presence/likely absence of dormouse were subsequently undertaken, with the survey effort determined by habitat quality, in accordance with best practice guidelines. The following surveys for dormouse were undertaken:

- Nest Tube Survey; and
- Footprint Tunnel Survey.

2.17 Full details of the methodologies employed during the habitat quality assessment and presence/absence surveys are provided in **Appendix EDP 5** and the locations of the nest tubes and tunnels are presented on **Plan EDP 9**.

Badger Survey

2.18 A survey to record any evidence of badger activity within the Site and within 30m of the Site (where access was permitted) was undertaken on 10 March 2025, during the Extended Phase 1 Habitat Survey.

2.19 During the survey, any signs of badger activity such as holes, latrines, trails, snuffle holes and hairs on fencing or vegetation were recorded. Where holes of a size and shape consistent with badgers were identified, the following signs of badger activity were searched for in order to determine whether they were currently in use:

- Fresh spoil outside entrances;

¹⁰ Wells, D., Chanin, P. & Gubert, L., (2025), *Hazel Dormouse Mitigation Handbook*. The Mammal Society.

- Bedding material (typically dried grass) outside entrances;
- Holes being cleared of leaf litter/other debris;
- Badger guard hairs; and
- Footprints and fresh tracks leading to/from the holes.

2.20 The results of the badger survey are presented on **Plan EDP 10**.

2.21 Owing to the presence of a mammal hole with similar characteristics to that of a badger sett, located along the southern boundary of the Site, further monitoring to confirm usage was undertaken. Monitoring of the mammal hole included the deployment of one camera trap next to the mammal hole for a minimum of 21 days. Monitoring was undertaken from 30 September 2025 to 22 October 2025. The camera was checked on three separate occasions (08 October 2025, 15 October 2025 and 22 October 2025) to maintain the equipment and review video footage recorded.

Limitations

2.22 Badger surveys can be undertaken at any time of year and are, therefore, not limited by seasonal factors.

2.23 Areas of dense vegetation, particularly in the south-east corner of the Site, precluded a thorough search such that evidence of badger, if present, may have been missed. This is not considered a constraint to an assessment, with no mammal paths into the scrub, or badger field signs along this boundary.

2.24 Additionally, land within 30m of the Site boundary to the west was not surveyed due to land access limitations. This is not considered a constraint to an assessment, given that the habitat further west is agricultural land used for silage.

Reptile Survey

2.25 Hedgerows, dense scrub and ditches present within the Site provide suitable basking, foraging, dispersal and hibernation habitats for common and widespread reptile species. A detailed refugia-based reptile survey was therefore undertaken to confirm the presence and distribution, or likely absence, of reptiles within the Site with reference to best practice guidelines¹¹.

2.26 A total of 33 artificial refugia were deployed across the Site on 03 April 2025. Areas of exceptionally low or negligible suitability for reptiles (for example improved grassland) were excluded from the survey. This equates to 16.5 refugia per hectare, which is greater than the recommended 5 to 10 refuges per hectare as set out in the best practice guidelines for 'general survey purposes'. Survey visits were undertaken on seven subsequent occasions in suitable weather conditions and involved two techniques:

¹¹ Froglife (1999) *Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10, Froglife, Halesworth.

- Visual encounter surveys – entailing a walked transect across the Site to undertake a visual search for basking animals in suitable habitat or evidence of animals (e.g. sloughed skin); and
- Checking of the artificial refugia for sheltering or basking animals to establish the presence/likely absence of reptiles.

2.27 This ensured that all areas of suitable habitat were represented in the survey, and that the survey was not biased towards those reptiles more likely to use refugia, such as slow-worm (*Anguis fragilis*).

2.28 During each survey visit, the following information was recorded: species, number of animals observed, and sex where possible, location (refugia or visual encounter), date, start and finish times, and weather. A summary of the survey dates, times and weather conditions are presented in **Table EDP 2.1**. The locations of the artificial refugia are shown on **Plan EDP 11**.

Table EDP 2.1: Reptile Survey Visits

Survey Visit	Date	Start Time	End Time	Wind Speed (Beaufort Scale)		Temperature (°C)		Cloud Cover (%)	
				Min	Max	Min	Max	Min	Max
1	25/04/25	08:00	09:00	2	3	12	14	20	60
2	29/04/25	15:30	17:00	4	5	16.5	17	10	10
3	08/05/25	16:30	17:15	1	1	14	15	10	10
4	16/05/25	09:00	09:45	1	1	13	13	0	0
5	23/05/25	09:30	10:15	1	1	14	15	10	10
6	30/05/25	09:45	10:45	4	5	16	16	70	90
7	09/06/25	08:00	09:45	2	3	13	14	40	90

Limitations

2.29 Reptile surveys undertaken within the Site were largely completed during suitable weather conditions and within recognised months for reptile surveys.

ECOLOGICAL SURVEYS SCOPED OUT

2.30 **Table EDP 2.2** summarises other survey types which, whilst occasionally required to inform a planning submission for development sites, are not deemed to be necessary/appropriate in this case.

Table EDP 2.2: Ecology Surveys Scoped Out

Survey Type	Reasons for Scoping Out
Detailed Botanical Assessment	The Site is dominated by improved grassland managed for agriculture with native hedgerows and dense scrub vegetation present along the boundaries of the Site. The dominant habitat, improved grassland, is species-poor and lacking in structural diversity. No notable plant species were recorded during the Extended Phase 1 Habitat Survey. No further assessment of floristic communities is therefore, considered necessary to inform a planning application.
Breeding and Wintering Birds	Given the small extent of the Site and nature of those habitats supported therein, no further breeding or wintering bird surveys are recommended in this instance. Precautionary measures of clearance during the pre-construction phases of development are instead recommended to ensure no harm/disturbance to any nesting birds during the breeding bird season.
Otter (<i>Lutra lutra</i>)/Water Vole (<i>Arvicola amphibius</i>)	There is no suitable habitat for either species within or immediately adjacent to the Site. Although a wet ditch is located along Cliffordd Byway, the ditch is shallow (<5cm) and lacks any submerged, emergent or marginal vegetation that would provide refuge and/or a foraging resource to water vole and is similarly of too small a size to be of value to otter. Both species are thus presumed absent from the Site, and no further survey is recommended.
Great Crested Newt (<i>Triturus cristatus</i>)	Carmarthen is located beyond the natural range of this species with no desk study records returned within 2km of the Site. No further survey for this species is, therefore, considered necessary in this instance.
Invertebrate	Habitats present on-site, dominated by improved species-poor grassland are likely to support a limited assemblage of common and widespread invertebrate species only. No further survey is considered necessary in this instance.

Section 3 Baseline Results

- 3.1 This section of the Ecological Appraisal summarises the baseline ecological conditions determined through the course of desk-based and field-based investigations described in **Section 2**. In particular, this section identifies and evaluates those ecological features/receptors that lie within the Site's potential zone of influence, and which are pertinent in the context of the proposed development. Further technical details are, where appropriate, provided within appendices and on plans to the rear of this report.
- 3.2 Where a particular ecological feature/receptor has been confirmed to be present, or presence is inferred based on habitat suitability, its ecological importance is assessed. The level of ecological importance assigned to each ecological feature is based upon established geographical value systems and the uses the following scale: International and European (highest) > National > Regional > County > District > Local > Negligible (lowest).

DESIGNATED SITES

- 3.3 Information regarding designated sites was obtained during the desk study. Statutory designations (those receiving legal and planning policy protection) and non-statutory designations (those receiving planning policy protection only) are discussed in turn below.

Statutory Designations

- 3.4 Statutory designations represent the most significant ecological receptors. Internationally important statutory designations include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites (including potential SPAs, possible SACs and proposed Ramsars). These designations are protected under the *Conservation of Habitats and Species Regulations 2017* (as amended) (the *Habitats Regulations*).
- 3.5 Nationally important statutory designations include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). NNRs are also SSSIs, both of which are protected under the *Wildlife and Countryside Act 1981* (as amended).
- 3.6 The legal protection of SACs, SPAs, Ramsar Sites and SSSIs is also reflected in policies included within Planning Policy Wales 12 (February 2024) (PPW) and within Technical Advice Note 5: *Nature Conservation and Planning* (TAN5), which are a material consideration during the planning application process. Further consideration is afforded to the protection of SSSIs within updates to Chapter 6 of PPW, published during October 2023, with increased clarity on the position for site management and exemptions for minor development necessary to maintain a 'living' landscape, and contribute to an ecologically coherent and resilient network of protected sites and linkages between these. Other development is considered unacceptable as a matter of principle.

- 3.7 Local level statutory designations include Local Nature Reserves (LNRs) and are generally considered to be of importance at the County level or lower. LNRs are designated under the *National Parks and Access to the Countryside Act 1949*, however, protection of LNRs is given via local planning policies and/or by-laws.
- 3.8 Statutory designations are also recognised as key natural assets within the adopted Carmarthenshire Local Development Plan¹², specifically Policy SP14 (*Protection and Enhancement of the Natural Environment*).
- 3.9 No part of the Site is covered by any statutory designations. However, there are two internationally important designations within 10km of the Site and two nationally important designations within 2km of the Site. These sites are summarised in **Table EDP 3.1** and illustrated on **Plan EDP 2**.

Table EDP 3.1: Statutory Designations within the Site's Potential Zone of Influence

Designation	Approx. Distance from Site	Interest Feature(s)
Internationally Important Statutory Designated Sites (within 10km of the Site)		
River Tywi/Afon Tywi SAC	1.7km east	<p>The Afon Tywi/River Tywi is designated as a SAC for several features including twaite shad (<i>Alosa fallax</i>). Shads are a migratory species that ascend rivers to spawn in late spring. In Britain, significant populations of shad spawn in the River Tywi. The populations of this species are threatened in Europe mainly due to obstructions to migration and issues surrounding water quality.</p> <p>The River Tywi is one of the best rivers in Wales for otters (<i>Lutra lutra</i>). There are abundant signs of otter and there are suitable lying-up areas along the riverbank, but there few known breeding sites on the main river, although cubs have been observed.</p> <p>Additional Annex II species present as a qualifying feature, but not a primary reason for site selection include sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), river lamprey (<i>Lampetra fluviatilis</i>), allis shad (<i>Alosa alosa</i>) and bullhead (<i>Cottus gobio</i>).</p>

¹² Carmarthenshire County Council. Carmarthenshire Local Development Plan. Found at: https://www.cartogold.co.uk/carmarthenshireldp/english/text/00_Policy-Index.htm [Accessed: 21.10.25]

Designation	Approx. Distance from Site	Interest Feature(s)
Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC	2km south-east	<p>This SAC is designated for a number of Annex I habitats, including:</p> <ul style="list-style-type: none"> • Sandbanks which are slightly covered by sea water all the time; • Estuaries; • Mudflats and sandflats not covered by seawater at low tide; • Large shallow inlets and bays; • Salicornia and other annuals colonising mud and sand; and • Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>). <p>Twaite shad is present and a primary reason for selection of the site. Additionally, sea lamprey river lamprey, allis shad and otter are qualifying features.</p>
Nationally Important Statutory Designated Sites (within 2km of the Site)		
Maesyrior SSSI	0.9km west	The features of this SSSI are geomorphological.
River Tywi/Afon Tywi SSSI	1.7km east	The River Tywi SSSI extends downstream from Llandovery to the confluence with the River Taf and Pembrey Coast SSSI in Carmarthen Bay. It is an actively eroding river meandering across a wide flood plain which is composed of alluvium, glacial sands and gravels. This has resulted in extensive shingle banks being formed.
Cors Goch, Llanllwch NNR/SSSI	1.7km east	Cors Gôch is one of the most south-westerly raised bogs in Britain and one of only six large raised bogs in Wales. The bog is the only known site in Carmarthen for the bog bush-cricket (<i>Metrioptera brachyptera</i>) and for the black sympetrum dragonfly (<i>Sympetrum scoticum</i>). The scarce marsh fritillary butterfly (<i>Euphydryas aurinia</i>) also occurs here, as does the scarlet tiger moth (<i>Callimorpha dominula</i>).

Non-statutory Designations

3.10 Non-statutory designations are also commonly referred to in planning policies as 'local sites', although in fact these designations are typically considered to be of importance at a county level. In Wales, such designations are typically termed Sites of Importance for Nature Conservation (SINC). Additional sites such as non-designated nature reserves (e.g., Wildlife Trust nature reserves) and Ancient Semi-Natural Woodland (ASNW) are considered here when not covered by other designations.

- 3.11 No part of the Site is covered by any non-statutory designations and there are no non-statutory designations located within 2km.
- 3.12 However, a desk study identified six areas of ASNM, 13 Restored Ancient Woodland (RAW) areas and four Plantation on Ancient Woodland (PAW) areas within 2km of the Site, the locations of which are shown on **Plan EDP 3**.

HABITATS

- 3.13 There are several mechanisms by which habitats that lie outside of statutory and non-statutory designations are protected, or by which their importance is recognised at a national level. This includes the following:
- 'Important' hedgerows are protected from removal (out with the planning process) by the *Hedgerows Regulations 1997*;
 - Certain habitats are listed priority habitats, which public authorities in Wales must seek to maintain and enhance (to promote ecosystem resilience) as part of policy or decision making under Section 6 of the *Environment (Wales) Act 2016*; and in so doing, deliver net benefits to biodiversity in accordance with Chapter 6 of PPW through adoption of a stepwise approach by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort, compensated for. Enhancement must be secured by delivering a biodiversity benefit primarily on a site or immediately adjacent to the site, over and above that required to mitigate or compensate for any negative impact;
 - PPW 12 includes a presumption against development which results in significant harm to biodiversity and ecosystem functioning, or results in the loss of irreplaceable habitat¹³. PPW 12 also sets out how planning authorities should fulfil their 'Biodiversity and Resilience of Ecosystems Duty' as required by the *Environment (Wales) Act 2016*. Pertinent to this, Chapter 6 of PPW 12 also afford further consideration to the protection of trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial green infrastructure function;
 - Chapter 6 of PPW 12 places further emphasis on adopting a proactive approach to integration of green infrastructure within development plans/proposals, adopting building with nature standards and in so doing, supporting the delivery of ecosystem services and net benefits to biodiversity across site boundaries; and
 - The importance of protecting habitats, and networks of habitats, is reflected in the Carmarthenshire Local Development Plan, specifically Policy EQ4 (Biodiversity).
- 3.14 The distribution of different habitat types within and adjacent to the Site is illustrated on **Plan EDP 1**. The habitats are further described in **Appendix EDP 2** alongside illustrative photographs and species lists. A summary and qualitative assessment of these habitats is

¹³ Irreplaceable habitats are technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed. Habitats noted as irreplaceable within PPW are ancient woodland, semi-natural woodland, and ancient, veteran and heritage trees.

provided in **Table EDP 3.2. Plan EDP 1** also shows the hedgerow reference numbers referred to below.

Table EDP 3.2: Summary of Habitats within the Site

Habitat Type	Distribution	Intrinsic Ecological Importance*
Improved grassland	Dominant habitat covering main field.	Negligible
Intact species-rich hedgerow with trees	Delineates the western boundary, labelled H2 .	Local (priority habitat)
Defunct species-rich hedgerow with trees	Delineates the southern boundary (H3).	Local (priority habitat)
Intact species-poor hedgerow	Part of a larger section of hedgerow located offsite, within the north-east corner of the Site (H1).	Local (priority habitat)
Defunct species poor hedgerow (recently planted)	Delineates the eastern boundary, labelled H4 and H5 .	Site
Dense scrub and scattered Scrub	A larger patch is located in the south-east corner and also covering an earth mound. Additionally, smaller areas are located in the south-west and north east corner.	Site
Dry ditch	A dry ditch is located along the eastern boundary, which was likely created during the construction of Fford Pendre.	Site
Wet ditch	A wet ditch is located immediately adjacent to the southern hedgerow, holding up to 5cm of water, and flowing in an easterly direction. Another smaller section of wet ditch is located along the southern section of hedgerow H2 on the eastern side; this ditch was mostly damp, only holding small patches of water, approximately 2cm.	Site

*Importance irrespective of any protected, priority or other notable species which may be present

3.15 As noted within **Table EDP 3.2**, the majority of the Site is made up of habitats which are of less than Local, or negligible, intrinsic importance. However, the hedgerows are judged to be of Local level importance and are priority habitats for Wales. Furthermore, a number of the habitats, including those which are of limited intrinsic importance, also require consideration in relation to their importance in maintaining populations of protected, priority or other notable species. This is discussed further below.

PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

3.16 Certain species receive legal protection in the UK and are commonly known as ‘protected species’. In reality, the level of protection for different species varies considerably, from protection solely against ‘killing and injury’ to full protection of the species and their places of

refuge. Where pertinent, details of legal protection afforded to species/ species-groups are provided below.

- 3.17 In addition to protected species there are other species/species-groups that do not receive legal protection, but which are notable owing to their conservation status. This includes priority species, which public authorities in Wales must seek to maintain and enhance as part of policy or decision making under Section 7 of the *Environment (Wales) Act 2016*. PPW recognises species as an important component of biodiversity, as does the Carmarthen Local Development Plan, specifically Policy EQ4 and EQ5.
- 3.18 The likelihood of presence, or confirmed presence, of protected, priority or other notable¹⁴ wildlife species within the Site is summarised below with reference to desk study records, habitat suitability and detailed surveys where relevant. Further details are made available within the appendices and plans where referenced.

Breeding and Wintering Birds

- 3.19 All wild birds, their nests and eggs are protected under the *Wildlife and Countryside Act 1981* (as amended) (WCA). This makes it an offence to:
- Intentionally kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take, damage or destroy the egg of any wild bird; or
 - 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.
- 3.20 In addition, further protection is afforded to those wild bird species listed on Schedule 1 of the WCA, prohibiting any intentional or reckless disturbance to these species while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird. A number of species are also included as priority species.
- 3.21 Wintering birds do not receive direct legal protection; however, they may form part of a protected assemblage originating from a statutory designation in the vicinity.
- 3.22 Numerous records of bird species were returned during the desk study, including 14 records of WCA Schedule 1 species, 19 records of priority species, and a further 19 records of species included on the latest Red list of Birds of Conservation Concern in Wales¹⁵, and 34 on the Amber list. The vast majority of records received relate to species that would not normally breed in habitats found within the Site.
- 3.23 Records of priority species within 2km, include but are not limited to, bullfinch (*Pyrrhula pyrrhula*), brambling (*Fringilla montifringilla*), dunnock (*Prunella modularis*), fieldfare (*Turdus pilaris*), greenfinch (*Chloris chloris*), house sparrow (*Passer domesticus*), lapwing

¹⁴ Notable species are those which are not legally protected but are formally identified as being of conservation concern.

¹⁵ Johnstone, I.G., Hughes, J., Balmer, D.E., Brenchley, A., Facey, R.J., Lindley, P.J., Noble, D.G. & Taylor, R.C. 2022. *Birds of Conservation Concern Wales 4: the population status of birds in Wales*. Milvus 2:1.

(*Vanellus vanellus*), lesser redpoll (*Acanthis cabaret*), lesser spotted woodpecker (*Dryobates minor*), linnet (*Linaria cannabina*), merlin (*Falco columbarius*), redwing (*Turdus iliacus*), skylark (*Alauda arvensis*) song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*), swallow (*Hirundo rustica*), swift (*Apus apus*), willow tit (*Poecile montanus*), and yellow hammer (*Emberiza citrinella*).

- 3.24 Two bird nests were noted during the course of dormouse tunnel checks, both identified along the western hedgerow boundary (**Plan EDP 1**; Target Note 1 (**TN1**) (SN 38537 19818) and **TN2** (SN 38538 19825), both nests were characteristic of *Turdus* species, and unoccupied. Incidental sightings of birds noted during the course of site surveys include dunnoek, chaffinch (*Fringilla coelebs*), great tit (*Parus major*), wren (*Troglodytes troglodytes*), blackbird (*Turdus merula*), magpie (*Pica pica*), carrion crow (*Corvus corone*), common chiffchaff (*Phylloscopus collybita*), jackdaw (*Coloeus monedula*) and European robin (*Erithacus rubecula*).
- 3.25 Generally, dense scrub and native hedgerows within and adjacent to the Site provides suitable foraging and nesting resource for an assemblage of common and widespread bird species. Agricultural grassland within the Site is likely to be of negligible importance for ground nesting species given its small extent, with proximity of boundary features with grassland subject to management and not likely reaching a sufficient height to offer suitable cover from predators. Such habitats are of potential value as a foraging resource, albeit limited given its agriculturally improved and species-poor nature. As such, the presence of a significant assemblage of breeding and overwintering species, utilising the Site for breeding, roosting and foraging is unlikely. A breeding bird assemblage is thus considered to be of **Site** level only, whilst its value to a wintering bird assemblage is considered **Negligible**.

Bats

- 3.26 All species of British bat are listed as European Protected Species (EPS) on Schedule 2 of the *Conservation of Habitats and Species Regulations 2017* (as amended) (referred to as the 'Habitats Regulations'). This affords strict protection to bats and their roosts, and makes it an offence to:
- Deliberately capture, injure or kill a wild animal of an EPS;
 - Deliberately disturb wild animals of an EPS wherever they are occurring, in particular, any disturbance which is likely to impair their ability to survive, to breed or reproduce, to significantly affect the local distribution or abundance of the species to which they belong, or in the case of hibernating or migratory species, to hibernate or migrate; or
 - Damage or destroy a breeding site or resting place of a wild animal of an EPS.
- 3.27 Additional protection for bats is also afforded under the WCA, making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place. In addition, soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), greater horseshoe bat (*Rhinolophus ferrumequinum*), barbastelle bat (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), and lesser horseshoe bat (*Rhinolophus hipposideros*) are also listed as priority species.

- 3.28 The desk study returned 86 records for bats within the 2km search radius around the Site. These records relate to at least 11 different species, with the closest record of confirmed bat roosting being for *Pipistrellus* sp., located approximately 1.1km north-east from the Site.
- 3.29 Eleven records of Annex II species were returned within 6km of the Site. This included records of greater horseshoe, lesser horseshoe and barbastelle bats. Records of a day roost for greater horseshoe bat and feeding roost for lesser horseshoe bat were returned 1.2km north-west of the Site. This is in addition to a record for a greater horseshoe hibernation roost, located c.5km east of the Site.

Bat Roost Inspection Surveys - Trees

- 3.30 One tree was identified during the GLTA as having a Potential Roosting Feature (PRF) for bats. Full details are provided within **Appendix EDP 4** with the tree location shown on **Plan EDP 4**.

Bat Activity Surveys

- 3.31 Overall, the habitats present within the Site were assessed as having moderate suitability for foraging and commuting bats offering continuous habitat in the form of native hedgerows along the Site peripheries with good connectivity to suitable habitat present across the wider landscape including wooded riparian corridors associated with the Tawelen Brook c.115m north and 290m east of the Site. Whilst hedgerow boundaries are likely to be of value to a bat assemblage, facilitating their dispersal across the wider landscape, improved grassland which dominates the Site is likely to be of more limited suitability, particularly as a foraging resource given its poor botanical diversity and value to a diverse assemblage of prey invertebrates.
- 3.32 The findings of the NBW and automated detector surveys are provided in detail within **Appendix EDP 4** and the approximate distribution and diversity of bat species recorded during the NBW surveys are illustrated on **Plan EDP 5 - 7**. Automated detector locations are shown on **Plan EDP 8**.
- 3.33 In summary, bats recorded during the NBW surveys include common (*Pipistrellus pipistrellus*) and soprano pipistrelle, noctule (*Nyctalus noctula*), Myotis (*Myotis* sp.) and long-eared (*Plecotus* sp.) bats. Overall, however, activity was dominated by common and soprano pipistrelle with other bat species occurring rarely. Activity was typically greatest along the southern boundary of the Site during all survey visits although several passes of bats were also recorded along the eastern boundary (particularly during June) and within the north-east corner of the Site during May. Comparing survey visits, activity was greatest during June although this peak in activity was thought to be linked to the presence of a tractor on-site that evening that was collecting silage, potentially disturbing invertebrates and providing increased foraging opportunities for bats.
- 3.34 The vast majority of recorded bat calls were of common pipistrelle with calls of soprano pipistrelle making up a small minority of the total. Individual registrations of Annex II species greater horseshoe were recorded on four nights at both locations and therefore not considered to be reliant on the habitats within the Site. Other species recorded included Nathusius' pipistrelle, noctule, serotine, *Myotis* and long-eared bats.
- 3.35 Levels of bat activity recorded during the automated surveys were generally moderate, with relatively higher levels recorded in April, June and July and relatively lower levels recorded in

September. Activity levels were higher in the north-east corner of the Site (automated detector location **L1**), however, to the south at location **L2**, a slightly higher diversity was recorded, with an average of 5.8 bat species, while location **L1** supported an average of 5.4 species.

- 3.36 Taking into account the diversity of bat species utilising the Site and the extent of their roosting, foraging and commuting activity, and with reference to Bat Mitigation Guidelines 2025¹⁶, the overall bat species assemblage using the Site is considered to be of **Local** importance.

Dormouse

- 3.37 Hazel dormouse is an EPS receiving strict protection under the *Habitats Regulations* as summarised above in respect of bats. Additional protection is also afforded to this species under the WCA as summarised above in respect of bats. This species is also listed as a priority species.
- 3.38 No records for dormouse were returned within 2km of the Site, although two records occur c.3km south-east of the Site, dated December 2017.
- 3.39 The habitats on-site are considered to be of moderate suitability for dormouse, with the southern and western boundary hedgerows being species-rich and connected to the wider landscape, providing suitable breeding, dispersal and foraging opportunities for this species.
- 3.40 No evidence of dormouse was found during the nest tube or footprint tunnel surveys. A small number of wood mice (*Apodemus sylvaticus*) and evidence of their activity (including nests and food caches) were recorded. Based on the survey results, it is assumed that a dormouse population is likely absent from the Site or in such low numbers as to be undetectable.

Otter and Water Vole

- 3.41 Otter is an EPS receiving strict protection under the *Habitats Regulations* as summarised above in respect of bats. Additional protection is also afforded to this species under the WCA as summarised above in respect of bats. This species is also listed as a priority species.
- 3.42 Water vole and their burrows receive protection under Schedule 5 of the WCA. This makes it an offence to:
- Intentionally kill, injure or take (capture) a water vole;
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a water vole uses for shelter or protection; and
 - Intentionally or recklessly disturb water voles while they are in a place of shelter or protection.
- 3.43 Water vole is also listed as a priority species.

¹⁶ Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.

- 3.44 Ten records of otter were returned within 2km of the Site, the closest record being 1.1km south of the Site. Records are mostly associated with the Tawelan Brook and River Tywi located circa north/east and south-east of the Site respectively. No records of water vole were returned within 2km of the Site's boundary.
- 3.45 There is no suitable aquatic habitat for these species within or adjacent to the Site. As such, both species are presumed absent.

Badger

- 3.46 Badgers and their setts are protected under the *Protection of Badgers Act 1992*, which makes it an offence (*inter-alia*) to:
- Wilfully kill, injure, take, or cruelly ill-treat a badger; and
 - Damage or interfere with a sett, by doing one of the following things:
 - Damage a badger sett or any part of it;
 - Destroy a badger sett;
 - Obstruct access to, or any entrance of, a badger sett;
 - Cause a dog to enter a badger sett; or
 - Disturb a badger when it is occupying a sett.
- 3.47 The 1992 Act defines a badger sett as “*any structure or place which displays signs indicating current use by a badger*”.
- 3.48 The protection afforded to badgers is primarily due to animal welfare issues and history of persecution rather than concerns over their unfavourable nature conservation status.
- 3.49 Thirteen records of badger were returned within 2km of the Site, with the closest record located 500m south-west of the Site. Hedgerow and scrub habitat within the Site offer opportunities for badger foraging and sett building.
- 3.50 During the badger survey, a single mammal hole was identified along the southern boundary, characteristic of badger with fresh spoil. The access to the hole is north-facing and approximately 20cm (width) x 17cm (height). In addition to the above, evidence of badger latrines and mammal runs were recorded in the north-east corner of the Site, within and around the area of dense scrub, . The location of all badger and mammal evidence is shown on **Plan EDP 10**.



Image EDP A1.1: Mammal excavation within southern boundary hedgerow.



Image EDP A1.2: Badger latrine, identified in the north-east corner of the Site.

- 3.51 The recordings from the trail camera monitoring returned no evidence of badger. Monitoring identified usage of the hole by European rabbit (*Oryctolagus cuniculus*) and wood mouse (*Apodemus sylvaticus*). Other species recorded within the footage included common blackbird (*Turdus merula*), European robin (*Erithacus rubecula*) and domestic cat (*Felis catus*). As such, the mammal hole is not considered to be in active use by badger.
- 3.52 Given the common status of badger within the country and Carmarthenshire and the use of the Site by badger for foraging and commuting, the Site the overall population is considered to be of **Site** level importance.

Other Mammal Species

- 3.53 Records of the following priority mammal species were returned within 2km of the Site:
- Polecat (*Mustela putorius*) – three records, the closest record is 800m south of the Site, although this record is dated 1994. The most recent record is from 2019 recorded 2.1km west of the Site;
 - European hedgehog (*Erinaceus europaeus*)¹⁷ – 48 records, with the closest record located 200m south of the Site dated 2022; and
 - Brown hare (*Lepus europaeus*) – three records located 1.1km west, however, the most recent record is from 1994.
- 3.54 The Site encompasses suitable foraging and breeding habitats for hedgehog and polecat, and there is a reasonable likelihood that these species will utilise the Site. The wider agricultural landscape also provides suitable habitat for brown hare although improved grassland across the Site provides limited cover for this species, being characterised by a short, managed sward. Such species potentially occurring within the Site are considered to be of **Site** level importance.

Great Crested Newt and Other Amphibian Species

- 3.55 Great crested newt is an EPS receiving strict protection under the *Habitats Regulations* as summarised above in respect of bats. Additional protection is also afforded to this species under the WCA as summarised above in respect of bats. This species is also listed as a priority species.
- 3.56 Other legally protected amphibians are rare and have a very restricted distribution¹⁸, however, common toad (*Bufo bufo*) is a widespread species which is listed as a priority species.
- 3.57 No records of great crested newt were returned within 2km of the Site. Four records of common toad, one for smooth newt (*Lissotriton vulgaris*) and eight for common frog (*Rana temporaria*) were returned within 2km of the Site. The closest record is for common frog is located 270m south-east of the Site. The closest record for common toad is located 1.6km north of the Site.

¹⁷ Hedgehog is also protected from capture or killing by specific methods under Schedule 6 of the WCA

¹⁸ Natterjack toad (*Epidalea calamita*) and Northern pool frog (*Pelophylax lessonae*) are EPS, protected under WCA and priority species.

- 3.58 Improved grassland habitat is considered to be of limited suitability for an amphibian population, although hedgerow boundaries offer some refuge and may facilitate dispersal of such species across the wider landscape. A desk study exercise identified four ponds within 500m of the Site, the closest c.180m west which may provide suitable breeding habitat. However, the closest of these is located beyond Ffordd Pendre with the remaining three located beyond the Tawelan Brook, considered barriers to the dispersal of this species. being characterised by a short, managed sward.
- 3.59 Carmarthenshire is located beyond the known geographic range of great crested newt such that this species is considered likely absent from the Site. With respect to common amphibian species and particularly given their widespread distribution, there is a reasonable likelihood that these species are present on-site and considered to be of **Site** level importance.

Reptiles

- 3.60 All species of common reptile, namely common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), grass snake (*Natrix helvetica*) and adder (*Vipera berus*), receive at least limited protection from harm under the WCA, making it an offence to cause intentional killing and injuring of these species. In addition, these species are also listed as priority species.
- 3.61 Nineteen reptile records were returned within 2km of the Site, relating to adder, grass snake, slow-worm and common lizard. The closest record is for slow-worm and grass snake located 600m south of the Site.
- 3.62 Suitable habitat for reptiles within the Site is confined to field boundaries and dense scrub, with improved grassland considered sub-optimal habitat for a reptile population given its poor structural and botanical diversity offering limited/no cover from predators and a limited foraging resource. The detailed refugia survey recorded no reptiles within the Site boundary. Reptiles are thus presumed absent or otherwise present in such low numbers as to be undetectable. If present, such low populations are judged to be of **Site** importance only.

Invertebrates

- 3.63 A desk study returned multiple records for notable invertebrate species within 2km of the Site, dominated by priority moth species. Of particular pertinence, a desk study returned the following records for the Site:
- Blood-vein moth (*Timandra comae*) – within 1.6km, a priority species;
 - Buff ermine (*Spilosoma lutea*) – within 1.4km, a priority species;
 - Cinnabar (*Tyria jacobaeae*) – within 1.1km, a priority species;
 - Flounced chestnut moth (*Anchoscelis helvola*) – within 1.2km, a priority species; and
 - Dot moth (*Melanchra persicariae*) – within 1.6km, a priority species.
- 3.64 Agricultural, species-poor improved grassland, is considered likely to support only a limited assemblage of common and widespread invertebrate species, particularly given its poor species diversity and homogenous nature. Hedgerows and scrub are likely to support a more

diverse and notable assemblage, with shrubs providing a foraging and breeding resource to certain species. The invertebrate assemblage likely supported by the Site is therefore considered to be no greater than **Site** level importance.

Rare/Scarce Plant Species

- 3.65 A desk study returned 33 records of rare/scarce plants within 2km of the Site in the last 15 years. This includes records for bluebell (*Hyacinthoides non-scripta*), northern yellow-cress (*Rorippa islandica*), tubular water-dropwort (*Oenanthe fistulosa*) and stream water-crowfoot (*Ranunculus penicillatus* subsp. *penicillatus*).
- 3.66 Of these species, bluebell has been recorded on-site in association with the western and southern boundary hedgerows. It is possible that the habitats on-site could support northern yellow cress which can be found along ditches. However, tubular water-dropwort and stream water-crowfoot are unlikely present on-site given the absence of suitable waterbodies.
- 3.67 No rare or scarce plant species have been identified on-site. The Site is dominated by habitats and floral communities that are relatively common and widespread in Wales and the UK.

Non-Native Invasive Species

- 3.68 Himalayan balsam (*Impatiens glandulifera*) was recorded within the Site, in the north-west corner, as shown on **Plan EDP 1** as Target Note 1 (**TN1**). Himalayan balsam is listed as an invasive non-native species listed under Schedule 9 of the *Wildlife and Countryside Act (1981, as amended)*. It is an offence for any person to plant or otherwise cause to grow a plant listed on Part II of Schedule 9 of the Act. This could include cutting the plant allowing for seeds to spread if not correctly managed.
- 3.69 The cause of spread of Himalayan balsam into the Site is not known, although it spreads through explosive seed pods that launch seeds up to 7 meters, whilst water, animals, humans and vehicular movements can carry seeds further afield.

SUMMARY OF IMPORTANT ECOLOGICAL FEATURES

- 3.70 The key ecological features/receptors pertinent to the development proposals, based on the survey findings described above, are set out in **Table EDP 3.3**.

Table EDP 3.3: Summary of Ecological Features

Feature	Key Attributes	Ecological Importance
Statutory Designated Sites		
River Tywi/Afon Tywi SAC	The Afon Tywi/River Tywi is designated as a SAC for several features including twaite shad. Additionally, it is one of the best rivers in Wales for otters. Annex II species present as qualifying features, but not a primary reason for site selection include sea lamprey, brook lamprey, river lamprey, allis shad and bullhead. No part of the Site is covered by this statutory designation.	International
Carmarthen Bay and Estuaries/Bae Caerfyrddin ac Aberoedd SAC	Designated for its Annex I habitats including sandbanks which are slightly covered by sea water permanently, estuaries, mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, <i>Salicornia</i> sp. and other annuals colonising mud and sand, and Atlantic salt meadows. No part of the Site is covered by this statutory designation.	International
River Tywi/Afon Tywi SSSI	River Tywi SSSI extends downstream from Llandovery to the confluence with the River Taf and Pembrey Coast SSSI in Carmarthen Bay. It is an actively eroding river meandering across a wide flood plain which is composed of alluvium, glacial sands and gravels. No part of the Site is covered by this statutory designation.	National
Cors Goch, Llanllwch NNR/SSSI	Cors Gôch is one of the most south-westerly raised bogs in Britain and one of only six large, raised bogs in Wales. No part of the Site is covered by this statutory designation.	National
Non-statutory Designated Sites		
Ancient Woodland	23 Areas of Ancient Woodland. including Ancient Semi-Natural Woodland, Restored Ancient Woodland Site and Plantation on Ancient Woodland Sites.	County
Habitats		
Native Hedgerows	Present along the boundaries of the Site. The southern boundary hedgerow qualifies as 'important' under the <i>Hedgerows Regulations (1997)</i> criteria.	Local
Species		
Bats	At least eight bat species/species groups were confirmed to be present foraging and/or commuting within the Site during the automated detector surveys with a single tree with potential roosting features identified.	Local

Section 4 Impact Assessment

4.1 This section of the Ecological Appraisal first considers any avoidance/mitigation which is embedded within development design, as represented by the Landscape Strategy Plan provided at **Appendix EDP 1**. It then considers the likely impacts of the development proposals on the pertinent ecological features identified in **Section 3** in the absence of additional mitigation.

EMBEDDED MITIGATION

4.2 EDP has provided input throughout the iterative design process so the development layout, although illustrative, reflects some important measures to avoid, mitigate or compensate for ecological impacts as well as other measures designed to provide long-term ecological enhancements. In so doing, a site-wide mitigation strategy has been developed with reference to the 'Mitigation Hierarchy' described within CIEEM Guidelines for Ecological Impact Assessment, the principles of which are further adopted within PPW's 'step-wise approach' and the Carmarthenshire Supplementary Planning guidance¹⁹. These principles include:

- First, avoidance and minimisation of adverse impacts to ecological receptors through e.g. retention of habitat, connectivity and populations of protected/notable species;
- Next, mitigation for any unavoidable impacts including loss/fragmentation of habitats and/or harm to protected/notable species;
- Where residual impacts remain following avoidance and mitigation, provide appropriate compensation such as the creation of new/alternative habitat and opportunities; and
- In addition to avoidance, mitigation and compensation, the inclusion of measures for the enhancement of biodiversity and ecological resilience and their long-term resilience.

4.3 Embedded mitigation comprises the following:

- Areas of open space, Local Area for Play (LAP) and footpaths have been incorporated into the design providing opportunities for recreation and visual amenity, and in so doing minimising recreational impacts that may arise upon statutory designations within the Zol⁶ of the Site including Cors Goch NNR/SSSI and areas of ancient woodland;
- Retention and buffering of valuable habitats including native hedgerows, known to support breeding birds, foraging/commuting bats and badgers;
- Inclusion of natural/informal greenspace within the development where the creation or enhancement of ecologically valuable/biodiverse habitat is proposed; and

¹⁹ Carmarthenshire Supplementary Planning. Carmarthenshire County Council. Found at: <https://www.carmarthenshire.gov.wales/media/3723/nat-env-and-biodiversity-draft-spg.pdf> [Accessed: 06.11.2025]

- Inclusion of SuDS to maintain run-off rates and to maintain or improve the quality of surface water discharging into nearby wet ditches.

IMPACTS ON DESIGNATED SITES

Statutory Designations

- 4.4 As described in **Section 3**, there are four statutory designations within the potential zone of influence of the Site. The potential impacts on these designations, in the absence of additional mitigation, are discussed below.

International Designations

- 4.5 In accordance with Part 6 of the *Habitats Regulations*, a Habitat Regulations Assessment (HRA) is required where a plan or project may give rise to significant effects upon any European site designated to conserve natural habitats and species that are rare, endangered, vulnerable or endemic within the European Community. This includes SACs designated for their habitats and/or species of European importance, and SPAs classified for rare, vulnerable and regularly occurring migratory bird species. A separate Shadow HRA is to be provided for this planning application.
- 4.6 There are two international statutory designations, including River Tywi SAC and Carmarthen Bay and Estuaries SAC, located within 10km of the Site, as shown on **Plan EDP 2**. Both statutory designations are considered sufficiently distant and spatially separated from the Site, such that no direct or indirect effects associated with physical loss/damage and disturbance from increased lighting/noise will arise. There is, the potential for impacts to arise upon River Tywi SAC, associated with deterioration in water quality during the construction and operational phases of development, given hydrological connectivity between the Site and the River Tywi via the on-site ditch network. Pollution incidents could also arise as a result of leaks and spills from construction activities, resulting in the introduction of hydrocarbons and other contaminants from site plant and/or spoil movement. Inherent within the Landscape Strategy Plan, however, are proposals for SuDS to manage surface water from new development during the operational phase.
- 4.7 Of further consideration, changes in the water quality of the River Tywi SAC are likely to arise following an increase in sewage effluent discharge and subsequent increase in phosphorus (P) loading to the watercourse following occupation of proposed residential development. Such impacts will be offset to some degree by a reduction in diffuse pollution following cessation of agricultural activities across the Site, whilst the development will be delivered in accordance with local planning policy to reduce grey water inputs into the sewage system. Wastewater will further be collected and treated at Parc y Splott Waste Water Treatment Works (WWTW).
- 4.8 There is also the potential for increase nutrient phosphorus loading to the River Tywi SAC arising from a deterioration in air quality following an increase in traffic generated by new development, where main roads pass within 200m of the SAC (A40 and A4242).
- 4.9 Whilst the Carmarthen Bay and Estuaries SAC is hydrologically connected to the River Tywi, the Site is considered to be sufficiently distant that those impacts associated with a deterioration in water quality are not likely to arise upon this designation with guidance from CCC indicating

the Carmarthen Bay and Estuaries SAC is located outside the area within which developments must demonstrate nutrient neutrality²⁰.

National Designations

- 4.10 River Tywi/Afon Tywi SSSI overlap with the boundaries of the River Tywi SAC. As such, an assessment of effects previously discussed above in relation to these international designated sites remain valid and will not be repeated here.
- 4.11 With respect to other national designations identified within the Zol these are sufficiently distant from the Site such that no direct effects associated with habitat loss/damage will arise whilst there are no pathways for indirect effects to arise. This is with the exception of potential effects associated with an increase in recreational pressure, following occupation of the Site although this is likely to be localised to Public Right of Way (PRoW). Embedded within the Landscape Strategy Plan is inclusion of open space, Local Area for Play (LAP) and footpaths across the Site provide alternative opportunities for recreation and minimising such effects on statutory designated sites.

Non-statutory Designations

- 4.12 As described in **Section 3**, there are no non-statutory designations within the potential zone of influence of the Site, although several areas of ancient woodland were identified within the 2km of the Site. There is potential for the development to give rise to increased recreational pressure, specifically those with PRoW, resulting in increased trampling/damage of sensitive ancient woodland habitats. Embedded within the Landscape Strategy Plan is inclusion of open space, LAP and footpaths across the Site provide alternative opportunities for recreation and minimising such effects on areas of ancient woodland.

IMPACTS ON HABITATS

- 4.13 As described above with respect to embedded mitigation, the development design has sought to retain important habitats within the layout as far as possible. However, some habitat loss is unavoidable to make way for the proposed development.
- 4.14 The Site is dominated by species poor improved grassland, whilst species-poor scrub is present along the boundaries within the corners of the Site. Such habitats are considered to have negligible or site-level ecological importance. Proposed habitat loss is largely confined to these features, the loss of which is not considered significant on ecological grounds.
- 4.15 The western and southern boundary hedgerows (**H2 – H3**) and hedgerow **H1** in the far eastern corner of the Site are considered to be of greater ecological importance and comprise priority habitats for Wales, whilst hedgerow **H3** also qualifies as 'important' under the *Hedgerows Regulations* (1997) criteria. Inherent within the Landscape Strategy Plan is the proposed retention of hedgerows **H1 – H3**, albeit with the exception of removal of a 3m length of **H3** for the creation of pedestrian footway.

²⁰ Carmarthen County Council. Indicative DIN Neutrality Catchment Areas. Available at: Layout_1 [Accessed November 2025].

- 4.16 Impacts on existing habitats within the Site, namely loss, retention or enhancement are summarised in **Table EDP 4.1**.

Table EDP 4.1: Summary of On-site Habitat Impacts

Habitat Type	Ecological Importance	Existing Area/Length	Area/Length Lost	Area/Length Retained
Intact species-poor hedgerow (H1)	Less than Local (priority habitat)	18m	0m	18m
Intact species rich hedgerow with trees (H2)	Local (priority habitat)	300m	0m	300m
Defunct species rich hedgerow with trees (H3)	Local (priority habitat) and qualifies as 'important' under the <i>Hedgerows Regulations (1997)</i> criteria.	180m	3m	177m

- 4.17 There does, however, remain the potential for physical damage and/or indirect degradation of retained features to occur during construction, given the proximity of built development and/or proposed landscaping works. Retained trees/hedgerows may be further subject to indirect impacts, such as soil compaction, erosion and pollution (including air pollution). Indirect effects associated with increased levels of disturbance will likely occur during the construction phase, through the use of lighting and increased levels of vehicular traffic, machinery use and plant movement. In the absence of additional mitigation, impacts associated with disturbance and lighting may persist during the operational phase.
- 4.18 As discussed above in relation to statutory designations, there is also the potential for impacts upon water quality via the wet ditch network and watercourse located in the vicinity of the Site, associated with increased surface water runoff from the Site during the construction and operational phase of proposed development

IMPACTS ON PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

Breeding Birds

- 4.19 The loss of potential bird nesting habitat following development of the Site will primarily be limited to the removal of some dense scrub and c.3m of hedgerow **H3** to facilitate creation of a pedestrian footpath connecting to Clifford Byway. Such minimal loss of suitable habitat is considered negligible. Loss of improved grassland is also considered to be negligible given the small size of the field and the relative unsuitability of agricultural grassland for ground nesting birds.
- 4.20 There is the potential for clearance of vegetation to result in direct harm/injury to nesting birds, if present. However, the legal protection afforded to birds and their nests (their eggs and young) and the requirement to avoid commencement of works during the breeding bird season is considered inherent mitigation to ensure no effects relating to direct harm/injury arise in respect of the breeding bird assemblage. Therefore, negligible impacts are predicted.

- 4.21 The majority of hedgerows will be retained, although disturbance of nesting and foraging habitat through light spill, noise, visual and human disturbance during construction and operation could occur. There also remains the potential for impacts associated with increased predation to arise following occupation as a result of cat ownership across the proposed development.

Bats

Impacts on Roosting Bats

- 4.22 Tree **T1**, with a potential roost feature, located within hedgerow **H3** will be retained and further offset from the main development footprint through inclusion of open green space along this boundary. As such, no direct impacts to roosting bats associated with direct loss is anticipated. As previously discussed above in relation to habitats, there is the potential for further physical damage and/or indirect degradation of retained features to occur during construction, combined with indirect impacts upon roosting bats (if present) associated with increased noise/lighting during both the construction and operational phases of development. Such effects are, however, likely to be minimal given the offset of the southern hedgerow boundary from the main construction footprint.

Impacts on Foraging/Commuting Bats

- 4.23 Overall, species-poor improved grassland which dominates the Site is considered to be of limited importance to a foraging bat assemblage given its small extent and poor botanical diversity. Boundary features including hedgerows, dense scrub and mature trees are, however, of value for dispersal of a bat assemblage across the wider landscape. The southern and western boundaries of the Site in particular are considered of most value for dispersal of a bat assemblage whilst the more fragmented nature of the northern and eastern boundaries are of less importance.
- 4.24 Degradation and erosion of linear features (southern and western boundary hedgerow) and foraging habitat (hedgerows and dense scrub), coupled with potential disturbance impacts arising from development, could impact the local bat assemblage.
- 4.25 In addition, increased amounts of traffic movements by vehicles, machinery and plant throughout the construction phase could increase the potential risk of road casualties upon the local bat assemblage. However, given that such impacts will most likely be confined to daylight hours, combined with retention of the majority of hedgerows, no significant negative effects are considered likely to arise.

Badger

- 4.26 With respect to badger, dense scrub, grassland and hedgerows across the Site provides some foraging habitat with evidence of badger (latrines) in the northeast corner, which was identified during ecological surveys in 2025. Given the common and widespread status of this species, combined with the limited extent of habitat loss (largely dense scrub and small section of hedgerow), such losses are not considered significant.
- 4.27 No active setts were identified on-site, and the monitoring survey confirmed the mammal hole located along the southern hedgerow is not in current use by badger, such that no impacts to badger associated with loss of/damage to a place of rest are likely. However, given the potential

for badger to excavate setts in a short space of time, there is potential for this species to occupy suitable habitat in future. Future development may therefore result in loss/damage to an active sett if located within 30m, in addition to the potential for harm/injury to this species resulting from an increase in the movement of construction traffic and entrapment within open excavations.

Reptiles, Amphibians and Other Mammals

- 4.28 Development will require the loss of dense scrub and 3m of hedgerow, which provides some suitable foraging habitat for these species, combined with opportunities for refuge and hibernation. The species-poor grassland is of limited value for these species. Overall, however, the reduction of predominantly low-quality habitat available to populations of common reptiles, amphibians and notable mammals, particularly given the extent of proposed habitat retention, is not considered significant.
- 4.29 In the absence of additional mitigation, there is the potential for damage/degradation of retained habitats of limited value to reptiles, amphibians and European hedgehog, combined with the killing and injury of such species from construction trenches and during vegetation clearance; and following increased levels of traffic movements by vehicles, machinery and plant throughout the construction and operational phases of development.

Invasive Species

- 4.30 Himalayan balsam, located in the north-west corner of the Site (**TN1**), is an invasive species listed on Schedule 9 of the *Wildlife and Countryside Act (1981)*. It is an offence for any person to plant or otherwise cause to grow a plant listed on Part II of Schedule 9 of the Act. This could include cutting the plant or transporting seeds via human and vehicular movements across and off-site. In the absence of mitigation, there is the potential to further spread Himalayan balsam.

Section 5 Mitigation and Enhancement Strategy

- 5.1 This section of the Ecological Appraisal considers the impacts set out in **Section 4** and puts forward additional measures to firstly avoid or minimise any ecological impact, or else to mitigate unavoidable impacts arising from proposed development necessary to comply with relevant planning policy and avoid any infringement of relevant legislation.
- 5.2 This section also sets out proposed ecological enhancements for the Site, in line with the wording within PPW and local planning policy, specifically the requirement to deliver net benefits for biodiversity and ecosystem resilience of ecosystems by maximising those attributes of the DECCA²¹ framework. Enhancements must be secured primarily on-site or immediately adjacent to the Site, over and above that required to mitigate or compensate for any negative impact.

DESIGNATED SITES

- 5.3 To protect the existing water quality of the River Twyi SAC and SSSI, appropriate pollution control measures will be employed in accordance with the relevant Pollution Prevention Guidelines (PPGs) published by the Environment Agency, namely PPG1 'General Guide to the Prevention of Pollution', PPG5 'Works and Maintenance in or Near Water', PPG6 'Pollution Prevention Guidance for Working at Construction and Demolition Sites', and PPG21 'Pollution Incident Response Planning', to ensure that detrimental effects on any nearby watercourses as a result of surface run-off, spillage and pollution arising throughout the construction phases are avoided. Such measures can be secured through the provision and implementation of a Construction Environmental Management Plan (CEMP) and Ecological Construction Method Statement (ECMS) to be secured as a condition of planning.
- 5.4 As discussed in **Section 4**, embedded mitigation measures include proposals for SuDS to manage surface water and run-off, which will maintain or improve the quality of discharging into the southern ditch during the operational phase.
- 5.5 With respect to the potential for operational effects associated with increased phosphorus loading into the River Tywi SAC from the receiving via Parc y Splott Wastewater Treatment Works (WwTW), impacts and any mitigation required, will be further discussed in a Shadow Habitats Regulations Assessment (sHRA) and will require further consultation with the CCC.
- 5.6 With respect to potential effects arising upon ancient woodland, specifically Scott's Wood, Ystrad Wood and Trevaughan Wood, associated with an increase in recreational pressures following occupation of the Site, inherent within the Landscape Strategy Plan is the inclusion of areas of informal and formal greenspace across the Site to provide benefits to recreation and visual amenity. This includes the provision of new footpath connections between the Site and Clifford Byway, allowing new residents to directly access the existing PRoW network off-site.

²¹ The DECCA framework comprises five key attributes which must be taken into account when demonstrating steps taken towards securing a net benefit for biodiversity, including the Diversity, Extent, Condition, Connectivity and Adaptability to change of habitats, species and ecosystems.

HABITATS

- 5.7 To protect retained habitats during construction, protective fencing will be erected as recommended within BS 5837: 2012 *Trees in Relation to Design, Demolition and Construction* to physically protect retained trees and hedgerow habitats on-site, together with the with establishment of Ecological Protection Zones (EPZ). Protective fencing will incorporate the full root protection area of the feature to be retained and will be protected and maintained throughout the duration of all site-enabling and pre-construction activities.
- 5.8 No works (other than planting), including the storage of materials, plant and machinery, will be carried out within or immediately adjacent to all areas of protective fencing/areas marked for protection as described above, so as to ensure no detrimental impacts to sensitive features arising from physical damage and/or pollution. The digging of trenches and pits for new tree and scrub planting adjacent to areas of protective fencing, where this lies inside root protection areas, will be carried out by hand only, in accordance with best practice guidance as stipulated within BS 5837:2012.
- 5.9 Such measures, alongside those previously discussed in relation to pollution control, are further detailed within the Construction Management Plan (CMP)²² comprising standard documents which are capable of being secured by condition to any forthcoming planning consent.
- 5.10 As discussed within **Section 4**, the development has been designed to retain those habitat features of greatest ecological importance as far as possible. This includes:
- The retention of the majority of the hedgerow network on-site, with impacts limited to the creation of a 3m break, for a pedestrian footpath, in the Site's southern boundary (impacting hedgerow **H3**);
 - The retention of **T1** considered to support potential roosting features for bats; and
 - The offsetting of development away from the southern and western boundaries of the Site through the provision of habitat buffers measuring and green open space.
- 5.11 This will be combined with the creation of new habitats to compensate for the minimal loss of hedgerow sections, but also to deliver net benefits to biodiversity through the provision of structurally and botanically diverse habitat features. The following habitat creation measures are proposed:
- The provision of sustainable drainage features necessary to maintain run-off rates and improve the quality of surface water prior to discharge. Such areas can be seeded with a native grassland mix to further maximise the biodiversity of the Site, increasing habitat opportunities for protected/notable species;
 - The provision of biodiverse, ecotone planting within habitat buffers proposed, particularly along the southern and western boundary to further protect the existing, mature hedgerow

²² Lovells, November 2025. Construction Management Plan (CMP). Carmarthen West. Project number 461187.

network here and enable its continued function as a key wildlife corridor for bats and other wildlife; and

- The inclusion of other areas of informal and formal greenspace to ensure sufficient provision of Green Infrastructure throughout the Site necessary to maximise biodiversity whilst providing suitably accessible areas for recreational use with such areas to accommodate new tree, shrub and grassland planting;
- The inclusion of new native species-rich hedgerows along the north and east boundaries, linking existing habitats and enhancing connectivity across the Site; and
- The inclusion of street tree planting within the main development footprint.

5.12 Such habitat creation measures are considered sufficient to compensate for the small scale of habitat losses anticipated, whilst ensuring the protection and further enhancement of retained habitats to maximise habitat function and connectivity across the Site for protected and priority species. It is further recommended for such habitats and features to be subject to sensitive management and monitoring over the long-term to improve their condition, increase their resilience and mitigate long term disturbance effects. Detailed specifications for new planting and other habitat creation should be provided with a detailed Soft Landscaping Scheme secured by planning condition. In addition, measures to restore and enhance existing habitats, to ensure successful establishment of new habitats, and to maintain the value of all ecological features in the long term will be delivered through a Landscape and Ecology Management Plan (LEMP).

5.13 Subject to the implementation of the measures summarised above, impacts on retained habitats will be avoided and net gains in biodiversity will be achieved in accordance with relevant planning policy.

PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

Breeding Birds

5.14 The habitat protection measures described above will avoid harm to breeding birds present with retained habitats. However, some removal of scrub and hedgerow, which are capable of supporting nesting birds, will be required to facilitate the development. Any removal of these habitats should be undertaken between September and February inclusive to avoid the bird breeding season. Any habitat removed outside of this period should be inspected by a suitably experienced ecologist prior to removal. These measures can be delivered through the ECMS.

5.15 The proposed enhancement of the existing hedgerows; planting of new trees and native species hedgerows; the development of more species-rich and structurally diverse grassland, and creation of new wetlands in the SuDS basins, will together significantly enhance opportunities for foraging and nesting birds post-development.

5.16 To further enhance bird nesting opportunities across the Site, it is recommended that nest boxes are installed on retained mature trees and/or buildings as appropriate, specific details for which in terms of location, number, management and monitoring are detailed within the

LEMP. Recommendations include variety of new nest boxes to accommodate different bird species, including:

- Swift nest boxes;
- House sparrow nest boxes; and
- General purpose nest boxes.

Bats

Roosting Bats

- 5.17 Tree **T1** supporting a potential roost feature is to be retained and protected, with such measures are detailed within the CMP. The CMP will define Ecological Protection Zones (EPZs), in which construction activities will be excluded or carefully controlled in order to avoid impacts to **T1** and the habitats immediately adjacent.
- 5.18 Enhancement of bat roosting opportunities can be achieved through installation of durable (e.g. woodcrete material) bat boxes on retained trees and/or on new buildings. The number/specifications and management of boxes is detailed within the LEMP.

Foraging/Commuting Bats

- 5.19 With respect to a foraging/commuting bat assemblage, those habitat creation measures detailed above in relation to designated sites, habitats and breeding birds will provide adequate compensation for minor losses arising across the Site
- 5.20 To avoid disturbance of a foraging/commuting bat assemblage during construction, however, working at night and the use of night lighting should be avoided. Where this is not possible (i.e. for security reasons), lighting should be kept to the lowest permissible level through the use of sensitive lighting design as detailed above in respect to habitats and directed away from retained trees lines. This should be combined with implementation of a sensitive lighting strategy during the operational phase of development to ensure that retained habitats (namely the southern and western hedgerows) used by light-sensitive species such as bats will not be adversely lit. Such measures are detailed within the CMP and Lighting Design Plan²³.
- 5.21 Subject to the implementation of those key mitigation measures detailed above with respect to bats and previously with respect to habitats, no significant detrimental impacts upon the roosting and foraging/commuting bat assemblage utilising the Site are considered likely to arise.

Badger

- 5.22 Due to the mobility and widespread nature of badger, in addition to the presence of foraging habitat, an update walkover of the Site by a suitably qualified ecologist is recommended prior

²³ DW Windsor, 03.12.25. Lighting Design. Project ref: 25-458-1B. Filename 25-458-1B - 1.1 Carmarthen West, Carmarthen [Layout].AGI [version 22.2.78].

to the commencement of construction or site clearance works to determine whether any badger setts have been established during the interim period.

5.23 In the event an active sett is identified, and is to be affected by development works, and owing to the strict legislation protecting active setts, a licence from NRW will be required to exclude badger from the sett (restricted to the period between July and November inclusive), with a mitigation strategy based on the following principles:

- Exclusion of badgers from setts using one-way gates where confirmed active at the time;
- Sett monitoring of closed setts, to ensure badgers have not regained access to any setts; and
- Excavation of the badger sett with all tunnels dug back to end.

5.24 In addition to the above and in respect of the presence of badgers more generally, the following measures will apply throughout the construction phase of the development:

- There will be no working at night as far as possible; and
- All trenches/excavations will be covered up overnight and a means of escape provided to avoid wildlife becoming trapped.

5.25 In addition, a sensitive lighting scheme will be adopted throughout the construction and operational phase of development in accordance with those recommendations detailed above.

5.26 Those habitat creation measures discussed above, including the proposed enhancement of retained habitats combined with creation of new native species-rich hedgerows and grassland planting, will continue to provide suitable foraging habitat for this species as well as maintain a corridor for continued dispersal of badger and other wildlife across the Site.

5.27 It is therefore considered that no detrimental impacts upon badger will arise as a result of any future development of the Site should appropriate habitat retention and enhancement measures be implemented.

Reptiles, Amphibians and Other Mammals

5.28 Given the limited potential of the Site to support low numbers of common reptiles, common amphibians and other mammals, a precautionary approach to habitat clearance is recommended to ensure no harm to these species. Clearance of any suitable vegetation should be undertaken in accordance with the following precautionary methods of working:

- Vegetation clearance should be undertaken between the late spring and early autumn months so as to avoid the main hibernation period of hedgehog and common reptiles/amphibians (typically considered to be between October and March);
- Should the above seasonal constraint be considered impracticable, then clearance works between late October and March inclusive may require pre-commencement checks and/or supervision by a suitably qualified ecologist to ensure no disruption to potential hibernacula, with the adoption of additional precautionary measures as appropriate;

- A first cut should aim to reduce vegetation height to no less than 150mm and should be undertaken through the use of a hand-held strimmer or brush cutter. The second cut should be undertaken thereafter and within 24 hours of the initial cut, during which, the vegetation should be reduced to ground level;
- Both cuts should be undertaken in a direction towards retained habitats, i.e. towards the coniferous tree line or adjacent semi-natural habitat off-site, so as to allow for any wildlife present to disperse safely towards this resource;
- Any suitable refugia identified during clearance works will be subject to a finger-tip search by a suitably experienced ecologist with any species identified re-located to areas of retained vegetation. Thereafter, refugia will be dismantled by hand and relocated to areas of retained vegetation to ensure suitable refuge/hibernation opportunities are retained; and
- In the event any reptiles, amphibians or European hedgehog are identified during site clearance, these will be captured by hand and immediately released into retained habitat located immediately adjacent to the construction footprint.

5.29 More generally, however, and particularly in respect of hedgehog, the following precautionary measures will be adhered to during the construction phase:

- There will be no working at night;
- All trenches/excavations will be covered up overnight and/or a means of escape provided (such as mammal ramps) to avoid wildlife becoming trapped; and
- Any open pipework with an outside diameter of greater 120mm must be covered at the end of each working day to prevent animals entering/becoming trapped.

5.30 To facilitate the dispersal of European hedgehog across the Site during operational phases of development, any proposed close board fencing marking the boundaries between development, formal/informal landscaping features, should have a 13cm x 13cm gap in the bottom to allow hedgehogs to pass through.

5.31 Further enhancements at the Site can be achieved through creation of hibernacula and deadwood log piles within south-facing habitat and/or within the natural/informal greenspace areas. Details on the specifics of hibernacula is provided within the LEMP.

5.32 The mitigation and enhancement measures outlined above will ensure that effects upon reptiles, common amphibians and other notable mammals, if present in the locality, are avoided/minimised.

Invasive Species

5.33 Himalayan balsam was recorded in the north-west corner of the Site. It is recommended that the eradication of Himalayan balsam from the Site is undertaken prior to the commencement of construction to prevent spread and in accordance with the advice of a suitably qualified weeds specialist.

Section 6 Summary and Conclusions

6.1 **Table EDP 6.1** provides an overview of Mitigation and Enhancement Strategy described in **Section 5**.

Table EDP 6.1: Summary of Proposed Mitigation and Enhancement

Mitigation Type	Key Principles	Mechanism(s) to Secure Delivery
Avoid by design	Retention of habitats with appropriate development buffers: <ul style="list-style-type: none"> • 482m native hedgerows; • 70m recently planted hedgerows; 	Habitat retention embedded in Landscape Strategy Plan, which will be an 'approved plan' to which future detailed designs must align.
Avoid or minimise construction impacts	Sensitive methods of operation during enabling and construction works: <ul style="list-style-type: none"> • Control of working hours; • Minimise noise and vibration; • Air quality measures/ dust suppression; • Control/eradication of invasive species; • Storage of fuels/chemicals; and • Sensitive lighting. 	Detailed within the CMP and Lighting Design Plan.
	Protection of retained habitats <ul style="list-style-type: none"> • Fencing and signage to create development exclusion zones. 	Detailed within the CMP.
	Methods to avoid harming individuals or interfering with breeding of protected species prior to/during habitat destruction: <ul style="list-style-type: none"> • Pre-commencement checks/surveys; • Avoidance of trapping animals in excavations; • Timings to avoid sensitive periods/breeding seasons; • Capture and translocation of animals from construction footprint; • Phased vegetation clearance; • Maintaining dispersal routes; • Destructive searches; and • Supervision by Ecological Clerk of Works (ECoW). 	Detailed within the CMP

Mitigation Type	Key Principles	Mechanism(s) to Secure Delivery
Mitigate or compensate for habitat loss and deliver net gains	<p>Habitat enhancement:</p> <ul style="list-style-type: none"> • Enhancement of areas of open space to deliver species-rich amenity and wildflower grassland of value for recreation and wildlife respectively. <p>Habitat creation:</p> <ul style="list-style-type: none"> • New species rich hedgerows along the eastern and northern boundaries enhancing connectivity; • SUDS seeded with species-rich marshy grassland mix; • Native tree planting along the boundaries of the Site and open green space; • Street tree planting; and • Areas of open space incorporating species-rich amenity and wildflower grassland. 	<p>New habitats embedded in Landscape Strategy Plan, which will be an 'approved plan' to which detailed designs must align. Detailed within the LEMP.</p>
	<p>Habitat features to be provided in suitable locations:</p> <ul style="list-style-type: none"> • Bat boxes and/or bat bricks; • Bird boxes; • Reptile and amphibian hibernacula; and • Invertebrate refuge. 	<p>Detailed within the LEMP.</p>
	<p>Lighting strategy to avoiding disturbance of nocturnal species, in particular foraging/commuting bats</p>	<p>Detailed within the Lighting Design Plan.</p>
Maintenance, Monitoring and Management post-construction	<p>Habitat-specific, namely measures to:</p> <ul style="list-style-type: none"> • Maintain and enhance retained habitats; • Ensure new habitat becomes established, to achieve target condition; and • Monitor and maintain habitats in good ecological condition once enhanced/established. 	<p>Detailed within the LEMP.</p>
	<p>Species-specific, namely measures to:</p> <ul style="list-style-type: none"> • Maintain habitat features (boxes etc.) in good condition or replace as necessary. 	<p>Detailed within the LEMP.</p>

- 6.2 EDP concludes that, in light of the embedded mitigation and subject to the full implementation of the additional measures summarised above, the proposed development is capable of compliance with relevant planning policy and legislation and can deliver net benefits for wildlife and biodiversity, albeit further input and agreement of mitigation through the Habitat Regulations Assessment process is required in relation to the Afon Twyi SAC.

Appendix EDP 1
Landscape Strategy Plan
(The Urbanists, Darwing Number: P03)

Proposed Accomodation Schedule				
Housestyle	GIA	Beds	Total No.	Percentage
Open Market				
Fairhaven	665	2	11	26
Newbury	1013	3	8	19
Lansdown	896	3	4	10
Milford	981	3	3	7
Ramsey	1124	4	3	7
Redbourne	1266	4	7	17
Rochester	1198	4	6	14
	Sub Total		42	100
Affordable				
Social Rent				
1B2P	549/638	1	4	16
2B4P	880	2	10	40
3B5P	966	3	8	32
4B7P	1236	4	3	12
	Sub Total		25	100
LCHO				
Fairhaven	665	2	7	41
Lansdown	896	3	7	41
Newbury	1013	3	3	18
	Sub Total		17	100



Legend

- Red line boundary
- Existing PROW bridleway (indicative)
- Proposed building
- Proposed trees
- Existing trees to be retained
- Root protection area (RPA)
- Proposed Hoggin Footpath
- Existing vegetation retained
- Proposed hedgerow
- Proposed SuDS - attenuation
- Proposed Rain Garden
- Private Drive/Parking
- Private Footpath
- Tarmac Footway/Shared Path
- Tarmac Carriageway
- Block Paving (On plot)
- Bin Collection Point
- Affordable Rent Properties
- Open Market Properties
- Low Cost Home Ownership Homes
- Show Home-Site Office
- Show Home

For specific landscape proposals and detailed key please see drawing 2513-URB-XX-DR-LA-001-Landscape General Arrangement Plan

NOTES:

SCALE: Do not scale from this drawing.

SETTING OUT: All setting out, levels, dimensions to be agreed on site. Do not use the information on this drawing without checking all dimensions on site. Any discrepancies between drawings, specifications and site works are to be reported to The Urbanists. Order of construction and setting out is to be agreed on site.

CHECK: This drawing must be the latest revision, read in conjunction with all other drawings, details, specifications and schedules. All dimensions are in millimetres unless otherwise stated. Where any contradiction or uncertainty arises between the drawings and/or the schedule of works / specification, it is the Contractor's responsibility to seek verification from The Urbanists before proceeding. No claims will be met by The Urbanists, where the Contractor continues work in absence of such confirmation.

No.	Date	By	Revision Notes
P01	14/11/2025		Initial review
P02	06/01/2026	LP	Highways amendments
P03	19/01/2026	LP	Attenuation amendment

PROJECT STATUS:

S4 (SUITABLE FOR APPROVAL)

theurbanists

Client Lovell Homes

Project Carmarthen West

Title Planning Layout

Project ID: 2511 URB 00 XX DR UD 001 S4 P03

Drawn TS Date 14/11/2025 Checked LP Scale 1:500

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Appendix EDP 2 Extended Phase 1 Habitat Survey

METHODOLOGY

- A2.1 The survey technique adopted for the Extended Phase 1 Habitat survey was at a level intermediate between a standard Phase 1 survey technique, involving habitat mapping and description, and a Phase 2 survey, based on detailed habitat and species surveys. The survey involved identifying and mapping the main habitat types (including priority habitats) and scoping any potential protected or priority species populations. This level of survey is not intended to compile a complete floral and faunal inventory for the Site.
- A2.2 The Extended Phase 1 Habitat survey was undertaken by a suitably experienced surveyor on 10 March 2025, during which the weather was mild and overcast.

Limitations

- A2.3 March is considered to be within a sub-optimal period for undertaking an Extended Phase 1 Survey. Surveys were thus limited to recording plant species present in both vegetative and floristic forms at the time of survey. The lack of any species record from this report cannot be taken to automatically infer species' absence from the Site.
- A2.4 However, owing to the ecological context and type of habitats present within the Site (i.e. predominance of managed agricultural land) such limitations are not considered to have affected an assessment of the Site.

RESULTS

- A2.5 The principal habitats within the Site together with their dominant/characteristic plant species identified during the survey are discussed in turn below. The type, distribution and species composition of the habitats present is discussed below.
- A2.6 The following should be read in conjunction with **Plan EDP 1** and illustrative photographs provided.

Native Hedgerows

- A2.7 The western and southern boundaries of the Site are defined by species-rich native hedgerows with trees. Hedgerow **H2** forms the western boundary of the Site and comprises an intact and well-managed hedgerow with a small section of wet ditch. Hedgerow **H3** aligning the southern boundary is defunct and outgrown, located adjacent to a bridleway and wet ditch. The far north-eastern corner of the Site is defined by a short length of native, species-poor hedgerow (**H1**), similarly subject to management, whilst the eastern boundary is defined by two separate sections of new, species-poor hedgerow planting (**H4** and **H5**), comprising recently planted hedgerows.

- A2.8 Hedgerows are typically dominated by hawthorn (*Crataegus monogynea*) and blackthorn (*Prunus spinosa*), although pedunculate oak (*Quercus robur*), elder (*Sambucus nigra*), hazel (*Corylus avellana*), willow (*Salix sp.*) and sycamore (*Acer pseudoplatanus*) are also present. Mature trees associated with the hedgerows include sycamore, ash (*Fraxinus excelsior*) and pedunculate oak. Bluebells, dog's mercury (*Mercurialis perennis*), hart's tongue (*Asplenium scolopendrium*), soft shield fern (*Polystichum setiferum*), scaly male-fern (*Dryopteris affinis*), and herb Robert (*Geranium robertianum*), are associated with the ground flora community present at the base of hedgerows **H2** and **H3**.
- A2.9 Himalayan balsam, a non-native invasive species listed on Schedule 9 of the WCA (1981, as amended), was identified adjacent to the northern section of hedgerow **H2**.
- A2.10 A habitat of principal importance for Wales, hedgerows are considered to be of **Local** ecological importance.



Image EDP A2.1: Hedgerow **H2** located along the western boundary of the Site.

Dense and Scattered Scrub

- A2.11 There are several areas of dense scrub associated with the boundaries of the Site, primarily in the south-east corner covering an earth mound, which are dominated by bramble (*Rubus fruticosus agg.*) and young willow species with occurrences of willowherb (*Epilobium sp.*), common hogweed (*Heracleum sphondylium*) and common nettle (*Urtica dioica*). Such habitat is considered to be of **Negligible** importance given its limited botanical and structural diversity and localised nature onsite, albeit providing shelter and foraging opportunities for birds, bats, badger, reptiles and amphibians.



Image EDP A2.2: Dense scrub located in the south-east corner of the Site. Part of this habitat is on a mound.

Improved Grassland

- A2.12 The majority of the Site comprises agricultural land dominated by improved grassland subject to regular management. Improved grassland is dominated by perennial rye-grass (*Lolium perenne*) with occasional broadleaved dock (*Rumex obtusifolius*) and creeping thistle (*Cirsium arvense*); the latter two species indicative of nutrient enrichment. Common nettle, dandelion (*Taraxacum sp.*), creeping buttercup (*Ranunculus repens*) and ribwort plantain (*Plantago lanceolata*) were also recorded.
- A2.13 Improved grassland habitat is considered to be of limited ecological value given its poor floristic diversity and regular management. Such habitat is therefore considered to be of **Negligible** ecological importance.



Image EDP A2.3: Improved grassland dominates the majority of the Site.

Wet and Dry Ditches

- A2.14 There are ditches along the western, eastern and southern boundaries. The western ditch is a short section of wet ditch and is associated with hedgerow **H2**. The southern ditch is a wet ditch associated with hedgerow **H3** and flows in an eastly direction along Clifford Byway. The eastern ditch is a newly created ditch in association with the newly planted hedgerows **H4** and **H5**. At the time of survey this ditch was dry.
- A2.15 Wet and dry ditches present within the Site are inherently of limited ecological importance given their limited water depth and absence of a macrophyte community and considered to be of no more than **Site** level importance.



Image EDP A2.4: Wet ditch located immediately south of hedgerow H3.

Appendix EDP 3 Hedgerow Survey

METHODOLOGY

- A3.1 An assessment of the entire hedgerow network on-site was undertaken on 10 March 2025, to determine their importance with reference to the Wildlife and Landscape criteria provided in Part II of Schedule 1 of the *Hedgerows Regulations 1997*. The *Hedgerows Regulations 1997* serve the purpose of ensuring the retention of important countryside hedgerows; their removal only being approved by the relevant local authority via a Hedgerow Removal Notice or as part of a planning permission.
- A3.2 The aims of the hedgerow assessment were to:
- Identify hedgerows that are classified as important under the ecological criteria of the *Hedgerows Regulations (1997)*; and
 - Identify hedgerows that, although not deemed important under the ecological criteria of the *Hedgerows Regulations (1997)*, have ecological value in terms of species diversity or as potential wildlife corridors.
- A3.3 A total of five hedgerow sections located within or adjacent to the Site were surveyed against the *Hedgerows Regulations 1997* criteria. Hedgerows qualify for assessment by exceeding 20m in length or by being connected at both ends to another hedgerow of any length. The middle 30m of all hedgerows up to 100m in length were surveyed, whilst the central 30m of each half of hedgerows up to 200m in length were surveyed. For hedgerows exceeding 200m in length, the central 30m section from each third of the hedgerow was surveyed. Hedgerows surveyed were assigned points dependent upon the number of qualifying 'features' as defined by the *Hedgerows Regulations*, with total scores per hedgerow determining their status.
- A3.4 Qualifying as important under the ecological criteria requires the hedgerow to be greater than 30 years of age.
- A3.5 Further to this, a hedgerow should be considered important should if it satisfies any of the following criteria:
- Must either contain (or have a record of having contained) species listed in Schedule 5 (animals) or 8 (plants) of the Wildlife and Countryside Act 1981 (as amended), birds categorised as declining breeders (Category 3) within the 'Red Data Birds in Britain' (Batten 1990), or any species categorised as 'endangered', 'extinct', 'rare' or 'vulnerable' by any of the British Red Data Books; or
 - Contains one of the following criteria per average 30m section surveyed:
 - Seven Schedule 3 (woody) species;
 - Six Schedule 3 species and three listed features (see below);

- Six Schedule 3 species, including one of the following – black poplar (*Populus nigra* subsp. *betulifolia*), large-leaved lime (*Tilia platyphyllos*), small-leaved lime (*Tilia cordata*) or wild service-tree (*Sorbus torminalis*);
- Five Schedule 3 species and four listed features; or
- Four Schedule 3 species, two listed features and lying adjacent to a bridleway or footpath; with
- Listed features are:
 - a. A bank or wall which supports the hedgerow along at least one half of its length;
 - b. Gaps which in aggregate do not exceed 10% of the length of the hedgerow;
 - c. Where the length of the hedgerow does not exceed 50 metres, at least one standard tree;
 - d. Where the length of the hedgerow exceeds 50 metres but does not exceed 100 metres, at least 2 standard trees;
 - e. Where the length of the hedgerow exceeds 100 metres, such number of standard trees (within any part of its length) as would when averaged over its total length amount to at least one for each 50 metres;
 - f. At least 3 woodland species within one metre, in any direction, of the outermost edges of the hedgerow;
 - g. A ditch along at least one half of the length of the hedgerow;
 - h. Connections scoring 4 points or more; or
 - i. A parallel hedge within 15 metres of the hedgerow.

A3.6 It is recognised that, with reference to the *Hedgerow Regulations (1997)*, certain animal species listed in the Wildlife and Countryside Act or by the Joint Nature Conservation Committee (JNCC) that could result in a hedgerow being recognised as important, may have gone unrecorded due to the timing and nature of the survey. Indeed, the use of the hedgerow by such species may be seasonal or at particular periods during the day. Whilst the full survey of such species falls outside the scope of the hedgerow survey, incidental sightings recorded during the hedgerow survey and records retrieved during the desk study were re-assessed for these species. In addition, data gained through relevant protected species surveys has also been considered.

Limitations

A3.7 March is considered to be within a sub-optimal period for undertaking a hedgerow assessment. This is, however, not considered a constraint to survey effort. Whilst the diversity of a ground flora community may have been underestimated at this time of year, it is considered this would not have influenced the outcome of an assessment under the *Hedgerow Regulations 1997*.

RESULTS

- A3.8 The detailed results of the hedgerow survey undertaken is provided in **Table EDP A3.1**. The location of hedgerows assessed within the Site is shown in **Plan EDP 1**.
- A3.9 Three hedgerows within the Site have existed for over 30 years, including **H1**, **H2** and **H3** and thus qualify for assessment. Hedgerows **H4** and **H5** have been recently planted and, in accordance with the criteria established within the *Hedgerow Regulations* 1997, do not qualify for assessment.
- A3.10 In summary, of the hedgerows surveyed, one hedgerow, **H3** qualifies as 'important' under the *Hedgerows Regulations* (1997) criteria.
- A3.11 The remaining four hedgerow sections did not qualify as 'important' under the *Hedgerows Regulations* 1997. Native hedgerows, in general, comprises priority habitats for Wales and are considered to be of Local level importance. Hedgerows **H4** and **H5** are, however, considered to be of no more than **Site** level importance given their defunct nature and immaturity with no direct connection to more mature hedgerows along the boundaries of the Site.

Table EDP A3.1: Hedgerow survey results

Hedgerow number	Schedule 3 Species Recorded	Mean Count of Schedule 3 Species	Number of Schedule 2 Woodland Plants	Bank/Wall Present	Any Gaps are less than 10%	Standard Trees (min. 1/50m)	Ditch	Connections (4 or >4)	Parallel Hedge	Adjacent Footpath, Bridleway, Road Used as Path, or BOAT	Contains Rare or Notable Species	Important Hedgerow
1	Blackthorn	1	0	N	Y	N	N	N	N	N	N	N
2	Hawthorn, blackthorn, pedunculate oak, hazel, elder and goat willow.	6	4 (bluebell, Hart's tongue, dog's mercury and soft shield fern).	N	Y	N	N	N	N	N	N	N
3	Hawthorn, blackthorn, ash, pedunculate oak, hazel and goat willow.	5	4 (bluebell, Hart's tongue, herb Robert and scaly male-fern).	Y	N	Y	Y	N	Y	Y	N	Y
4	Hawthorn, blackthorn, elder, holly, pedunculate oak and common lime.	4	0	N	N	N	Y	N	N	N	N	N
5	Holly, beech, willow and common lime.	3	0	N	N	N	Y	N	N	N	N	N

Appendix EDP 4 Bat Surveys

METHODOLOGY

A4.1 The scope of bat surveys undertaken at the Site was determined following completion of the Extended Phase 1 Habitat Survey and review of relevant desk study findings and with reference to best practice guidelines published by the Bat Conservation Trust²⁴.

Tree Roost Surveys

Ground Level Tree Assessment

A4.2 Owing to the presence of suitably mature trees within or adjacent to the Site, a Ground Level Tree Assessment (GLTA) of these trees was undertaken to record any external evidence of roosting bats or any features capable of supporting roosting bats that can be seen from the ground, as shown on **Plan EDP 4**.

A4.3 The survey was completed on 30 May 2025 by a bat licensed ecologist in accordance with the good practice guidelines referred to above. The trees were searched as thoroughly as possible from ground level with all elevations covered where these could be accessed.

A4.4 Suitable features for roosting bats (Potential Roost Features - PRFs) recorded (where present) include features formed by disease, decay, damage and association as listed within the guidelines published by the Bat Conservation Trust and detailed within the '*Bat Roosts in Trees*' book²⁵. In addition, bat, bird and dormouse boxes are also considered to provide potentially suitable roosting opportunities.

A4.5 Signs of roosting bat presence recorded (where present) include seeing a bat within a PRF, or finding bat droppings within, around or beneath a PRF. Other signs which could indicate a roost include smoothing of the entrance to a PRF, staining around or beneath a feature, audible squeaking from the roost at dusk or during warm weather, and large/regularly used roosts may produce a distinctive odour.

A4.6 The roost suitability of each tree was categorised as either:

- None – Either no PRFs in the tree or highly unlikely to be any;
- Further Assessment Required (FAR) – Tree is of a size, age or condition that is likely to have PRFs, further assessment is therefore required to establish if PRFs are present in the tree;
- PRF – Tree supports at least one PRF which is visible from the ground; and

²⁴ Collins, J. (ed.) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London

²⁵ Andrews, H (2018). *Bat Roosts in Trees. A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*. Pelagic Publishing, Exeter.

- Confirmed roost – Signs of roosting bat presence were found within or around a PRF.

A4.7 For those trees categorised as having a 'PRF', an estimate was made as to whether each PRF visible from the ground was likely to be suitable for individual bats (PRF-I) or multiple bats (PRF-M). It should be noted that this categorisation from ground level is an estimate only, as it is often not possible to establish the internal extent of a tree feature from ground level.

A4.8 For those trees categorised as having a 'PRF', an estimate was made as to whether each PRF visible from the ground was likely to be suitable for individual bats (PRF-I) or multiple bats (PRF-M). It should be noted that this categorisation from ground level is an estimate only, as it is often not possible to establish the internal extent of a tree feature from ground level.

Limitations

A4.9 As with any ground level assessments of trees, certain features may not be visible or fully visible from the ground. Trees along the western boundary were only assessed from within the Site. Additionally, assessment of trees can be undertaken at any time of year but is best undertaken in winter/early spring (December-March) when visibility into the crown of the tree is improved due to the absence of leaves).

A4.10 It should be noted that this type of assessment is based on features visible from ground level and is not considered to be a definitive bat roosting survey.

Bat Activity Surveys

A4.11 During the baseline habitat survey in March 2025, an initial assessment was undertaken of suitability of the habitats within and immediately adjacent to the Site for foraging and commuting bats. In accordance with the good practice guidelines referred to above, the Site was assigned to one of the following categories:

- High suitability – Continuous, high-quality habitat that is well-connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well-connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts;
- Moderate suitability – Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water;
- Low suitability – Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub;
- Negligible suitability – No obvious habitat features on-site likely to be used by commuting or foraging bats; and

- None – No habitat features on Site likely to be used by any commuting or foraging bats at any time of year.

A4.12 Having determined that the overall suitability of the Site is Moderate, a proportionate level of survey effort was expended in terms of the number and frequency of NBW surveys and automated detector surveys. These are described in further detail below.

Nighttime Bat Walkover Surveys

A4.13 Nighttime Bat Walkover surveys were undertaken across the Site with the objective of identifying important roosting and commuting behaviour as well as foraging areas used by bats. A total of three NBW surveys were undertaken over the course of the active bat season in 2025.

A4.14 Details of the date, timing, and weather conditions during each of the NBW surveys are given in **Table EDP A4.1**. All visits were completed in weather conditions that were suitable for such surveys.

Table EDP A4.1: Date, Timing and Weather Conditions during NBW Surveys

Survey Date	Sunset Time	Start - Finish Times	Weather Conditions at Sunset			
			Temp (°C)	Cloud Cover (%)	Wind (Beaufort Scale)	Precipitation
08.05.25	20:53	20:53 – 22:55	12°C	0%	0	0
19.06.25	21:40	21:30 – 23:40	24°C	0%	0	0
24.09.25	19:10	19:10 – 21:10	12°C	20%	1	0

A4.15 During the NBW surveys, a total of three stationary observation points were surveyed across all NBW surveys, with surveyors positioned along potential flight lines close to potential roost sources. Following the stationary part of the NBW survey, one transect route was walked within the Site but also off-site to include habitats immediately adjacent. The stationary observation points and transect routes are illustrated on **Plan EDP 6–8**. The NBW surveys were carried out by an experienced bat surveyor and assistant, with the stationary part of the NBW survey starting at sunset and continuing for a minimum of 30 minutes followed by a walked transect part of the survey, carried out until two hours after sunset. The walked part of the NBW survey was carried out at a slow and steady pace and where appropriate surveyors stopped temporarily or took detours from the route to observe bat behaviour.

A4.16 All bats calls were recorded, time-stamped and location tagged using Elekon Batlogger M bat detectors, and any observed behaviour described on survey forms, in order to characterise the value of the Site and its component habitats for foraging and commuting bats.

A4.17 Bats were identified on the basis of their characteristic echolocation calls, which analysed using computer sonogram analysis Kaleidoscope Pro to confirm species identification. Species of *Myotis* bat and long-eared bat are difficult to tell apart solely from their echolocation calls and were therefore grouped as such.

Limitations

- A4.18 The summer NBW data has likely been impacted by disturbance arising from a tractor collecting silage during the survey. There was an abundance of bats foraging over the centre of the Site and near the tractor, possibly due to an increased number of invertebrates cause by the movement of silage.
- 6.3 Whilst it was possible to complete one walked transect around the Site during the summer NBW, the remainder of the survey was limited to the length of Fford Pendre along the eastern boundary and the southern boundary, necessary for surveyors to safely avoid the tractor.

Automated Detector Surveys

- A4.19 Bat activity within the Site was also sampled using Song Meter Mini Bat 2 detectors (hereafter referred to as 'automated detectors'), which are deployed in fixed locations to automatically trigger and record bat echolocation calls over multiple nights at a time. In this case, automated detectors were deployed at two locations within the Site during each survey, as shown on **Plan EDP 8** covering different habitat types within the Site and concentrating on locations of known higher impacts. The automated detectors were fixed in secure locations, and the microphone directed away from the tree/branch to maximise detection sensitivity. In total, seven surveys were completed over the course of the active bat season in 2025, each comprising sampling by automated detectors for at least five consecutive nights. Details of dates, sampling locations and weather conditions during each of the surveys are given in **Table EDP A4.2**.

Table EDP A4.2: Automated Detector Survey Details

Sampling Period Dates	Location		Microphone	
	Reference Number	OS Grid Reference	Height	Direction
17 April 2025 – 21 April 2025	L1 (SW)	SN 38564 19569	1.25m	N
	L2 (NE)	SN 38627 19817	1.5m	W
23 May 2025 – 27 May 2025	L1 (SW)	SN 38564 19569	1.3m	N
	L2 (NE)	SN 38627 19817	1m	W
19 June 2025 – 23 June 2025	L1 (SW)	SN 38564 19569	1.3m	N
	L2 (NE)	SN 38627 19817	1m	W
24 July 2025 – 28 July 2025	L1 (SW)	SN 38564 19569	1.3m	N
	L2 (NE)	SN 38627 19817	1m	W
22 August 2025 – 26 August 2025	L1 (SW)	SN 38564 19569	2m	N
	L2 (NE)	SN 38627 19817	1m	SW
24 September 2025 – 28 September 2025	L1 (SW)	SN 38564 19569	1m	N
	L2 (NE)	SN 38631 19828	1.5m	W
16 October 2025 – 20 October 2025	L1 (SW)	SN38589 19562	1.75m	N
	L2 (NE)	SN 38632 19824	1.2m	SW

A4.20 The sound files recorded by the automated detectors were analysed using Kaleidoscope Pro's Auto ID for Bats software, which uses clustering technology and known bat species calls to classify each call to species level. Except for common and soprano pipistrelle, for which the classifiers are more accurate, all other species files, those classified as 'No ID', and 10% of the noise files were checked manually using sonogram analysis in accordance with published guides to confirm the species identification of each bat call.

Limitations

A4.21 The identification of calls and species using Kaleidoscope software is dependent upon the quality of the recording made which can be influenced by the following factors, which may limit levels of activity and species recorded:

- Weather conditions - rainfall and wind;
- Distance of bat from the detector's microphone;
- Presence of obstructions through which the noise must pass i.e., trees/leaves; and
- Proximity of other noise sources such as roads.

A4.22 Additionally, one automated detector at location **L2** was damaged in July 2025 following its deployment on site such, which resulted in data being collected for the first night only. In August 2025, the automated detector at location **L1** failed with no data recorded during this deployment. This is not considered to have overly affected the results with sufficient information collected to determine the value of a bat assemblage utilising the Site for foraging/commuting.

RESULTS

Tree Roost Surveys

Ground Level Tree Assessment

A4.23 The GLTA identified a single tree with a suitable feature for bat roosting (PRF). This tree is not to be affected by the development proposals. Further details are provided in **Table EDP A4.3** and its location is shown on **Plan EDP 4**

A4.24 All other trees were found to be of no suitability for roosting bats and have not been mapped/described.

Table EDP A4.3: Details of Trees with Bat Roost Suitability

Tree/Group Ref. No.	Photograph	Tree Species	Potential Roost Features and their Suitability	Roosting Suitability of Tree (where applicable)
T1		Ash	Tear out wound feature on south-west elevation. Although the heartwood was visible from the ground, the feature appears shallow and possible superficial. Feature is located 3-4m high. PRF-I.	PRF - I

Bat Activity Surveys

Nighttime Bat Walkover

- A4.25 As noted above in relation to the scope/design of the bat activity surveys, the initial habitat assessment of the Site found the Site to be of moderate suitability for foraging and commuting bats offering continuous habitat in the form of native hedgerows along the Site's peripheries with good connectivity to suitable habitat present across the wider landscape including wooded riparian corridors associated with the Tawelen Brook circa 115m north and 290m east of the Site. Whilst hedgerow boundaries are likely to be of value to a bat assemblage, facilitating their dispersal across the wider landscape, improved grassland which dominates the Site is likely to be of more limited suitability, particularly as a foraging resource given its poor botanical diversity and value to a diverse assemblage of prey invertebrates.
- A4.26 The stationary observation point for the spring NBW started in the south-west corner of the Site. Here multiple common and soprano pipistrelle bats were identified foraging along Cliffordd byway. Bats recorded during the walked part of the survey included common and soprano pipistrelle and noctule. Noctule bat was recorded once in the north-west corner of the Site. Common and soprano bats were recorded across the Site, with most of the activity recorded along the southern boundary and within the north-west corner of the Site near hedgerow **H2**.
- A4.27 The stationary observation point for the summer NBW started along Clifford byway at least five soprano pipistrelle bats identified foraging along this boundary at the start of the survey. It was noted that soprano pipistrelles were already foraging and commuting within the Site before sunset suggesting presence of a roost nearby. Bats recorded during the walked part of the survey included common and soprano pipistrelle, noctule, *Myotis* and long-eared bats with relatively higher levels of activity recorded on this occasion compared to the spring and autumn NBW surveys. It is possible that the movement of silage at the time of survey caused disturbance to invertebrates, attracting more foraging bats.
- A4.28 The stationary observation point for the autumn NBW started in the north-east corner of the Site, at which multiple soprano pipistrelle bats were identified foraging near an offsite roundabout and associated streetlights, Calls of common pipistrelle and noctule bats were also recorded but not observed. Bats recorded during the walked part of the survey included common and soprano pipistrelle, noctule and *Myotis* sp. bats. Soprano pipistrelle was observed foraging along the western hedgerow; the rest of the activity was all recorded along the southern boundary and adjacent byway.
- A4.29 The results of the NBW surveys are illustrated on **Plans EDP 5 -7**.

Automated Detector Surveys

Overall Diversity, Abundance and Distribution

- A4.30 A total of eight bat species/species groups (*Myotis* and long-eared bat species were not identified to species level), were confirmed to be present foraging and/or commuting within the Site during the automated detector surveys. The vast majority of recorded bat calls were of common pipistrelle with calls of soprano pipistrelle making up a small minority of the total. Individual registrations of Annex II species greater horseshoe were recorded on four nights at both locations and therefore not considered to be reliant on the habitats within the Site. Other

species recorded included Nathusius' pipistrelle, noctule, serotine, *Myotis* and long-eared bats. With reference to the automated detector data tables below (**Tables EDP A4.4 to A4.11**), the vast majority of recorded bat calls, between April and October inclusive, were of common and soprano pipistrelle, with common pipistrelle accounting for up to 80.08%, and soprano pipistrelle accounting for up to 49.31% of monthly registrations.

- A4.31 Noctule accounted for up to 5.64% of recorded bat calls, whilst *Myotis* sp. and long eared bats accounted for up to 3% of calls, apart from September, when *Myotis* sp. accounted for 15.59%.
- A4.32 Nathusius' pipistrelle, serotine and greater horseshoe bats each represent less than 1% of total calls recorded each month. Activity was largely comparable across automated detector locations in terms of total percentage of species passes, with **L2** showing an increase in the number of registrations recorded from rare or light-sensitive species.
- A4.33 One Annex II species, greater horseshoe bat, was recorded during the automated detector surveys. Greater horseshoe bat was recorded at both locations **L1** and **L2**, with a peak of six registrations at **L2** in June; otherwise only a single registration was recorded at **L1** in April and June, and **L2** in October.
- A4.34 Levels of bat activity recorded during the automated surveys were generally moderate, with relatively higher levels recorded in April, June and July and relatively lower levels recorded in September. Activity levels were higher in the north-east corner of the Site (**L1**). However, at location **L2** along the southern, a slightly higher diversity was recorded, with an average of 5.8 bat species, while location **L1** supported an average of 5.4 species.
- A4.35 The results of the automated detector surveys are provided, in detailed and summary form, within **Tables EDP A4.4 to A4.11**. These results are also described below for the assemblage as whole and on a species-by-species basis.

Species/Species Groups Recorded

Common and Soprano Pipistrelle

- A4.36 Common pipistrelle and soprano pipistrelle bats are common and widespread across the UK, representing the most, and second most, abundant bat species in the UK respectively. Whilst having suffered significant historic declines, national population monitoring indicates that common pipistrelle and soprano pipistrelle bats are increasing nationally. Common pipistrelle recordings were the most frequent across the Site during the automated detector surveys, with soprano pipistrelle being the second most recorded species. Greatest activity was associated with the southern boundary, with increased activity around the north-west boundary in spring and north-east boundary in autumn. Given their common and widespread distribution, common pipistrelle and soprano pipistrelle bats using the Site are considered to be of **Site** importance.

Nathusius' Pipistrelle

- A4.37 Nathusius' pipistrelle are widespread across the UK, but generally less common in Wales. An assessment of the population trends is not available for the species, although records are known to be increasing. Nathusius pipistrelle were not encountered during the manual transect survey and rarely recorded during automated bat detector surveys, accounting for less than 0.5% of all registrations. Given this species was rarely recorded during the surveys, albeit

accounting for its greater rarity, Nathusius' pipistrelle is considered to be of **Local** level importance.

Noctule

- A4.38 Uncommon, but considered to be widespread in the UK with population levels stable since 1999, noctule bats are listed as a species of principal importance for conservation in Wales. Only low levels of this species were recorded during the automated detector surveys (typically between 0% and 3% of the automated detector recordings, except during September at location **L1**, when noctule made up 5.64% of recordings). A low number of recordings for noctule were made during all three manual transect surveys, although not observed by the surveyors. Noctule using the Site is therefore considered to be of **Site** level.

Serotine

- A4.39 Serotine bats are rarely recorded in Wales, to the extent that there is insufficient data available to understand their current population trend (albeit with populations considered to remain stable in England). Serotine were not encountered during the manual transect survey and rarely recorded during automated bat detector surveys, accounting for less than 0.2% of all registrations. Given their rarity (in conservation status terms), serotine using the Site is considered to be of **Local** importance.

Myotid Bat Species

- A4.40 Myotid (*Myotis* sp.) bat species occur throughout most of the UK, their populations considered to be either stable or increasing, with the exception of Bechstein's (*Myotis bechsteinii*) bat, which is listed in Annex II of the European Commission Habitats Directive and is considerably rarer. However, Bechstein's is found almost exclusively in woodland habitat, therefore the habitat on-site is not considered suitable. *Myotis* sp. was recorded in summer and autumn during the manual transect surveys, mostly associated with the southern section of the Site. A low number of registrations for *Myotis* sp. were recorded during the automated detector surveys each month apart from April, with a peak of 76 records in September at location **L2**. *Myotis* sp. are considered to be of **Site** level importance in the context of the Site.

Long-eared

- A4.41 Brown long-eared bat (*Plecotus auritus*) is found throughout the UK, its population considered to remain stable nationally. In contrast, the grey long-eared bat (*Plecotus austriacus*) is considerably rarer, and its population appears to be declining. This species is primarily confined to the extreme south of the British Isles, from Sussex to Devon. A low number of registrations were recorded for long-eared bats every month, with a peak of 18 registrations in June at location **L2**. This species is considered to be of **Site** level importance.

Greater Horseshoe

- A4.42 Greater horseshoe is a rare and endangered species in the UK, being predominantly confined to the west/south-west of England and South Wales, though their population status is understood to have increased since 1999. However, usage of the Site was notably limited, being rarely recorded during automated detectors surveys, and typically accounting for less than 1% of all automated detector recordings during each month. This species was not recorded

during the manual transect surveys. Given their rarity, greater horseshoe is considered to be of **Local** level importance.

Automated Detector Data Tables

Table EDP A4.4: Automated Detector Survey Results April 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		17.04.25	18.04.25	19.04.25	20.04.25	21.04.25		
L1 (NE)	Common pipistrelle	1126	66	446	792	16	2446	73.12
	Soprano pipistrelle	201	11	76	579	21	888	26.55
	Noctule	1	0	6	1	1	9	0.27
	Plecotus spp.	0	0	1	0	0	1	0.03
	Greater horseshoe	0	1	0	0	0	1	0.03
	Total	1328	78	529	1372	38	3345	100
L2 (S)	Common pipistrelle	579	12	304	451	140	1486	74.23
	Soprano pipistrelle	195	0	82	160	28	465	23.23
	Noctule	3	0	3	2	1	9	0.45
	Serotine	1	0	0	0	0	1	0.05
	Total	785	12	408	628	169	2002	100

Table EDP A4.5: Automated Detector Survey Results May 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		23.05.25	24.05.25	25.05.25	26.05.25	27.05.25		
L1 (NE)	Common pipistrelle	582	70	566	367	222	1807	77.85
	Soprano pipistrelle	193	14	43	139	92	481	20.72
	Noctule	2	3	10	6	10	31	1.34
	Serotine	0	0	1	0	1	2	0.09
	Total	777	87	620	512	325	2321	100

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		23.05.25	24.05.25	25.05.25	26.05.25	27.05.25		
L2 (S)	Common pipistrelle	364	248	172	209	264	1257	83.3
	Soprano pipistrelle	52	40	21	31	70	214	14.2
	Nathusius' pipistrelle	1	0	1	2	1	5	0.3
	Noctule	2	5	5	0	2	14	0.9
	Serotine	1	1	0	0	1	3	0.2
	Myotis spp.	3	2	0	0	0	5	0.3
	Plecotus spp.	4	2	1	1	3	11	0.7
	Total	427	298	200	243	341	1509	100

Table EDP A4.6: Automated Detector Survey Results June 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		19.06.25	20.06.25	21.06.25	22.06.25	23.06.25		
L1 (NE)	Common pipistrelle	902	979	797	104	310	3092	72.86
	Soprano pipistrelle	326	374	338	20	63	1121	26.41
	Noctule	18	5	4	1	0	28	0.66
	Myotis spp.	1	0	0	0	0	1	0.02
	Plecotus spp.	0	0	1	0	0	1	0.02
	Greater horseshoe	0	0	0	1	0	1	0.02
	Total	1247	1358	1140	126	373	4244	100

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		19.06.25	20.06.25	21.06.25	22.06.25	23.06.25		
L2 (S)	Common pipistrelle	239	267	438	95	250	1289	82.63
	Soprano pipistrelle	46	59	64	27	29	225	14.42
	Noctule	11	6	1	1	0	19	1.22
	Serotine	0	0	0	0	1	1	0.06
	Myotis spp.	0	1	0	0	1	2	0.13
	Plecotus spp.	1	1	3	2	11	18	1.15
	Greater horseshoe	0	0	5	1	0	6	0.38
	Total	297	334	511	126	292	1560	100

Table EDP A4.7: Automated Detector Survey Results July 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		24.07.25	25.07.25	26.07.25	27.07.25	28.07.25		
L1 (NE)	Common pipistrelle	227	853	831	841	805	3557	63.952
	Soprano pipistrelle	87	701	359	503	326	1976	35.527
	Noctule	0	5	6	4	9	24	0.431
	Serotine	0	0	0	1	0	1	0.018
	Myotis spp.	0	0	1	0	0	1	0.018
	Plecotus spp.	0	0	1	2	0	3	0.054
	Total	314	1559	1198	1351	1140	5562	100
L2 (S)	Common pipistrelle	14	-	-	-	-	14	78%
	Soprano pipistrelle	4	-	-	-	-	4	22%
	Total	18	-	-	-	-	18	100%

Table EDP A4.8: Automated Detector Survey Results August 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		22.08.25	23.08.25	24.08.25	25.08.25	26.08.25		
L1 (NE)	-	-	-	-	-	-	-	-
	Total	-	-	-	-	-	-	-
L2 (S)	Common pipistrelle	120	142	189	322	231	1004	73.50
	Soprano pipistrelle	45	50	73	90	58	316	23.13
	Noctule	7	3	7	9	1	27	1.98
	Myotis spp.	3	3	1	2	2	11	0.81
	Plecotus spp.	2	2	1	1	2	8	0.59
	Total	177	200	271	424	294	1366	100

Table EDP A4.9: Automated Detector Survey Results September 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		24.09.25	25.09.25	26.09.25	27.09.25	28.09.25		
L1 (NE)	Common pipistrelle	27	24	49	2	0	102	52.31
	Soprano pipistrelle	15	11	47	1	0	74	37.95
	Nathusius' pipistrelle	0	0	1	0	0	1	0.51
	Noctule	8	2	1	0	0	11	5.64
	Myotis spp.	3	0	1	0	0	4	2.05
	Plecotus spp.	0	1	2	0	0	3	1.54
	Total	53	38	101	3	0	195	100

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		24.09.25	25.09.25	26.09.25	27.09.25	28.09.25		
L2 (S)	Common pipistrelle	23	27	57	2	24	133	41.82
	Soprano pipistrelle	18	16	45	2	12	93	29.25
	Noctule	3	1	1	1	2	8	2.52
	Myotis spp.	32	9	29	0	6	76	23.90
	Plecotus spp.	2	2	2	0	2	8	2.52
	Total	78	55	134	5	46	318	100

Table EDP A4.10: Automated Detector Survey Results October 2025

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		16.10.25	17.10.25	18.10.25	19.10.25	20.10.25		
L1 (NE)	Common pipistrelle	42	364	49	1023	162	1640	48.42
	Soprano pipistrelle	52	894	30	732	25	1733	51.17
	Nathusius' pipistrelle	0	4	0	0	0	4	0.12
	Noctule	2	2	0	1	0	5	0.15
	Myotis spp.	0	1	0	0	0	1	0.03
	Plecotus spp.	0	2	0	0	2	4	0.12
	Total	96	1267	79	1756	189	3387	100

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		16.10.25	17.10.25	18.10.25	19.10.25	20.10.25		
L2 (S)	Common pipistrelle	28	62	72	119	79	360	59.60
	Soprano pipistrelle	5	48	35	97	50	235	38.91
	Noctule	1	1	0	0	1	3	0.50
	Myotis spp.	1	1	0	0	0	2	0.33
	Plecotus spp.	1	1	0	0	1	3	0.50
	Greater horseshoe	0	0	0	0	1	1	0.17
	Total	36	113	107	216	132	604	100

Table EDP A4.11: Monthly Summary of Automated Detector Surveys

Survey Month	Species	Number of Passes	% of Month Total
April	Common pipistrelle	3932	74.10
	Soprano pipistrelle	1353	25.50
	Noctule	18	0.34
	Serotine	1	0.02
	Plecotus spp.	1	0.02
	Greater horseshoe	1	0.02
	Total		5306
May	Common pipistrelle	3064	80.08
	Soprano pipistrelle	695	18.17
	Nathusius' pipistrelle	5	0.13
	Noctule	41	1.07
	Serotine	5	0.13
	Myotis spp.	5	0.13
	Plecotus spp.	11	0.29
	Total		3826
June	Common pipistrelle	4381	75.48
	Soprano pipistrelle	1346	23.19
	Noctule	47	0.81
	Serotine	1	0.02
	Myotis spp.	3	0.05
	Plecotus spp.	19	0.33
	Greater horseshoe	7	0.12
	Total		5804
July	Common pipistrelle	3571	64.00
	Soprano pipistrelle	1980	35.48
	Noctule	24	0.43
	Serotine	1	0.02
	Myotis spp.	1	0.02
	Plecotus spp.	3	0.05
	Total		5580
August	Common pipistrelle	1004	73.50
	Soprano pipistrelle	316	23.13
	Noctule	27	1.98
	Myotis spp.	11	0.81
	Plecotus spp.	8	0.59
	Total		1366

Survey Month	Species	Number of Passes	% of Month Total
September	Common pipistrelle	235	45.81
	Soprano pipistrelle	167	32.55
	Nathusius' pipistrelle	1	0.19
	Noctule	19	3.70
	Myotis spp.	80	15.59
	Plecotus spp.	11	2.14
	Total		513
October	Common pipistrelle	2000	50.11
	Soprano pipistrelle	1968	49.31
	Nathusius' pipistrelle	4	0.10
	Noctule	8	0.20
	Myotis spp.	3	0.08
	Plecotus spp.	7	0.18
	Greater horseshoe	1	0.03
	Total		3991

Evaluation of Overall Bat Assemblage

- A4.43 Overall, species-poor improved grassland, which dominates the Site is considered to be of limited importance to a foraging/commuting bat assemblage given its poor botanical diversity. Boundary features including hedgerows and dense scrub are of value for dispersal of a bat assemblage across the wider landscape. The newly planted hedgerows (**H4** and **H5**) along the eastern boundary are currently of limited value to bats until they become established.
- A4.44 The southern and western boundary hedgerows do, however, represent a more continuous, vegetated linear feature that is directly connected to the wider landscape and of greatest value for a bat assemblage utilising the Site for foraging/dispersal. Indeed, bat activity recorded during the course of manual transect surveys appeared to be greatest along the southern boundary, with an increased number of recordings of rarer species including greater horseshoe, and less light tolerant species, such as Myotis sp. and long-eared bat.
- A4.45 Taking into account the diversity of bat species utilising the Site and the extent of their roosting potential, foraging and commuting activity, and with reference to Bat Mitigation Guidelines 2025²⁶, the overall bat assemblage using the Site is judged to be of Local level importance.

²⁶ Reason, P.F. and Wray, S. (2025). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Version 1.2. Chartered Institute of Ecology and Environmental Management, Ampfield.

Appendix EDP 5 Hazel Dormouse Surveys

Methodology

- A5.1 Owing to the suitability of hedgerow and scrub within the Site for dormouse, a survey to determine the presence/likely absence of the species was undertaken in accordance with best practice guidelines set out in the Hazel Dormouse Mitigation Handbook²⁷.

Habitat Quality Assessment

- A5.2 A habitat quality assessment was first undertaken to determine the level of survey effort (using the techniques described below) required. Habitat characteristics were recorded on 10 March 2025, and the assessment of quality followed the methodology outlined below, using the Reference Tables contained in the Mitigation Handbook:

1. Where more than one habitat type was present (i.e. scrub, woodland or hedgerow) these were assessed separately and, where areas of the same habitat type exhibited clear differences in characteristics, these were also assessed separately;
2. For each discrete habitat type/area, species diversity was measured by taking a count of those tree/shrub/climber species listed in Reference Table 3.3 present along up to three transects (each a minimum of 100m in length), and then calculating the average count per km or ha. The species diversity was then categorised as 'Low', 'Medium' or 'High' using Reference Table 3.4;
3. During the transect surveys, the structural complexity for each discrete habitat type/area was noted and then categorised as 'Low', 'Medium' or 'High' using Reference Table 3.5a for hedgerows and Reference Table 3.5b for woodland/scrub; and
4. For each discrete habitat type/area overall habitat quality was categorised as 'Poor', 'Fair', 'Good' or 'Excellent', based on its combination of species diversity and structural complexity, using Reference Table 3.6.

Nest Tube and Footprint Tunnel Surveys

- A5.3 As the Site contains habitats of Good quality for dormice, a total of 50 standard nest tubes, each comprising a wooden tray and nesting tube made from plastic tree guard material, were deployed throughout the Site in transects designed to sample all suitable habitat, on 20 March 2025. Additionally, an off-site field to the east was included within the survey area, allowing for a more robust survey. This meets the minimum of 50 tubes as recommended within the best practice guidelines. Within each transect, nest tubes were placed at 15-20m intervals (see **Plan EDP 10**) and approximately 1.5m to 2m above ground, tied to suitable branches located within the hedgerows or lower branches of trees. Tubes were left *in-situ* and checked

²⁷ Wells, D., Chanin, P. & Gubert, L. (2025). Hazel Dormouse Mitigation Handbook. The Mammal Society.

for evidence of use by dormouse during suitable weather conditions on five occasions between May and November 2025..

- A5.4 In addition, 51 unbaited footprint tunnels were deployed on 19 June 2025 in transects designed to sample all suitable habitat, between July and September. Within each transect, footprint tunnels were placed at 10m-20m intervals where possible and approximately 1.5m to 2m above ground, tied to suitable branches located within the hedgerows and scrub or lower branches of trees. These were made from robust black plastic with a tunnel entrance of 60 by 60mm, and a length of 390mm. The wooden inserts were made to fit but with a 50mm landing stage at either end of the tunnel. A strip of card was inserted, with masking tape, as a base for the tracking ink, wrapped around the plywood at either end of the card. The ink was made from three heaped teaspoons of pharmaceutical-grade activated charcoal powder to 15 level teaspoons of olive oil. The exact ratio was varied to reflect the weather and temperature during each visit to ensure that the ink remained fluid. This ink was repainted each visit, and card replaced when required.
- A5.5 The footprint tunnels were checked every two weeks for three months.
- A5.6 Details of the date and weather conditions during each survey visit are given in **Table EDP A5.1**. All visits were completed in suitable weather conditions.

Table EDP A5.1: Date and Weather Conditions during each Survey Visit

Date	Survey Type	Weather Conditions			
		Temp (°c)	Cloud Cover (%)	Wind (Beaufort Scale)	Precipitation
28 May 2025	Nest tube survey	14°C	90%	3	0
16 July 2025	Footprint tunnel check	20°C	20%	1	0
30 July 2025	Footprint tunnel check	25°C	5%	1	0
13 August 2025	Footprint tunnel check	21°C	60%	1	0
27 August	Nest tube survey & footprint tunnel check	22°C	30%	1	0
16 September 2025	Footprint tunnel check	16°C	50%	2	Brief light shower
30 September 2025	Nest tube survey & footprint tunnel check	16°C	75%	2	0
15 October 2025	Nest tube check	13°C	90%	2-3	0
27 November 2025	Nest tube survey	10°C	100%	2	Slight drizzle

Limitations

- A5.7 Not all tubes were located during the May and August checks due to the development of dense vegetation which precluded access. This is not considered a constraint with sufficient survey effort using a combination of two survey methodologies undertaken to confirm presence/infer absence of dormouse.
- A5.8 The Site itself was too small to support the recommended minimum number of tubes/tunnels; however, given a connecting field to the east was included within the survey area such that sufficient nest tubes/footprint tunnels could be deployed, this is not considered a limitation.

RESULTS

Habitat Quality Assessment

- A5.9 The results of the habitat quality assessment for hedgerows and scrub habitat located on-site are presented in **Tables A5.2** and **A5.3**.

Table EDP A5.2: Habitat Quality Assessment: Hedgerows

Habitat Type	Habitat Reference	Average Species Diversity per Km of Hedgerow	Structural Complexity	Habitat Quality
Intact Native species-rich hedgerows	H1	1 (low)	Medium	Poor
Intact Native species-rich hedgerows	H2	6 (high)	High	Excellent
Defunct native species-rich hedgerows	H3	6 (high)	Medium	Good
Defunct newly planted native species-poor hedgerows	H4 and H5	5 (medium)	Low	Poor

Table EDP A5.3: Habitat Quality Assessment: Scrub

Habitat Type	Habitat Reference	Average Species Diversity per Hectare of Woodland or Scrub	Structural complexity	Habitat Quality
Bramble scrub	Dense scrub	3 (medium)	Medium	Good

- A5.10 As noted above, the habitats within the Site range from Poor to Excellent quality for dormice. Hedgerows **H2** and **H3** and dense scrub habitats are judged to be suitable for dispersal, foraging, breeding and potentially hibernation. Hedgerow **H1** may provide suitable dispersal habitat only, while **H4** and **H5** are newly planted hedgerows that may become more suitable as they establish but are of poor habitat quality currently.

- A5.11 Hedgerow **H3** forms of the boundary between the Site and Cliffordd Byway adjacent, with connectivity to the wider landscape further west, including agricultural land that features field boundary hedgerows. Hedgerow **H2** continues northwards offsite, connecting to an area of woodland located approximately 80m north of the Site.
- A5.12 The north and eastern boundaries and central grassland provide limited connectivity for dormouse within the Site and limited connectivity to the wider landscape.

Nest Tube and Footprint Tunnel Survey

- A5.13 The nest tube and footprint tunnel surveys found no evidence of dormouse. A number of wood mice (*Apodemus sylvaticus*) and evidence of their activity (including nests and food caches) were recorded. Based on the survey results, it is assumed that a dormouse population is likely absent from the Site, or populations are too low to detect.

Plans

Plan EDP 1: Phase 1 Habitat Plan

(edp9176_d002b 14 November 2025 JFr/KWi)

Plan EDP 2: Statutory Designated Sites

(edp9176_d003b 14 November 2025 JLe/KWi)

Plan EDP 3: Local Sites

(edp9176_d019a 14 November 2025 VMS/KWi)

Plan EDP 4: Ground Level Tree Assessment Results

(edp9176_d012a 14 November 2025 JGr/KWi)

Plan EDP 5: Spring Nighttime Bat Walkover Survey Results

(edp9176_d009a 14 November 2025 JLe/KWi)

Plan EDP 6: Summer Nighttime Bat Walkover Survey Results

(edp9176_d010a 14 November 2025 JLe/KWi)

Plan EDP 7: Autumn Nighttime Bat Walkover Survey Results

(edp9176_d011a 14 November 2025 JLe/KWi)

Plan EDP 8: Bat Static Detector Locations

(edp9176_d004a 14 November 2025 JGr/KWi)

Plan EDP 9: Dormouse Tube and Tunnel Locations

(edp9176_d007a 14 November 2025 JGr/KWi)

Plan EDP 10: Badger Survey Results - Confidential

(edp9176_d008a 14 November 2025 JGr/KWi)

Plan EDP 11: Reptile Refugia Locations

(edp9176_d006a 14 November 2025 JGr/KWi)



- Site Boundary
- Reptile Mat Location

client
Lovell Partnerships Ltd (South Wales)

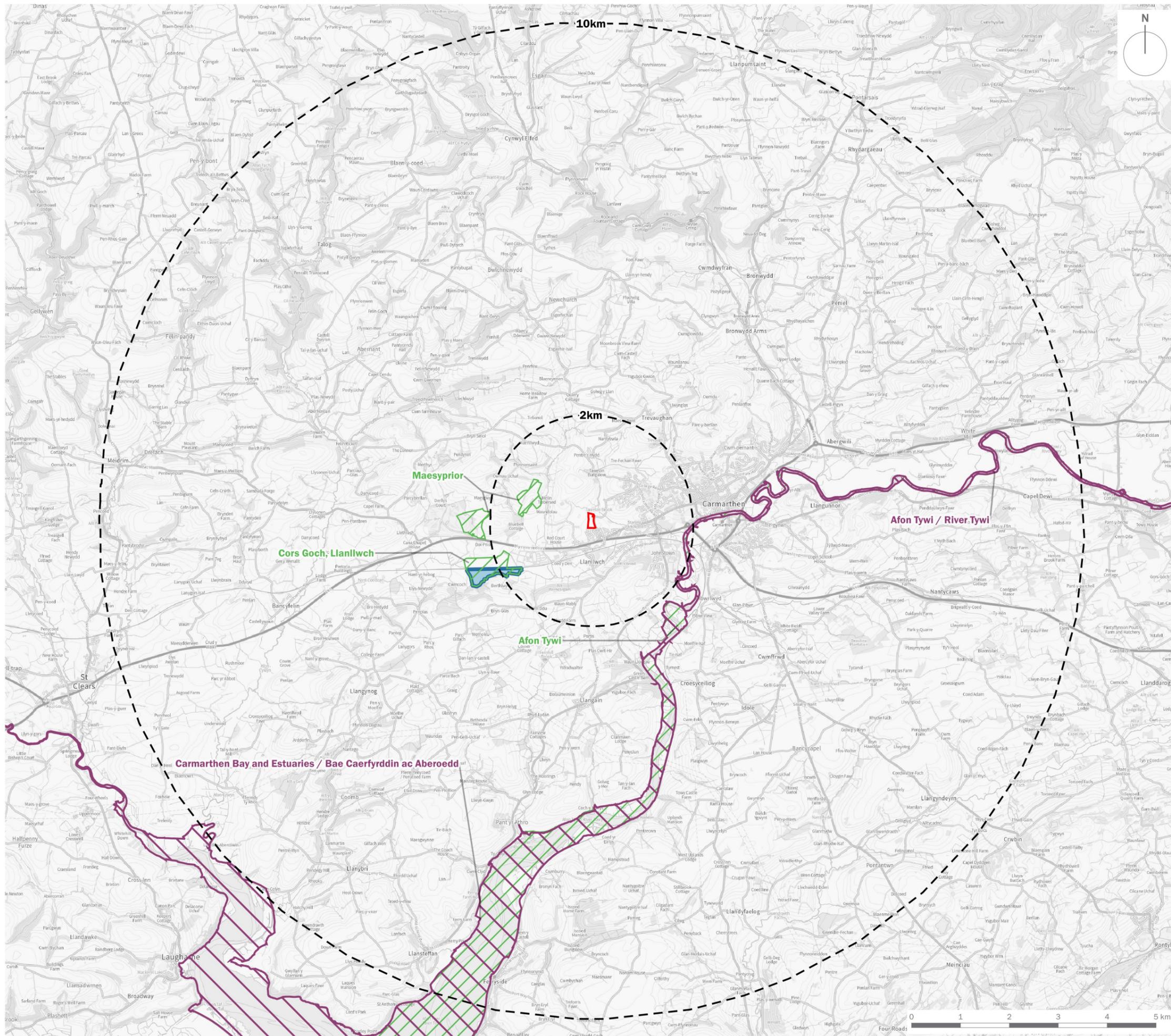
project title
Carmarthen West

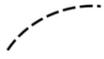
drawing title
Reptile Refugia Locations

date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d006a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



-  Site Boundary
-  Range Rings (at 2km and 10km intervals)
-  Special Area of Conservation (SAC) (within 10km)
-  Site of Special Scientific Interest (SSSI) (within 2km)
-  National Nature Reserve (NNR) (within 2km)

client	Lovell Partnerships Ltd	
project title	Carmarthen West	
drawing title	Statutory Designated Sites	
date	14 NOVEMBER 2025	drawn by JLe
drawing number	edp9176_d003b	checked KWi
scale	1:76,000 @ A3	QA GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



- Site Boundary
- 2km Study Area
- Ancient Woodland Inventory

client	Lovell Partnerships Ltd	
project title	Carmarthen West	
drawing title	Local Sites	
date	14 NOVEMBER 2025	drawn by VMS
drawing number	edp9176_d019a	checked KWi
scale	1:20,000 @ A3	QA GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



- Site Boundary
- Potential Roost Feature - For Individual Bats (PRF-I)
- T1** Tree Number

Potential roost feature (PRF) type estimated from the ground. A close inspection survey of any trees to be affected would be required to confirm PRF type. PRF shown is the maximum level for any PRF on a tree.

client			
Lovell Partnerships Ltd			
project title			
Carmarthen West			
drawing title			
Ground Level Tree Roost Assessment			
date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d012a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



- Site Boundary
- Nighttime Bat Survey Transect Route
- ◆ Static Observation Point
- Common Pipistrelle
- Soprano Pipistrelle
- Noctule

client
Lovell Partnerships Ltd

project title
Carmarthen West

drawing title
Spring Nighttime Bat Walkover

date	14 NOVEMBER 2025	drawn by	JLe
drawing number	edp9176_d009a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk





- Site Boundary
- Nighttime Bat Survey Transect Route
- ◆ Static Observation Point
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis spp.
- Noctule
- Long-eared Sp.

client	Lovell Partnerships Ltd		
project title	Carmarthen West		
drawing title	Summer Nighttime Bat Walkover		
date	14 NOVEMBER 2025	drawn by	JLe
drawing number	edp9176_d010a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



- Site Boundary
- Nighttime Bat Survey Transect Route
- ◆ Static Observation Point
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis spp.
- Noctule

client

Lovell Partnerships Ltd

project title

Carmarthen West

drawing title

Autumn Nighttime Bat Walkover

date	14 NOVEMBER 2025	drawn by	JLe
drawing number	edp9176_d011a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



Site Boundary



Bat Static Detector Location

client

Lovell Partnerships Ltd

project title

Carmarthen West

drawing title

Bat Static Detector Locations

date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d004a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk



- Site Boundary
- Survey Area
- ◆ Dormouse Tube Location
- ◆ Dormouse Tunnel Location

client

Lovell Partnerships Ltd

project title

Carmarthen West

drawing title

Dormouse Tube and Tunnel Locations

date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d007a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



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- Site Boundary
- ⊙ Mammal Hole 1
- ⓪ Badger Latrine
- ⊗ Snuffle Hole

client
Lovell Partnerships Ltd (South Wales)

project title
Carmarthen West

drawing title
Badger Survey Results

date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d008a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



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- Site Boundary
- Reptile Mat Location

client
Lovell Partnerships Ltd (South Wales)

project title
Carmarthen West

drawing title
Reptile Refugia Locations

date	14 NOVEMBER 2025	drawn by	JGr
drawing number	edp9176_d006a	checked	KWi
scale	1:1,250 @ A3	QA	GYo



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