



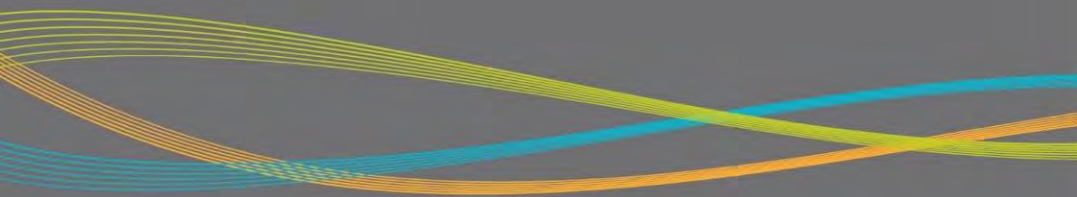
**Woodlands  
Green, Coedely**

**Ecological  
Appraisal**

Prepared by:  
**The Environmental  
Dimension  
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On behalf of:  
**Lewis Homes**

October 2018  
Report Reference  
**edp4896\_r002**



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**For EDP use**

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## Executive Summary

- S1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership (EDP) on behalf of Lewis Homes (hereafter referred to as ‘the Applicant’). This Appraisal considers the ecological implications in respect of development of land at Woodlands Green, Coedely, Rhondda Cynon Taf (hereafter referred to as “the Application Site”).
- S2 To establish the ecological baseline of the Application Site and subsequently inform a detailed planning submission for redevelopment, a Desk Study and Extended Phase 1 survey were undertaken during June and July 2018. Further detailed surveys for hedgerows, badger and bats were also undertaken over the course of 2018.
- S3 No part of the Application Site is covered by any statutory or non-statutory designations, with the vast majority being adequately distant from the Application Site such that no adverse impacts upon their ecological integrity and qualifying features are anticipated to arise. However, Rhos Tonyrefail Site of Specific Scientific Interest (SSSI) is located within 200m of the Application Site, with adverse impacts arising from increased recreational pressure following occupation potentially arising.
- S4 With respect to habitats supported, the Application Site largely comprises species-poor, semi-improved grassland of limited ecological value. However, habitats of greater value are present across its peripheries, including species-rich hedgerows and mature trees. Such features are considered likely to support a range of wildlife, including breeding birds and roosting, foraging and commuting bats.
- S5 Overall land take associated with the proposals is considered to have minimal ecological impact, with the vast majority of the development footprint sited predominantly across areas of species-poor, semi-improved grassland habitat and sited away from ecological sensitive boundary features. Minor hedgerow loss will result however, with a circa 11m wide break through hedgerow **H1** required to facilitate access. Additionally, a small, 4.5m wide section of vegetation loss at the south eastern corner of field **F2** is also required to facilitate an emergency access route.
- S6 Accordingly, specific proposals for the avoidance, mitigation and compensation of any predicted impacts have been provided. These measures include: the protection and enhancement of those features of ecological importance; their further enhancement through the provision of adequate native tree, shrub and grassland planting within habitat buffers proposed and elsewhere across the Application Site to compensate for habitat loss as detailed within a future landscape planting scheme; the provision of adequate areas of public open space onsite for recreational use; the inclusion of a sensitive drainage and a lighting strategy; and the implementation of sensitive working methodologies and pollution control measures during the construction phase.

- S7 Subject to implementation of inherent detailed design and recommended mitigation and enhancement measures, EDP's desk and field-based baseline investigations have demonstrated that those designated sites, habitats and species present within and around the Application Site do not pose a significant 'in principle' constraint to the proposed development. Overall, therefore, EDP considers that the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels.

## **Section 1**

### **Introduction, Purpose and Context**

- 1.1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Lewis Homes (hereafter referred to as 'the Applicant'). This Appraisal considers the ecological implications in respect of development of land at Woodlands Green, Coedely, Rhondda Cynon Taf (hereafter referred to as 'the Application Site').

#### **Site Context**

- 1.2 The Application Site is centred at Ordnance Survey Grid Reference (OSGR) ST 02007 86810 within the Local Planning Authority (LPA) of Rhondda Cynon Taf County Borough Council (RCT). The Application Site measures circa 3 hectares (ha) and represents a potential further phase of 'The Meadows' housing estate.
- 1.3 Habitats within the Application Site largely comprise three fields of sheep-grazed pasture enclosed by hedgerows and mature trees. It is situated within a rural landscape; however, the expanding Meadows housing estate and associated building site are situated immediately to the south-west. The remainder of the site is surrounded by fields, hedgerows and woodland. The Nant Melyn, a tributary of the River Ely, runs north-east to south-west within 100m to the south-west boundary, and is buffered by another field.

#### **Planning Context**

- 1.4 To inform a previous planning application on the adjacent site to the south-west (Planning Reference: 11/1001/10), ecological surveys were carried out by Pryce Consultant Ecologists (PCE) in 2009, 2010 and 2011, which included a Phase 1 habitat survey together with further detailed survey for dormouse, otter and badger; their survey areas also included parts of the current Application Site. An Ecological Management Plan was also submitted. An updated Extended Phase 1 habitat survey was subsequently undertaken by David Clements Ecology Ltd (DCE) in 2015, covering some of the hedgerows forming boundaries to the current Application Site.
- 1.5 Planning consent was granted for the construction of 54 resident units to the south-west of the current Application Site and is mostly complete. A new full planning application is now proposed to be submitted for two of the fields to the north-east of the existing Meadows development; these fields and boundaries form the focus of the current Ecological Appraisal.

## Development Proposals

- 1.6 The Applicant proposes to submit a full planning application for an extension to the existing residential development site (The Meadows/Highfields) to provide an additional 76 dwellings on the two fields to the north-east. An emergency access will also be included as part of the application, which will traverse the field parcel to the west of the Application Site, linking to the existing highway network adjacent to the farmstead. The site has no allocation within the LDP and is outside of settlement boundary. **Appendix EDP 1** shows the illustrative layout of the proposed redevelopment.
- 1.7 The ecological sensitivities of the Application 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 Appraisal

- 1.8 This Ecological Appraisal describes the current ecological interest within and around the Application 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.
- 1.9 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 Application 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 the development proposals, how the design has been influenced by ecological factors, EDP input to the design process and key components of inherent mitigation;
  - **Section 5** considers the potential impacts of the proposal on pertinent ecological features in the context of legislative, planning policy and biodiversity action planning considerations. Recommended mitigation and enhancement measures are provided for the current and possible future planning stages; and
  - **Section 6** summarises the inherent and recommended additional mitigation measures and provides the overall conclusions of this appraisal.



## **Section 2**

### **Methodology (Baseline Investigations)**

2.1 This section of the Ecological Appraisal summarises the methodologies employed in determining the baseline ecological conditions within and around the Application Site. The Appraisal 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 Application 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 undertaking an initial ecological appraisal of a site proposed for development, enabling the initial collation and review of contextual information, such as designated sites, together with known records of protected and priority species.

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

- South East Wales Biodiversity Records Centre (SEWBRc); and
- Multi-Agency Geographic Information for the Countryside (MAGIC) website<sup>1</sup>.

2.4 The desk study was undertaken on 1 August 2018 and involved obtaining the following information:

- International statutory designations (10km radius around site);
- National statutory designations (5km);
- Non-statutory local sites (1km);
- Annex II bat species<sup>2</sup> records (6km); and
- All other protected/notable species records (2km).

2.5 These search areas are considered sufficient to cover the potential zones of influence<sup>3</sup> of the proposed development in relation to designated sites, habitats and species.

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<sup>1</sup> [www.magic.gov.uk](http://www.magic.gov.uk)

<sup>2</sup> Bat species listed in Annex II of the EC Habitats Directive, namely Greater horseshoe, Lesser horseshoe, Barbastelle and Bechstein's bats.

<sup>3</sup> Zone of Influence - the areas and resources that may be affected by the proposed development.

### **Extended Phase 1 Survey**

- 2.6 The survey technique adopted for the initial habitat assessment was at a level intermediate between a standard Phase 1 survey technique<sup>4</sup>, based on habitat mapping and description, and a Phase 2 survey, based on detailed habitat and species surveys. The survey technique is commonly known as an Extended Phase 1 Survey. This level of survey does not aim to compile a complete floral and faunal inventory for the site.
- 2.7 The level of survey involves identifying and mapping the principal habitat types and identifying the dominant plant species present in each principal habitat type. In addition, any actual or potential protected species or species of principal importance are identified and scoped.
- 2.8 The Extended Phase 1 survey of land within and immediately adjacent to the Application Site was undertaken by a suitably qualified ecologist on 8 June and 6 July 2018, during which the weather was overcast, still and dry.

### **Detailed (Phase 2) Surveys**

- 2.10 The scope of the Phase 2 surveys undertaken was defined following the initial studies described above (desk study and Extended Phase 1 survey). Those surveys 'scoped in' as part of the Ecological Appraisal are summarised in turn below. Other survey types which were not considered necessary/appropriate in this case, albeit commonly required as part of an Ecological Appraisal to inform development upon greenfield sites, are also discussed in turn in **Section 3**.

### **Hedgerow Assessment**

- 2.11 An assessment of the hedgerow network onsite was undertaken to determine their importance following the Wildlife and Landscape criteria provided in Part II of Schedule 1 of the Hedgerows Regulations 1997.
- 2.12 The aims of the hedgerow assessment were to:
- (i) Determine the extent of hedgerows qualifying as 'important' under the Wildlife and Landscape criteria of the Hedgerows Regulations (1997); and
  - (ii) Identify hedgerows which, whilst not qualifying as 'important' under the ecological criteria of the Hedgerow Regulations (1997) have ecological value in terms of species diversity or as potential wildlife corridors.
- 2.13 A total of 10 hedgerows located across the Application Site were surveyed, these hedgerows qualifying for assessment by being assessed to be greater than 30 years of

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<sup>4</sup> Joint Nature Conservation Council (2004) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (reprinted with minor corrections for original Nature Conservancy Council publication).

age, being located adjacent to land in agricultural/horticultural use, and exceeding 20m in length or by being connected at both ends to another hedgerow of any length.

2.14 Hedgerows are considered important should the following apply: the hedgerow be referred to in a record held by a biological records centre as containing protected plants (within 10 years) or birds and animals (within 5 years); contain species listed in Schedule 5 (animals) and 8 (plants) of the Wildlife and Countryside Act 1981 (as amended); birds categorised as declining breeders<sup>5</sup>; or any species categorised as 'endangered', 'extinct', 'rare' or 'vulnerable' by any of the British Red Data Books; or contain one of the following per section surveyed:

- Seven Schedule 3 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.

2.15 Listed features include:

- A bank or wall which supports the hedgerow along at least half of its length;
- Gaps which together do not exceed 10% of the length of the hedgerow;
- At least one standard tree per 50m of hedge;
- At least three Schedule 2 woodland species within the hedgerow;
- A ditch along at least one half of the length of the hedgerow;
- Connections scoring 4 points or more (1 point per connection of the hedgerow with another and 2 points per connection of the hedgerow to a pond or broad-leaved woodland); or
- A parallel hedge within 15m of the hedgerow.

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<sup>5</sup> RSPB (2009) *The Population Status of Birds in Wales 2: An Analysis of Conservation Concern: 2002-2007* (RSPB Cymru, Cardiff)

### **Badger**

2.16 Badger (*Meles meles*) activity within the Application Site was assessed during the Phase 1 Habitat survey. 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 active use:

- Fresh spoil outside entrances;
- Old bedding material (typically dried grass) outside entrances;
- Holes being cleared of leaf litter;
- Badger guard hairs; and
- Fresh tracks leading to/from the holes.

### **Bats**

#### *Investigations of Bat Roosting – Trees*

2.17 To determine the potential impacts of future development upon bats potentially roosting within trees across the Application Site, all suitable trees/tree groups were subject to a ground level visual assessment with reference to current best practice guidance<sup>6</sup>.

2.18 The tree survey involved a ground-based visual assessment of trees for the presence of, or potential to support, roosting bats. The survey was undertaken during the Extended Phase 1 survey by a suitably qualified and Natural Resources Wales (NRW) licensed bat ecologist.

2.19 Suitable features for roosting bats sought for during the assessment included:

- Loss/peeling/fissured bark;
- Natural holes e.g. rot holes and holes from fallen limbs;
- Woodpecker holes;
- Cracks/splits or hollow tree trunks/limbs; and
- Thick-stemmed ivy.

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<sup>6</sup> Bat Conservation Trust (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition*. Bat Conservation Trust, London.

2.20 Signs of roosting bats sought for included:

- Bat/s roosting *in-situ*;
- Bat droppings within or beneath a feature;
- Staining around or beneath a feature;
- Oily marks (staining) around roost access points;
- Audible squeaking from the roost;
- Large/regularly used roosts or regularly used Sites may produce an odour; and
- Flies around the roost, attracted by the smell of guano.

2.21 Based upon the results of the visual assessment and features/evidence identified, the following ratings for trees were used during the assessment:

- **Known or confirmed roost** - European Protected Species (EPS) licence required for works to tree to be completed lawfully;
- **High potential** - Tree supports one or more features that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time;
- **Moderate potential** - Tree supports one or more features that could be used by bats but are unlikely to support a roost type of high conservation status;
- **Low potential** - Tree supports one or more features that could be used by individual bats opportunistically, or is of sufficient size and age to contain such features; and
- **Negligible potential** - Negligible features likely to support roosting bats.

*Bat Activity Surveys: Manual, Walked Transect Surveys*

2.22 During the Extended Phase 1 survey, habitats present within and adjacent to the Application Site were identified as having the potential to support foraging and commuting bats. Following discussion with the County Ecologist, dusk transect surveys were completed on 18 July, 2 August and 4 September 2018. With reference to best practice guidelines<sup>7</sup>, dusk surveys were initiated at sunset and extended for at least two hours following sunset.

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<sup>7</sup> Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition*. Bat Conservation Trust, London.

- 2.23 During each of the surveys, a single transect route was walked by an experienced surveyor at a slow and steady pace, with routes designed to cover all suitable habitat features on the Application Site, including boundary woodland and hedgerows. Twelve 'pacing points' lasting approximately five minutes each were also incorporated within the transect route to ensure good quality recordings were obtained and to allow for observations of bat activity behaviour to be recorded.
- 2.24 All bats recorded were marked on survey maps to characterise the value of those habitats supported by the Application Site with respect to foraging and commuting bats. **Plans EDP 2a to 2c** illustrate the transect route walked and stopping point locations during the surveys.
- 2.25 Activity surveys were conducted using an Elekon Bat Logger, with observations of the time, location, and activity of all bats seen or heard recorded. Bats were identified on the basis of their characteristic echolocation calls, which were recorded where appropriate and analysed using computer sonogram analysis (Bat Explorer) to confirm species identification. Species of Myotis bat (*Myotis* spp.) and long-eared bat (*Plecotus* spp.) are difficult to tell apart solely from their echolocation calls and were therefore grouped as such.

#### *Bat Activity Surveys: Automated, Static Detector Surveys*

- 2.26 Bat activity levels across the Application Site were also sampled using two automated Anabat Express bat detectors installed along the transect route between 18 and 23 July 2018, 15 and 20 August 2018, and 4 and 9 September 2018 to supplement the transect data collated. All Anabat detectors were deployed for a minimum of five consecutive nights within key habitats, along the mature hedgerows forming the Application Site's northern and eastern boundaries. During deployment the external microphone was positioned away from adjacent vegetation clutter to maximise detection sensitivity. The locations of the static detectors are illustrated within **Plans EDP 2a to 2c**.
- 2.27 All files were checked manually using sonogram analysis in accordance with published guidelines<sup>8</sup> to confirm the species identification of each bat call.

#### Limitations

- 2.28 The identification of calls and species using Analook software is dependent upon the quality of the recording made, which can be influenced by weather conditions such as rainfall and wind, as well as the distance of the bat from Anabat and the presence of obstructions through which the noise must pass i.e. trees and proximity of other noise sources such as roads.

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<sup>8</sup> Russ (2012). *British Bat Calls, a guide to species identification*. Pelagic Publishing, Exeter.

## Section 3 Results (Baseline Conditions)

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 Application 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.

### Designated Sites

3.2 Information regarding designated sites was obtained during the Desk Study from the MAGIC website and SEWBRc. Statutory designations (those receiving legal protection) and non-statutory designations (those receiving planning policy protection only) are discussed in turn below. The locations of designated sites are given in **Appendix EDP 2**.

### Statutory Designations

3.3 Statutory designations represent the most significant ecological receptors, being of recognised importance at an international and/or national level. International designations include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites. National designations include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs).

3.4 No part of the Application Site is covered by any statutory designations. However, there are a number of such designations within the Application Site's potential zone of influence, as described below/summarised in **Table EDP 3.1**.

**Table EDP 3.1:** Statutory designations within the site's potential zone of influence.

Designation	Distance from site (km)	Interest Feature(s)
<b>International</b>		
Blackmill Woodlands SAC	8.3km west	This site comprises old sessile oak woods situated at the southern extreme of the habitat's range in Wales. An acidic ground flora of bilberry ( <i>Vaccinium myrtillus</i> ) and wavy hair-grass ( <i>Deschampsia flexuosa</i> ) dominates.

Designation	Distance from site (km)	Interest Feature(s)
Cardiff Beech Woods SAC	9.9km east	An area of semi-natural broadleaved woodland dominated by Beech ( <i>Fagus sylvatica</i> ). This SAC comprises one of the largest concentrations of <i>Asperulo-Fagetum</i> beech forests in Wales. Notable ground flora includes Ramsons ( <i>Allium ursinum</i> ), Sanicle ( <i>Sanicula europaea</i> ), Bird's-nest Orchid ( <i>Neottia nidus-avis</i> ) and Yellow Bird's-nest ( <i>Hypopitys monotropa</i> ).
<b>National</b>		
Rhos Tonyrefail SSSI	200m north (closest section)	A network of seven groups of fields scattered around Tonyrefail. Large lowland site of special interest for its marshy grassland, acid flush, species-rich neutral grassland, acid grassland, wet heath and blanket mire. Also of interest for its population of marsh fritillary butterfly ( <i>Euphydryas aurinia</i> ).
Llantrisant Common and Pastures SSSI	3km south-east	A 113.2ha site important for its extensive area of predominantly acidic marshy grassland in a lowland setting and for smaller areas of species-rich neutral and acidic grassland and soligenous flush. The nationally scarce cornish moneywort ( <i>Sibthorpia europaea</i> ) has been recorded growing at the edges of drainage ditches on site. Also, the nationally rare bog earwort ( <i>Scapania paludicola</i> ) occurs within the marshy grassland on the Common. Other species of note include ivy-leaved bellflower ( <i>Wahlenbergia hederacea</i> ) and royal fern ( <i>Osmunda regalis</i> ).
Nant Gelliwion Woodland SSSI	3.7km east	Mixed deciduous woodland dominated by stands of sessile oak ( <i>Quercus petraea</i> ). The stands occupy a small tributary valley of the Rhondda which flows over Pennant Sandstone and superficial deposits of boulder clay. A ground flora of Sweet vernal grass ( <i>Anthoxanthum odoratum</i> ), creeping soft grass ( <i>Holcus mollis</i> ), bluebell ( <i>Hyacinthoides non-scripta</i> ), bracken ( <i>Pteridium aquilinum</i> ) and wood sorrel ( <i>Oxalis acetosella</i> ) can be found within the drier portions of the site. In wetter areas, a ground flora of Marsh violet ( <i>Viola palustris</i> ), sedges ( <i>Carex spp.</i> ), reed grass ( <i>Glyceria spp.</i> ) and meadowsweet ( <i>Filipendula ulmaria</i> ) is commonly found.



Designation	Distance from site (km)	Interest Feature(s)
Brynnna a Wern Tarw SSSI	4.8km south-west	Brynnna a Wern Tarw comprises a series of enclosed pastures, interspersed with small woodlands and hedgerows. The 130.7ha site is important for its large area of mixed, species-rich lowland grassland. This includes significant areas of marshy and dry neutral grassland. The marshy grassland and frequent devil's-bit scabious ( <i>Succisa pratensis</i> ) supports a metapopulation of marsh fritillary ( <i>Eurodryas aurinia</i> ), which centres on Brynnna a Wern Tarw. In addition, the network of hedgerows and mature scrub occurring on site provides habitat for dormice ( <i>Muscardinus avellanarius</i> ).

### Non-Statutory Designations

- 3.5 Non-statutory designations are also commonly referred to in planning policies as 'local sites', although in fact these designations are typically considered to be importance at a county level. In Rhondda Cynon-Taf, such designations are named Sites of Importance for Nature Conservation (SINCs). Additional designated sites which should be considered at this level include Local Nature Reserves (LNRs) and Ancient Semi-Natural Woodland (ASNW) where these are not covered by other designations.
- 3.6 The Application Site does not contain or lie adjacent to any non-statutory sites of conservation interest; however, there are four SINCs within approximately 1km; a summary of these SINCs is provided within **Table EDP 3.2**, with locations shown in **Appendix EDP 2**.

**Table EDP 3.2:** Non-statutory designations within the site's potential zone of influence.

Designation	Distance from site	Interest Feature(s)
<b>SINC</b>		
River Ely (SINC 92)	450m SW	Wildlife corridor and includes the river, and associated bank side habitats, between Tonyrefail and Talbot Green. It is a key river for otter, and it supports kingfisher, dipper and grey wagtail. Brown trout and salmon both breed within its length.
Garth-Grabban Slopes (SINC 109)	650m SE	A small modified valley mire and associated marshy grassland, which occupies a strategically important location for marsh fritillary butterfly. The bog and marshy grassland are dominated by soft rush, with purple moor-grass, tormentil, carnation sedge, and cuckooflower. Large parts of the SINC have been identified as suitable marsh fritillary habitat.
Pant-y-Ddraenen (SINC 113)	975m E	The upper valley of the Nant Muchudd and associated tributary streams, and marshy and drier neutral grassland. The stream supports salmon,

Designation	Distance from site	Interest Feature(s)
		brown trout, otter, dipper, and grey wagtail.
Llanilid Valley (SINC 108)	1km SW	The valley of the Nant Llanillid and its associated woodland and marshy grassland. The stream valley has potential as otter habitat. The valley side oak, alder, ash, hazel, willow and holly woodland is diverse with an ancient woodland ground flora. The valley represents excellent woodland bird habitat and potentially good bat and dormouse habitat.

### Habitats

- 3.7 Information on habitats within and around the Application Site was obtained during the desk study and Extended Phase 1 survey.
- 3.8 The distribution of the different habitat types within and adjacent to the Application Site is illustrated on **Plan EDP 1**. The main habitat types present are described in turn below.

#### **Broadleaved Woodland**

- 3.9 There are two areas of woodland that are beyond the Application Site boundary; however, a cursory inspection was made for context purposes.
- 3.10 Woodland **W1** is situated to the east of the site, approximately 80m from the Application Site boundary, though it is adjacent to the field where the drainage tanks are proposed. The section adjacent to this field is broadleaved and semi-natural in character and forms a corridor along the Nant Melyn, a stream with a rocky bed that runs north-east to south-west. Pedunculate oak (*Quercus robur*) dominates the canopy in this section, particularly on the eastern side of the stream, though there is occasional alder and ash. Blackthorn (*Prunus spinosa*), hazel (*Corylus avellana*) and holly (*Ilex aquifolium*) dominate the edges closest to the field, which is much more scrub-like in nature. The shrub layer beneath the canopy is also largely dominated by these species, along with bramble (*Rubus fruticosus* agg.) and dog rose (*Rosa canina*). The ground layer is largely bramble dominated, though there are more open areas containing remote sedge (*Carex remota*), lady fern (*Athyrium filix-femina*), marsh horsetail (*Equisetum palustre*), ivy (*Hedera helix*), wood avens (*Geum urbanum*), hedge bindweed (*Calystegia sepium*), floating sweet-grass (*Glyceria fluitans*) and bracken (*Pteridium aquilinum*).
- 3.11 Woodland **W2** is a narrow strip of semi-natural broadleaved woodland along the west of the field proposed for the access track, presumably a former hedgerow(s) that has developed into woodland (based on Google Earth historical aerial imagery). It connects to a larger area of woodland to the south. Given the limited work proposed in this area, only 20m section of the woodland was surveyed. The woodland canopy of the surveyed area contains mature sycamore (*Acer pseudoplatanus*), ash (*Fraxinus excelsior*) and oak as

well as some younger specimens close to a field access gate; hazel, elder (*Sambucus nigra*) and holly also occur. Common nettle (*Urtica dioica*) and ivy are abundant, with bluebell (*Hyacinthoides non-scripta*) and male fern (*Dryopteris filix-mas*) occurring rarely. There is a small stand of Himalayan balsam (*Impatiens glandulifera*) occurs along part of this woodland.

### **Hedgerows**

- 3.12 Hedgerows **H1-H7** comprise the Application Site, with hedgerows H8-H10 located offsite. Of these ten hedgerows surveyed, 8 qualify as being 'important'. These hedgerows are described further below.
- 3.13 Hedgerow **H1** separates the two main fields of the Application Site and has access gaps at the north and south. The hedge is approximately 2m high and 3m wide, appears to be regularly flailed and is on a raised bank. The woody component of the hedge is relatively species rich, with 7 species; these comprise frequent hazel, holly and blackthorn, with dog rose, pedunculate oak, downy birch (*Betula pubescens*) and rowan (*Sorbus aucuparia*) occurring rarely. The understorey is species poor, with bramble climbing up through the hedge. Cleavers (*Galium aparine*), creeping buttercup (*Ranunculus repens*), bramble, bracken and ivy are frequent; foxglove (*Digitalis purpurea*) occurs occasionally and germander speedwell (*Veronica chamaedrys*) and enchanter's nightshade (*Circaea lutetiana*) rarely.
- 3.14 Hedgerow **H2** runs along the southern boundary and appears unmanaged, with dimensions of approximately 15m high and 2m wide. It comprises a line of mostly young trees, though there are some mature specimens present. The hedgerow lines the gardens of houses to the south and has a number of gaps; there is some brash within the gaps. A dry ditch runs along the hedge, which has scrubbed over in parts. The woody component includes ash, holly, hazel, grey willow (*Salix cinerea*), blackthorn, pedunculate oak, silver birch (*Betula pendula*) and gorse (*Ulex europaeus*). There is a patchy shrub layer where holly and hazel occur, and bramble occupies much of the ditch; the ground layer contains bluebell, broad buckler-fern (*Dryopteris dilatata*), soft rush (*Juncus effuses*), honeysuckle (*Lonicera periclymenum*), cleavers, bracken, sweet vernal-grass (*Anthoxanthum odoratum*), ivy, common bent (*Agrostis capillaris*) and creeping bent (*Agrostis stolonifera*).
- 3.15 Hedgerow **H3** is a short line of mature trees running along the gardens of adjacent houses. There is a dry ditch along the hedge. The hedge is unmanaged and gappy. Mature pedunculate oak dominate the canopy, with dog rose, rowan, hazel, hawthorn and holly also occurring in the shrub layer, along with bramble which is frequent along the ditch. The ground layer includes bluebell, broad buckler-fern, dog violet (*Viola sp.*), hard fern (*Blechnum spicant*), bracken, ivy and common bent.
- 3.16 Hedgerow **H4** is an unmanaged line of mature trees growing along a barbed wire fence. The tree-line is approximately 15m high by 2m wide and is intact with an established shrub layer. The canopy is dominated by pedunculate oak, with silver birch also occurring rarely. The shrub layer is dense with holly, hawthorn, blackthorn, hazel, rowan and dog

rose all occurring. The ground flora is relatively diverse, particularly on the west, including bluebell, enchanter's nightshade, wood sorrel (*Oxalis acetosella*), hard fern, broad buckler-fern, male fern, bracken, hard rush (*Juncus inflexus*), foxglove and creeping jenny (*Lysimachia nummularia*). Bramble dominates some sections, especially on the eastern aspect where it lines the whole hedgerow.

- 3.17 Hedgerow **H5** is an unmanaged line of mature trees growing along a dry ditch and wire fence. The tree-line is approximately 15m high by 2m wide and contains several gaps. The canopy is dominated by pedunculate oak, with silver birch also occurring rarely. The shrub layer is intermittent with holly, hawthorn, blackthorn, hazel, elder, rowan and rose all occurring. Enchanter's nightshade, bluebell, broad buckler-fern, bracken, male fern, cock's foot (*Dactylis glomerata*), honeysuckle and ivy occur occasionally, with nettle being dominant on the northern edge along the ditch.
- 3.18 Hedgerow **H6** is defunct with numerous large gaps and some semi-mature trees. The hedgerow measures approximately 10m high by 2m wide, with some recent tree removal. It is largely unmanaged, however. Pedunculate oak and hawthorn are the main woody species, though grey willow, holly, rowan, gorse, hawthorn, and rose are also present. Given the open and defunct nature of the hedgerow, the ground flora is largely of the same character as the surrounding grassland; however, herb robert (*Geranium robertianum*) and enchanter's nightshade occur occasionally. Other species within the ground flora include bracken, foxglove, germander speedwell and nettle.
- 3.19 Hedgerow **H7** is a managed hedgerow separating two fields. There are a number of gaps throughout, with the hedgerow measuring approximately 2m wide x 2m tall. There is a very small section of stone wall to the north. The woody component is dominated by hazel, holly and blackthorn, with lesser amounts of ash, pedunculate oak and rowan. Bluebell occurs rarely in the ground flora, with ivy, nettle, cleavers and foxglove occurring occasionally.
- 3.20 Hedgerow **H8** is intact and managed (flailed), measuring approximately 2m high x 2m wide. The hedgerow is on a raised bank along its whole length. There are no trees. Hazel dominates, with other woody species comprising holly, hawthorn, ash and dog rose. The ground flora is diverse, and includes wood sorrel, enchanter's nightshade, herb robert, bluebell and barren strawberry (*Potentilla sterilis*). Other species within the ground flora include bracken, creeping buttercup, cleavers, nettle, foxglove, cock's-foot, red campion (*Silene dioica*) and bramble.
- 3.21 Hedgerow **H9** is a short gappy treeline measuring approximately 15m high x 2m wide. There are some mature trees present. The hedge appears largely unmanaged and runs along a ditch that was dry at the time of the survey. Woody species include hazel, pedunculate oak, hawthorn, holly, silver birch, blackthorn and ash. The ground flora is dominated by bramble and bracken along the ditch, though enchanter's nightshade occurs rarely. Other species include ivy, common bent, ragwort (*Senecio jacobaea*) and tutsan (*Hypericum androsaemum*).

- 3.22 Hedgerow H10 is an unmanaged mature tree line along a dry ditch. Pedunculate oak is the main woody species, with hazel, holly, silver birch, rowan and crab apple also occurring. Bramble is dense in some areas at the base, but some Schedule 2 species are present comprising enchanter's nightshade, hard fern and lady fern. Other species include bracken, common bent, ivy, sweet vernal-grass, Yorkshire fog (*Holcus lanatus*), cock's-foot and meadow buttercup.
- 3.23 The findings of the Hedgerow Regulations assessment are detailed in **Appendix EDP 3**, and further summarised in **Table EDP 3.3** below.

**Table EDP 3.3:** Summary of Important Hedgerows

Hedgerow	Qualify as Important Hedgerow?	Qualifying Features
<b>H1</b>	Yes	7 Schedule 3 woody species.
<b>H2</b>	Yes	7 Schedule 3 woody species.
<b>H3</b>	Yes	6 Schedule 3 woody species, along with 3 features comprising a ditch along more than 50% of its length; more than one standard tree per 50m; and three Schedule 2 woodland species.
<b>H4</b>	Yes	6 Schedule 3 woody species, along with 3 features comprising: more than one standard tree per 50m; more than three Schedule 2 woodland species as well as less than 10% gaps.
<b>H5</b>	Yes	This hedgerow qualifies as an 'Important Hedgerow' based on the presence of 7 Schedule 3 woody species.
<b>H6</b>	No	Although it doesn't qualify, it is species-rich in terms of woody species, containing a mean of 5.5 species per 30m.
<b>H7</b>	No	Although it doesn't qualify, it is species-rich in terms of woody species, containing a mean of 6 species per 30m.
<b>H8</b>	Yes	5 Schedule 3 woody species, along with 4 features comprising: a bank present more than 50% of its length; less than 10% gaps; more than 3 Schedule 2 species, and connections adding up to 4.
<b>H9</b>	Yes	7 Schedule 3 woody species.
<b>H10</b>	Yes	6 Schedule 3 woody species, along with 3 features comprising: more than one standard tree per 50m; three Schedule 2 woodland species as well as a parallel hedgerow to the north.

### **Dense Scrub**

- 3.24 Dense scrub occurs around the edges of some of the fields, particularly field **F4** where bramble scrub is dense along the eastern hedge, and blackthorn scrub on the edge of woodland **W1**.

### **Poor Semi-Improved Neutral Grassland**

- 3.25 The Application Site comprises two poor, semi-improved grassland fields, **F1** and **F2**. Two further poor, semi-improved grassland fields, **F3** and **F4**, are located offsite to the northwest and south east respectively.
- 3.26 Field **F1** is lightly grazed by both cattle and sheep. Yorkshire fog is abundant and locally dominant, with rough meadow-grass (*Poa trivialis*) and perennial rye-grass (*Lolium perenne*) also abundant. Sweet vernal-grass, meadow fox-tail (*Alopecurus pratensis*) and crested dog's-tail (*Cynosurus cristatus*) are also frequent within the sward, with soft brome (*Bromus hordeaceus*) and red fescue (*Festuca rubra*) occurring rarely. Soft rush (*Juncus effusus*) is frequent, with compact rush (*J. conglomeratus*) and sharp flowered rush (*J. acutiflorus*) occurring rarely. Oval sedge (*Carex ovalis*) occurs rarely. Forb diversity is relatively low, with abundant creeping buttercup (*Ranunculus repens*) and white clover (*Trifolium repens*), and frequent red clover (*T. pratense*). Lesser trefoil (*T. dubium*) is occasional and common mouse-ear (*Cerastium fontanum*), ribwort plantain (*Plantago lanceolata*), common sorrel (*Rumex acetosa*), daisy (*Bellis perennis*), self-heal (*Prunella vulgaris*) and field forget-me-not (*Myosotis arvensis*) occur rarely. A very small area of pignut (*Conopodium majus*) (approximately 5 plants) was recorded in the south-eastern corner of field **F1**.
- 3.27 Fields **F2** and **F3** are largely similar in character to field **F1**, though crested dog's-tail is more abundant with less Yorkshire fog. These fields appear to have been subject to more grazing with a shorter sward evident. Field **F2** is heavily disturbed by machinery there is a large area of bare ground to the west.
- 3.28 Field **F4** is different in character and contains a large area that appears to have been subject to relatively recent ground disturbance, and this is confirmed by Google Earth aerial images showing it be largely clear of vegetation in 2016. The ground in this section is uneven and the vegetation is patchy; this field is not grazed. This section of the field is dominated by rough meadow-grass and Yorkshire fog, with locally abundant sweet vernal-grass and perennial rye-grass; creeping bent and Timothy (*Phleum pratense*) are occasional, with rare meadow fox-tail and crested dog's-tail. Soft rush is occasional, though locally abundant in patches. Forbs are low in diversity and occurrence, with creeping buttercup and broadleaved dock (*Rumex obtusifolius*) being occasional. Hop trefoil (*Trifolium campestre*) is locally abundant. Rarely occurring forbs include redshank (*Persicaria maculosa*), common mouse-ear, red clover (*Trifolium pratense*), white clover, bird's foot-trefoil (*Lotus corniculatus*), lesser spearwort, willowherb species (*Epilobium* sp.) and smooth sow-thistle (*Sonchus oleraceus*).

### **Semi-Improved Neutral Grassland**

- 3.29 There is a smaller sloped section to the east of offsite field **F4** that contains an area of less disturbed ground comprising wet semi-improved grassland interspersed by marshy grassland (see below). This area is dominated by sweet vernal-grass. Rough meadow-grass is frequent along with occasional creeping bent. Timothy and cock's-foot occur rarely. Soft rush is locally abundant, with rarely occurring sharp flowered-rush and

compact rush. Oval sedge occurs rarely, and field horsetail is occasional. Forb diversity is again low, with occasional red clover, silverweed (*Potentilla anserina*) and creeping buttercup, and rarely occurring creeping cinquefoil (*Potentilla reptans*), marsh bedstraw (*Galium palustre*), marsh thistle (*Cirsium palustre*) and ribwort plantain.

### **Marshy Grassland**

- 3.30 Marshy grassland occurs on the eastern slope of field **F4** which is dominated by soft rush; compact rush and sharp-flowered rush also occur rarely. Yorkshire fog is abundant, with locally abundant sweet vernal-grass. Creeping bent and rough meadow-grass are occasional and crested dog's-tail occurs rarely; hairy sedge (*Carex hirta*) and floating sweet-grass also occur rarely. Forbs are scarce, with greater bird's-foot trefoil (*Lotus pedunculatus*), marsh thistle, marsh bedstraw and meadow vetchling (*Lathyrus pratensis*) occurring rarely.

### **Bracken**

- 3.31 Small areas of dense bracken occur around the edge of offsite field **F4**.

### **Tall Ruderal Vegetation**

- 3.32 There are isolated areas of ruderal vegetation around the Application Site, with the most notable being in an area of disturbed ground/discarded rubbish in offsite field **F3**. Species include green alkanet (*Pentaglottis sempervirens*) and nettle, with abundant Yorkshire fog. Other species noted include creeping thistle (*Cirsium arvense*), field bindweed (*Convolvulus arvensis*), hoary willowherb (*Epilobium parviflorum*), bramble, marsh thistle and soft rush.

### **Buildings**

- 3.33 There are no buildings as such on the Application Site, though there is a small timber shed with a sheet metal roof and sheet bitumen layered walls to the south of offsite field **F3**. There are also caravans, abandoned cars and other machinery in this area.

### **Summary of Habitat Types**

- 3.34 A summary and qualitative assessment of those habitats assessed on and immediately adjacent to the Application Site is provided in **Table EDP 3.4**.

**Table EDP 3.4:** Summary of habitats within, or adjacent to, the Application Site.

Habitat or feature	Distribution within Application Site	Intrinsic ecological importance
Broadleaved Woodland W1 (off-site)	Not within Application Site, but situated to east of field <b>F4</b> .	<b>County value.</b> Although not surveyed in detail due to being situated beyond the Application Site boundary, this woodland provides an important corridor for the Nant Melyn and connects to woodland in the wider landscape. The woodland contains numerous mature trees and a diverse shrub layer.
Broadleaved Woodland W2 (off-site)	Not within Application Site but situated to west of field <b>F3</b> . Potential emergency access road to pass through gate that runs adjacent.	<b>Local value.</b> Despite only a small section being surveyed due to it largely being unaffected by the proposals and beyond the Application Site boundary, this woodland provides a wildlife corridor and connects to woodland in the wider landscape. The woodland contains numerous mature trees. It is therefore considered that the woodland has at least Local ecological value.
Scrub Communities	Throughout, particularly on edges of field <b>F4</b> .	<b>Site value.</b> Limited botanical diversity but provides habitat for a range of fauna including protected species such as nesting birds and possibly reptiles.
Hedgerows H1-H5 (onsite) and H8-H10 (off-site)	Throughout, on field edges.	<b>Local value.</b> All eight hedgerows qualify as 'Important Hedgerows' and are wildlife corridors.
Hedgerows H6 and H7 (onsite)	Bordering the north and west of field <b>F2</b> respectively.	<b>Local value.</b> Although these hedgerows do not qualify as 'Important Hedgerows', they are still species-rich in terms of woody species and are wildlife corridors.
Poor semi-improved grassland	Onsite fields <b>F1</b> & <b>F2</b> ; Offsite fields <b>F3</b> & <b>F4</b> .	<b>Site Value.</b> Relatively low botanical diversity in terms of forbs, though a good range of grasses occur. Provides habitat for foraging fauna such as birds, invertebrates, common mammals and herpatofauna.
Semi improved-grassland (offsite)	Field <b>F4</b> (part).	<b>Site Value.</b> Small area with relatively low botanical diversity in terms of forbs, though a good range of grasses/rushes occur. Provides habitat for foraging fauna such as birds, invertebrates, common mammals and herpatofauna.
Marshy grassland (offsite)	Field <b>F4</b> (part).	<b>Site Value.</b> Interspersed with the semi-improved grassland above. Small area with relatively low botanical diversity in terms of forbs, though a good range of grasses/rushes occur. Provides habitat for foraging fauna such as birds, invertebrates, common mammals and herpatofauna.
Bracken/ruderal habitats (offsite)	Field F3 and F4	<b>Site value.</b> Very small patches with limited botanical diversity or distinctiveness, but likely to provide habitat for a range of fauna.



Habitat or feature	Distribution within Application Site	Intrinsic ecological importance
Buildings (offsite)		<b>Negligible</b> intrinsic value.

- 3.35 As noted within **Table EDP 3.3**, the Application Site primarily comprises habitats of **Site** value in terms of the fields themselves, though the boundary hedgerows have **Local** value with woodland off-site to the east having **County** value given their value as important wildlife corridors.

### Protected and/or Notable species

- 3.36 The likelihood of presence, or confirmed presence, of protected/and or notable wildlife species within the Application Site is summarised below with reference to desk study records, habitat suitability and detailed surveys where relevant. Further details are made available within appendices and plans where referenced.
- 3.37 Where a particular species or taxonomic group has been confirmed to be present, or presence is inferred based on habitat suitability, the ecological value or significance of the population or assemblage is assessed on a geographical scale.

### Breeding Birds

- 3.38 SEWBRc returned numerous records of Priority birds within 4km of the Application Site, representing 17 species as listed in **Table EDP 3.5** below, some of which are listed on Schedule 1 of the Wildlife and Countryside Act 1981. Additionally, several of these species occur on the Birds of Conservation Concern in Wales 3 (BoCCW3) Red and Amber lists.

**Table EDP 3.5:** List of bird species recorded within 4km of the Application Site and afforded protection/conservation status in Wales.

Common name	Scientific name	Status
Barn Owl	<i>Tyto alba</i>	Schedule 1, BoCCW3 Green List
Brambling	<i>Fringilla montifringilla</i>	Schedule 1, BoCCW3 Amber List
Bullfinch	<i>Pyrrhula pyrrhula</i>	BoCCW3 Red List
Crossbill	<i>Loxia curvirostra</i>	Schedule 1, BoCCW3 Green List
Curlew	<i>Numenius arquata</i>	BoCCW3 Red List
Dunnock	<i>Prunella modularis</i>	BoCCW3 Green List
Hawfinch	<i>Coccothraustes coccothraustes</i>	BoCCW3 Amber List
House Sparrow	<i>Passer domesticus</i>	BoCCW3 Amber List
Lapwing	<i>Vanellus vanellus</i>	BoCCW3 Red List
Lesser Redpoll	<i>Carduelis cabaret</i>	BoCCW3 Amber List
Redwing	<i>Turdus iliacus</i>	Schedule 1, BoCCW3 Amber List
Skylark	<i>Alauda arvensis</i>	BoCCW3 Amber List
Song Thrush	<i>Turdus philomelos</i>	BoCCW3 Amber List
Spotted flycatcher	<i>Muscicapa striata</i>	BoCCW3 Red List

Common name	Scientific name	Status
Starling	<i>Sturnus vulgaris</i>	BoCCW3 Red List
Tree Pipit	<i>Anthus trivialis</i>	BoCCW3 Amber List
Wood Warbler	<i>Phylloscopus sibilatrix</i>	BoCCW3 Red List

- 3.39 Records returned by SEWBRc confirm the presence of breeding barn owl within 4km of the Application Site. As a Schedule 1 species, barn owl is afforded additional protection against disturbance whilst nesting. Therefore, it is an offence to intentionally or recklessly disturb barn owls at an active nest site with eggs or young or before eggs are laid, or to disturb the dependent young.
- 3.40 The surveys undertaken by PCE in 2009 and 2010 recorded a total of 27 bird species, though no specific breeding bird surveys were undertaken. These surveys included fields to the south of the Application Site which have now been developed into a housing estate, as well as a large section of the Nant Melyn woodland corridor; species included song thrush, starling and house sparrow. Six common and widespread species were recorded during the DCE extended phase 1 survey of the fields to the south of the Application Site in 2015, comprising carrion crow, blackbird, swallow, wood pigeon, robin and blue tit (no breeding bird survey was undertaken).
- 3.41 A small number of relatively common and widespread bird species were recorded within or flying over the Application Site during the current surveys, though no specific breeding bird surveys have been undertaken. Species recorded comprised house martin, wood pigeon, carrion crow, coal tit, blue tit and robin.
- 3.42 The hedgerows, woodland and scrub habitats within or adjacent to the Application Site have value for a range of nesting and foraging birds. The majority of the grassland habitat is likely to be too disturbed or grazed to have any significant value for ground-nesting species, though the marshy grassland bank to the east of the Application Site could potentially be used.
- 3.43 The Application Site is considered to be of **Site Level** importance with respect to its potential to support common and widespread bird species, with the off-site woodland W1 likely to have at least **Local** value for nesting birds.

### **Bats**

- 3.44 SEWBRc returned 11 Annex II bat records within 6km of the Application Site. The records comprise two bat species: greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*). The closest record is for a greater horseshoe bat approximately 2.5km south west of the Application Site. Of particular pertinence is a record of a confirmed lesser horseshoe bat night roost 7.9km south-east of the Application Site. Additionally, SEWBRc returned a record for a probable lesser horseshoe bat roost, indicated by the presence of droppings, in a stable approximately 5km south of the Application Site.

- 3.45 With respect to non-Annex II bat species, SEWBRc returned multiple records of unidentified myotis species, common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*) and a single record for a whiskered bat (*Myotis mystacinus*) within 2km of the Application Site.

#### *Bat Roosting - Trees*

- 4.47 A number of trees within the Application site or immediately on the site boundary are considered to have bat roost potential. Individual trees within the main woodland parcels beyond the boundary of the Application Site were not inspected in detail and are therefore grouped accordingly in terms of general features, maturity, etc. Full details of the ground level tree inspections are provided within **Appendix EDP 4**. The locations of these trees are shown in **Plan EDP 1**.
- 4.48 One mature oak, **T28**, was assessed as having high bat roost potential. This tree is situated on the northern boundary of field **F4**. This assessment is based on the presence of a large cavity on the southern elevation of the main stem, as well as a cavity on a branch on the southern elevation, a basal cavity and broken branches.
- 4.49 Seven trees were assessed as having moderate bat roost potential, comprising: **T2, T6, T7, T8, T11, T13** and **T19** all of which are on the boundary of field **F1**. These trees contain a range of cavities, and crevices such as knot holes, broken branches, etc that could potentially be used as bat roosts.
- 4.50 Twenty-three trees were assessed as having low bat roost potential. These trees have limited potential, but have some features that could not be ruled out for bat roost potential entirely; such features include thick ivy, shallow knot holes, shallow cavities in broken branches, etc.
- 4.51 Woodland W1 mainly contains trees with negligible to low bat roost potential, though there are a small number of larger oaks with cavities, knot holes, etc which elevate their potential to at least moderate.

#### *Bat Roosting Assessment: Buildings*

- 3.52 There is a small timber shed structure to the south of field **F3**. This shed has a corrugated metal roof and bitumen covered timber walls. It is very exposed to the elements and has negligible bat roost potential.

#### *Bat Activity: Manual Transect Surveys*

- 3.53 Bat foraging and commuting activity recorded during each of the surveys undertaken in July, August and September 2018 are detailed within **Appendix EDP 5**. A summary of the results is presented in **Table EDP 3.6**.

**Table EDP 3.6:** Approximate levels of bat activity recorded by surveyors on and adjacent to the Site.

Bat species	Approximate number of individuals recorded across transects surveyed				Relative abundance; associated feature(s)
	July dusk	Aug dusk	Sep dusk	Total	
Common pipistrelle	Max 23	Max 21	Max 21	<b>65</b>	Dominant; relatively widespread throughout the Application Site and associated with boundary features.
Soprano pipistrelle	Max 10	Max 14	Max 21	<b>45</b>	Relatively widespread throughout the Application Site and associated with boundary features.
Myotis spp.	Max 1	0	0	<b>1</b>	Rarely encountered.
<b>Total</b>	34	35	42	<b>111</b>	

- 3.54 A total of 3 bat species were recorded during the manual transect surveys comprising common pipistrelle, soprano pipistrelle, and Myotid bat species.
- 3.55 The vast majority of bat activity recorded was attributed to common pipistrelle (56%) bats, with a smaller proportion (40%) of soprano pipistrelle. One myotid bat pass was also recorded.
- 3.56 Bat activity was primarily associated with boundary features, with the majority of activity being foraging common pipistrelle. Common pipistrelle was recorded relatively soon after sunset during the surveys, suggesting the presence of a roost relatively nearby.
- 3.57 Overall; however, levels of bat activity were considered to be relatively low and typical of a small site comprising grassland, hedgerow, tree and scrub habitats.

*Bat Activity – Automated, Static Detector Survey*

- 3.58 Results of the automated detector surveys completed in August and September 2017 are detailed within **Appendix EDP 6**. A summary of the results is presented in **Table EDP 3.7**.

**Table EDP 3.7** Approximate levels of bat activity recorded by automated static detectors deployed onsite for five consecutive nights in August and September 2017

Bat Species	Month Deployed per Automated Detector			Total	% of Total
	July 1/2	Aug 1/2	Sep1/2		
Common pipistrelle	301/2759	101/613	313/917	715/4289	59/73
Soprano pipistrelle	159/480	67/125	165/690	391/1295	32.5/22
Myotis sp.	30/40	30/211	21/44	81/295	7/4.5
Long-eared bat	2/1	6/3	0/5	8/9	0.8/0.2
Lesser horseshoe	0/1	1/0	4/2	5/3	0.5/0.1
Noctule	0/1	2/2	0/4	2/7	0.1/0.1

Bat	Month Deployed per Automated Detector			Total	% of Total
Serotine	0/0	1/0	1/1	2/1	0.1/0.1
<b>Total</b>	492/ 3,282	208/954	504/ 1663	1204/5899	

- 3.59 A total of seven bat species/groups were recorded by the automated detector deployed on site. Bat activity recorded by the automated detectors was dominated by common pipistrelle bats, totalling approximately 59-73% of all calls registered.
- 3.60 Soprano pipistrelle and Myotis bat species otherwise accounted for the remaining activity (22-33% and 5-7% of the total calls respectively).

*Evaluation*

- 3.61 Common pipistrelle bats are common and widespread across the UK, representing the most abundant species in the UK respectively. Whilst having suffered significant historic declines, national population monitoring<sup>9</sup> indicates that their populations increased since 1999. Common pipistrelle bat was the most frequently recorded species onsite during the detailed bat surveys. Common pipistrelle bats utilising the Site are therefore not considered to be significant beyond a **Site context**.
- 3.62 Soprano pipistrelle bat species are widespread across the UK, representing the second most abundant species. Whilst this species has suffered significant historic declines, population monitoring<sup>10</sup> indicates that the species are stable nationally. This species was regularly recorded foraging along the boundaries of the Application Site, being the next most recorded species onsite. Soprano pipistrelle bats utilising the Application Site are therefore not considered to be significant beyond a **Site context**
- 3.63 Myotis bat species occur throughout most of the UK, their populations considered to be either stable or increasing<sup>11</sup>. Individuals of Myotis bats were only rarely recorded onsite. Myotis bats supported by the site are therefore not considered to be significant beyond a **Site context**.
- 3.64 All other bat species recorded during the surveys equate to no greater than 1.5% of all calls registered by automated detectors deployed over the bat active season. As such, long-eared, lesser horseshoe, noctule and serotine bats are not considered to be significant beyond a **Site context**.

**Dormouse**

- 3.65 No records exist for this species within 2km of the site (SEWBRc data, 2018).

<sup>9</sup> Bat Conservation Trust, 2018. The National Bat Monitoring Programme. Annual Report 2017. Bat Conservation Trust, London.  
<sup>10</sup> Bat Conservation Trust, 2018. The National Bat Monitoring Programme. Annual Report 2017. Bat Conservation Trust, London.  
<sup>11</sup> Bat Conservation Trust, 2018. The National Bat Monitoring Programme. Annual Report 2017. Bat Conservation Trust, London.

- 3.66 A dormouse survey was carried out on the majority of the Application Site by PCE in 2011; during this survey, the network of hedges (excluding hedgerows **H6** and **H7**) and the Nant Melyn woodland corridor were surveyed for evidence of dormouse and the habitat suitability was assessed. No evidence of dormouse was recorded. PCE assessed the hedgerows/margins of the site as being sub-optimal for dormouse, due to the regular flailing and generally heavily grazed hedge bottoms limiting foraging potential. PCE concluded that dormouse is unlikely to be on the site. The update habitat survey by DCE in 2015 of the fields to the south of the current Application Site was in general agreement with the PCE survey and no further dormouse surveys were undertaken, though a search for evidence of dormouse-nibbled hazel nuts was made. These southern fields are now built out, or currently being developed, with several of the hedgerows forming the garden boundaries.
- 3.67 The current survey is in general agreement with that of previous surveys, given that the site remains largely unchanged since these surveys. Some of the boundary hedgerows have connectivity to the surrounding landscape, though they are generally quite gappy with gate access, etc. and grazed at the base likely making them sub-optimal for dormouse; several of the hedgerows also now back onto gardens and are subject to disturbance. Woodland **W1** is likely to have more potential, given its scrubby understorey, but this is beyond the Application Site and there are no directly connecting hedgerows within the actual Application Site; this woodland was surveyed in 2011, with no evidence of dormouse being recorded. Given the previous survey results and lack of records within 2km, the likelihood of dormouse occurring within the Application Site is considered low. While dormouse could potentially occur in the wider woodland along the Nant Melyn, their presence within the Application Site is considered unlikely.

#### **Otter and Water Vole**

- 3.68 SEWBRc returned three records relating to otter (*Lutra lutra*). The closest of which is a record of otter spraint approximately 2.3km east of the Application Site. The remaining two records relate to sightings of otter footprints and runs approximately 2.7km south-east of the Application Site.
- 3.69 The Nant Melyn is approximately 100m from the eastern boundary of the Application Site and approximately 60m from any proposed ground works. A 200m section of the Nant Melyn was surveyed by PCE in 2011, and subsequently by DCE in 2015. No evidence of otter was recorded, though both reports acknowledge that the Nant Melyn could potentially be used by commuting or foraging otter. The current 2018 survey is in agreement with this, though given the distance from the Application Site, this species is highly unlikely to pose any constraint to development.
- 3.70 No water vole (*Arvicola amphibius*) records were returned by SEWBRc and no records are known within the vicinity. There is no suitable habitat for this species within or adjacent to the Application Site and no further consideration is given to this species within the remainder of this report.

### **Badger**

- 3.71 There are two records relating to badger (*Meles meles*) signs (latrine and footprints) approximately 2.7km south-east of the Application Site.
- 3.72 PCE undertook a badger survey of part of the Application Site and surrounding area (including part of woodland **W1**) in 2009, 2010 and 2011, while DCE undertook a search for badger evidence of the field and hedgerows to the south of the Application Site. During these surveys, no evidence of badger was recorded, though it was acknowledged that undetected setts could be present within dense vegetation.
- 3.73 The current survey found no evidence of badger within, or in close proximity to the Application Site. There are areas of dense scrub within the survey area, such as to the north-east of field **F4**, which could not be inspected in detail and could potentially contain setts, though no evidence (such as latrines or tracks) was recorded in the vicinity. The Nant Melyn woodland corridor also has potential for resident badger, and although no evidence of badger was recorded, only a cursory inspection was made due to the distance from any proposed ground works or development. All of the habitats on the site are suitable for foraging badger, however no evidence of this was found.

### **Other Mammals**

- 3.74 SEWBRc returned several records of West European Hedgehog (*Erinaceus europaeus*). The closest of which is for a sighting of an individual approximately 0.45km south-west of the Application Site.
- 3.75 In addition, SEWBRc returned an individual record for a stoat (*Mustela erminea*) located approximately 0.5km south-west of the Application Site.
- 3.76 The DCE report highlights a record of a brown hare (*Lepus europaeus*), a Section 7 species, approximately 1km to the south-west of the Application Site; it is possible that brown hare use the Application Site, though there is no evidence to date.
- 3.77 The Application Site could potentially be used by the Section 7 listed hedgehog, as well as by foraging or resident species such as fox, mole, rabbit, voles and shrews.

### **Amphibians/Great Crested Newt**

- 3.78 There are no records for the presence of great crested newt (*Triturus cristatus*) within 2km of the Application Site.
- 3.79 Likewise, no records exist for smooth newt (*Lissotriton vulgaris*) within 2km of the Application Site. There are; however, several records of palmate newt (*Lissotriton helveticus*) occurring within 2km of the Application Site. The closest record is of two adult males located approximately 0.7km south-west of the Application Site.

- 3.80 SEWBRc returned multiple records for common toad and common frog within 2km of the Application Site. The closest records of which are located approximately 0.6km south-west and 0.7km south-west of the Application Site, respectively.
- 3.81 There are no ponds within the Application Site, and the ditches were dry and therefore unsuitable for breeding during the 2018 survey, though it is acknowledged that 2018 spring was exceptionally dry, and the ditches may contain water earlier in the year or during rainfall. The ditches of the fields to the south (which include the ditch on the southern boundary of the current Application Site, adjacent to hedgerow **H2**) were also dry during the DCE 2015 surveys (undertaken in early May 2015). The PCE 2010 reported stated that there is no suitable breeding habitat for amphibians on the site surveyed, which included a portion of the current Application Site. It is considered unlikely that amphibians breed within the Application site, especially in consideration of great crested newt.
- 3.82 Further afield, the Ordnance Survey map reveals that there is one pond within agricultural grassland approximately 550m to the south-east of the Application Site. This pond was not inspected during the field survey, nor was it inspected in previous ecological surveys; the Nant Melyn flows between the Application Site and the pond, which is considered likely to act as a significant barrier to amphibian migration. There are several other ponds within 1km to the south-west, but there are a number of streets, roads (including the A4119) and the Ely River between these and the site.
- 3.83 Whilst common amphibians may use the site for foraging purposes, given the lack of records, distance and physical barriers between existing ponds within 1km, the presence of great crested newt within the Application Site is considered unlikely.

### **Reptiles**

- 3.84 Four native reptile species occur in South Wales, comprising common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix Helvetica*). SEWBRc returned numerous records of common lizard within 2km of the Application Site. The closest of which is for a juvenile common lizard located approximately 0.5km south-west of the Application Site.
- 3.85 None of the remaining three reptile species native to South Wales have been recorded within 2km of the Application Site.
- 3.86 No reptile surveys have previously been undertaken on the Application Site, and none have been undertaken in 2018 given that the majority of the Application Site is grazed and disturbed, offering little value for reptiles. The small area of semi-improved/marshy grassland to the east of field **F4** offers more potential (though this will be retained) for reptile occupation; however, along with the bases of the hedgerows and scrub edges.



### **Invertebrates**

- 3.87 There are a number of records of the rare and European protected species, marsh fritillary butterfly (*Euphydryas aurinia*) associated with the Rhos Tonyrefail SSSI, the closest tip of which lies approximately 200m to the north of the Application Site, with the closest recent record of this species being of three larval webs approximately 1.5km to the north in 2009. The DCE report highlights a closer historical record from 2006, approximately 500m to the north of the Application Site.
- 3.88 The Application Site itself is considered largely unsuitable to support a breeding population of marsh fritillary. The majority of grassland is grazed, uniform and relatively dry, without any mosaics of shorter and tussocky grasses. Although there is a small area of marshy grassland beyond the eastern boundary of the Application Site, the larval foodplant of marsh fritillary devil's bit scabious (*Succisa pratensis*) was not recorded despite a thorough search being undertaken. Given that marsh fritillary dispersal is inhibited by physical barriers such as tall hedgerows, rivers, roads, etc, it is considered very unlikely that the Application Site supports a breeding population of this species.
- 3.89 There are also records of small pearl-bordered fritillary (*Boloria selene*), a Section-7 listed species, within 2km to the north. The Application Site is considered unsuitable for this species given that it is typically found in woodland clearings, sheltered damp grasslands and moorland/heathland with an abundance of violet species. There are also records of brown-banded carder-bee (*Bombus humilis*) within 2km, though the Application Site is considered unlikely to have any significance for this species given its preference for flower-rich grassland.
- 3.90 No notable invertebrates recorded during the present survey, though the site is likely to support a range of common widespread invertebrate species.

### **Notable Plants**

- 3.91 SEWBRc returned numerous records of bluebell (*Hyacinthoides non-scripta*), including several records of the plant utilising the hedgerow network within the Application Site (verified by the current survey). In addition, the endangered annual knawel (*Scleranthus annuus subsp. Annuus*), has been recorded approximately 1.7km north of the Application Site.
- 3.92 A small amount of Himalayan balsam, an invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981)<sup>12</sup>, is present along the off-site woodland to the south of Field **F3**.

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<sup>12</sup> 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 roots and disturbing surrounding soil if not correctly managed.

### Summary of Key Issues Arising from Survey Findings

3.93 Based on the survey findings described above, the key ecological features/receptors pertinent to the development proposals of the Application Site are listed within **Table EDP 3.8**.

**Table EDP 3.8:** Key ecological features pertinent to the development proposals of the Application Site.

Receptor	Key Attributes	Nature Conservation Value
<b>Statutory and Non-Statutory Sites</b>		
Rhos Tonyrefail SSSI	A network of seven groups of fields scattered around Tonyrefail. Large lowland site of special interest for its marshy grassland, acid flush, species-rich neutral grassland, acid grassland, wet heath and blanket mire. Also of interest for its population of marsh fritillary butterfly ( <i>Euphydryas aurinia</i> ).	National
<b>Habitats</b>		
Off-site broadleaved woodland ( <b>W1</b> and <b>W2</b> )	Provides important wildlife corridors connecting to the wider landscape. Contains numerous mature trees.	Local-County
Hedgerows	Eight hedgerows qualify as 'Important Hedgerows', with remaining two also being species-rich in terms of woody species. Wildlife corridors.	Local
Scrub	Limited botanical diversity, but provides habitat for a range of fauna including protected species such as nesting birds and possibly reptiles.	Site
Poor semi-improved/semi-improved grassland	Relatively low botanical diversity in terms of forbs, though a good range of grasses occur. Provides habitat for foraging fauna such as birds, invertebrates, common mammals and herptiles.	Site
Marshy grassland (offsite)	Interspersed with the semi-improved grassland above. Small area with relatively low botanical diversity in terms of forbs, though a good range of grasses/rushes occur. Provides habitat for foraging fauna such as birds, invertebrates, common mammals and herptiles.	Site
Ruderal habitats/bracken	Very small patches with limited botanical diversity or distinctiveness, but likely to provide habitat for a range of fauna.	Site

Receptor	Key Attributes	Nature Conservation Value
<b>Fauna</b>		
Bats	Common and widespread species foraging along hedgerows. Several trees with bat roost potential.	European Protected Species: Site
Badger	No setts recorded, but potential in off-site woodlands and dense scrub. Fields have value for foraging and commuting.	Protected by National Legislation: Site.
Breeding birds	Common and widespread species likely to nest within suitable habitats within the Application Site.	Protected by National Legislation: Site.
Reptiles	Hedgerow bases and off-site marshy grassland to the east offer potential.	Protected by National Legislation: Site.
Hedgehog	Habitats forming the peripheries of the Application Site provides suitable cover.	Section 7-listed: Site

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## **Section 4**

### **Details of Proposed Development**

- 4.1 Having reviewed the baseline conditions, this section of the Ecological Appraisal provides pertinent details of the proposed development, in particular those aspects which have potential implications for the ecological features/receptors identified in **Section 3**. Where relevant, reference is made to the influence that ecological considerations have had in the scheme's design and any inherent mitigation which avoids or reduces the severity of potential ecological impacts.

#### **Development Proposals**

- 4.2 The scheme comprises the construction of 76 new dwellings with associated infrastructure and landscaping, incorporating the retention of much of the existing hedgerows and mature trees. The proposals are illustrated at **Appendix EDP 1**.

#### **Proposed Habitat Loss**

- 4.3 Primary access to the Application Site is to be accommodated via the southern boundary of field **F2**, from the adjacent development of The Meadows (currently under construction). Whilst no vegetation loss is anticipated given the absence of a vegetated boundary here, a single break through hedgerow **H1** dividing fields **F1** and **F2**, measuring circa 11m in width, will be required, equating to a loss of circa 33m<sup>2</sup> of hedgerow loss.
- 4.4 Additionally, the provision of an emergency access route from the south eastern corner of field **F2** is proposed, measuring circa 4.5m in width, with minor vegetation loss anticipated.

#### **Proposed Habitat Gain**

##### ***Habitat Retention & Creation***

- 4.5 The vast majority of boundary features onsite, including hedgerows **H2-H7**, are to be retained and further protected through the offsetting of development away from these features and their exclusion from adjacent curtilage boundaries. Additionally, such habitat buffers should be further enhanced through the provision of new tree and shrub planting to further strengthen these resources.
- 4.6 In addition, the vast majority of hedgerow **H1** is to be retained and excluded from curtilage boundaries adjacent, with exception to a single 11m wide break through its central section to facilitate access.

- 4.7 With respect to poor semi-improved grassland comprising fields **F1** and **F2** of limited ecological value, the vast majority will be lost to accommodate the proposed development footprint. However, the north western corner of field **F1** and the south eastern corner of field **F2** are to be retained and designed as public open space. Such areas should be subject to formal landscaping including new tree, shrub and species-rich grassland planting.
- 4.8 EDP has provided input throughout the iterative design process such that the development proposals reflect important measures, suggested by EDP, to avoid, mitigate or compensate for ecological impacts, as well as other measures designed to provide long-term ecological enhancements to ensure that the proposal minimises impacts on biodiversity. Such measures are further detailed within **Section 5** of this appraisal.

## **Section 5**

### **Predicted Impacts and Mitigation**

- 5.1 This section of the Ecological Appraisal considers the likely impacts of the detailed layouts included as **Appendix EDP 1** on the existing ecological resource. Where impacts cannot be avoided by inherent mitigation alone, additional mitigation or enhancement measures are recommended which, if implemented, would as a minimum enable the proposed development to meet legislative and/or planning policy requirements.
- 5.2 Additionally, opportunities for the proposed development to enhance existing features, or provide opportunities for positive ecological gain, in accordance with the principles of Planning Policy Wales (PPW) (Edition 9, November 2016) and Technical Advice Note 5: Nature Conservation and Planning (TAN5), are identified.

#### **Designated Sites**

##### ***Statutory Designations***

- 5.3 Statutory designations receive legal protection under various international and national legislative instruments. This protection is also reflected in policies included within PPW and TAN5, which are given material consideration during the planning application process.
- 5.4 As described in **Section 3**, Blackmill Woodlands SAC and Cardiff Beach Woods SAC are located 8.3km and 9.9km from the Application Site respectively. Key vulnerabilities regarding these designations primarily relate to increased levels of airborne pollution.
- 5.5 However, given its distance away, and separation from the Application Site, significant adverse effects upon these European Sites are considered unlikely to arise as a result of the redevelopment of the Application Site.
- 5.6 International designations are therefore not considered likely to pose a constraint to the future development of the Application Site, with no further assessment under the Habitat Regulations Act considered necessary.

##### *National Sites*

- 5.7 Four SSSIs are located within 5km of the Application Site, three of which are situated over 3km away such that no impacts upon these designated sites are predicted.
- 5.8 However, Rhos Tonyrefail SSSI is situated circa 200m to the north of the Application Site at its closes point; increased recreational impacts may therefore arise as a result of the development proposals. The provision of adequate alternative public open space onsite is therefore advised.

### **Non-Statutory Designations**

- 5.9 Non-statutory designations do not receive any formal legal protection. However, they do receive planning policy protection, as reflected in TAN5.
- 5.10 At the local level, the RCT LDP (adopted March 2011) includes Policy AW 8 (Protection and Enhancement of the Natural Environment) which requires for natural heritage to be preserved and enhanced by protecting it from inappropriate development, including harm to SINC.
- 5.11 As described in **Section 3**, the River Ely SINC is located circa 450m to the south west of the Application Site, with Nant Melyn, a likely tributary, located circa 100m to the southwest of the Application Site. Given its distance away, no physical disturbance to this SINC is considered likely to arise as a result of the proposals. However a sensitive drainage strategy is advised to ensure no adverse impacts upon Nant Melyn and River Ely SINC further downstream are anticipated.

### **Habitats**

- 5.12 There are several mechanisms through which habitats receive protection without the statutory and non-statutory designated site frameworks. Priority habitats comprise those listed by the Welsh Government as being of key significance to sustain and improve biodiversity in Wales, as defined under Section 7 of Part 1 of the Environment (Wales) Act 2016. Priority Habitats receive protection as identified within policies set out in TAN5.
- 5.13 Additionally, Policy AW 8 of the RCT LDP requires for features of importance to nature conservation, including ecological networks, the quality of natural resources such as air, water and soil, and the natural drainage of surface water, to be preserved and enhanced.
- 5.14 Habitats within and immediately adjacent to the Application Site have been assessed through an Extended Phase 1 survey and further detailed surveys of the hedgerow network. The Application Site predominantly comprises two poor, semi-improved grassland fields of limited ecological value. However, habitats of greater ecological value are supported in the form of boundary features, including hedgerows and mature trees of local level importance.
- 5.15 Habitat losses are minimal however; and confined to a break through hedgerow **H1** to facilitate access, amounting to circa 33m<sup>2</sup> of hedgerow loss, in addition to a further 4.5m wide section of vegetation clearance required to facilitate emergency access at the far south eastern corner of field **F2**. With respect to the existing tree stock, none are proposed for loss, including those considered to have potential to support roosting bats.
- 5.16 The vast majority of boundary features onsite, including hedgerows **H2-H7**, are to be retained; however, and further protected through the offsetting of development away from these features and their exclusion from adjacent curtilage boundaries. Additionally, such habitat buffers should be further enhanced through the provision of new tree and



shrub planting to further strengthen these resources. Overall therefore, it is considered that hedgerow loss can be sufficiently compensated for through replacement planting within habitat buffers and elsewhere onsite. Native species of local provenance, or non-native species considered resilient to climate change, should also be chosen, and should include nectar and pollen rich species.

5.17 Further specifications regarding sensitive working methodologies during the construction phase, detailed planting design, and long-term management and maintenance regimes, should also be incorporated and can be secured by planning obligation, as follows:

- Reasonable avoidance measures and best working practices, to ensure the protection and maintenance of sensitive habitats during the construction phase should be set out within a construction and environmental management plan prepared for the Application Site; and
- New planting and other habitat creation should be provided with a detailed soft landscaping scheme. The landscaping scheme will seek to ensure biodiversity enhancements are incorporated in accordance with local and national planning policy. Measures to ensure successful establishment of new habitats and maintain their value in the long-term should be detailed.

5.18 Taken together, the above recommendations should ensure that no significant detrimental impacts upon those habitats of ecological value supported by the Application Site will arise as a result of the proposals.

### **Protected and/or Notable Species**

5.19 Certain species receive legal protection in the United Kingdom 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.

5.20 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. Such species include those listed by the Welsh Government as being of Principal Importance for the purposes of conserving biological diversity. Local authorities have a duty to have regard to such species under the Environment (Wales) Act. Details of any actual or potential notable species within the site are identified below.

5.21 With respect to planning policy, protected and notable species are also afforded policy protection at a national level by TAN5, which requires planning authorities to ensure that such species are protected from the adverse effects of development.

5.22 Baseline investigations have identified a number of protected species implications for the Application Site, with the hedgerow network potentially supporting a generalist

assemblage of common and widespread bird and bat species during the bird breeding and bat active season. These species/species groups are discussed in turn below.

## **Breeding Birds**

### **Legislation**

- 5.23 All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:
- (i) Intentionally kill, injure or take any wild bird;
  - (ii) Take, damage or destroy the nest of any wild bird while it is in use or being built;
  - (iii) Take, damage or destroy the egg of any wild bird; or
  - (iv) 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.
- 5.24 In addition, further protection is afforded to those wild bird species listed on Schedule 1, 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.
- 5.25 Those habitat retention and enhancement measures detailed above with respect to habitats and bats are incorporated into the illustrative masterplan, and are also considered to ensure the avoidance of impacts upon the local breeding bird assemblage, given their likely association with those hedgerows to be retained.
- 5.26 Nevertheless, given the protection afforded to all breeding birds, their nests, eggs and young, sensitive vegetation clearance required during the pre-construction and construction phases of development should be timed to avoid the main bird breeding season (i.e. March to August inclusive). Should this seasonal constraint prove impracticable, then vegetation clearance outside of this period should only commence following the advice and under supervision of a suitably qualified ecologist. Pre-commencement checks for active nests will be required prior to any vegetation clearance occurring during the main bird breeding season, with appropriate buffers marked out around active nests or nests under construction, until all eggs have hatched and chicks fledged.

## **Bats**

### *Legislation*

- 5.27 All species of British bat are listed as a European Protected Species (EPS) on Schedule 2 of the Conservation Regulations (Annex IV(a) to the Habitats Directive). This affords it

protection under the Conservation of Habitats and Species Regulations 2017, making it an offence to:

- (i) Deliberately capture, injure or kill a wild animal of an EPS; and
- (ii) Deliberately disturb wild animals of a EPS wherever they are occurring, in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to affect significantly 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.

5.28 Additional protection for bats is also afforded under the Wildlife and Countryside Act 1981 (as amended), 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, eight of the eighteen species of bat resident in the UK (greater horseshoe, lesser horseshoe, barbastelle, Bechstein's (*Myotis bechsteinii*), soprano pipistrelle, common pipistrelle, brown long-eared and noctule) are also listed as Priority Species<sup>13</sup>.

#### Roosting Bats

5.29 With respect to trees present within the Application Site, seven trees are considered to have moderate potential to support roosting bats (trees **T2, T6, T7, T8, T11, T13** and **T19**), with a further 12 trees considered to have low potential (trees **T1, T3-T5, T9, T10, T12** and **T14-T18**).

5.30 Whilst none are proposed to be lost to development, should any such trees be proposed for loss in future or be subject to any remedial tree works, then re-inspection should be undertaken of all features identified as having potential to support roosting bats immediately prior to tree works commencing. Re-inspections should be completed by a suitably qualified bat licensed ecologist or arboricultural contractor, in line with the Arboricultural Association's Guidance Note 1.

5.31 Should bat roosts be confirmed within any of the trees during the re-inspections, then it will be necessary to obtain a derogation (European Protected Species) licence from NRW prior to works commencing. The licence will require the inclusion of sensitive working methodologies and appropriate mitigation and enhancement measures, as previously described above. Such measures would include the following:

- Implementation of a 'soft' felling methodology by a suitably qualified arboricultural contractor with experience of working with bats, with the advice or under supervision of a NE bat licence holder, as follows:

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<sup>13</sup> Priority species comprise those listed by the Welsh Government as being of key significance to sustain and improve biodiversity in Wales, as defined under Section 7 of Part 1 of the Environment (Wales) Act 2016, with local authorities having a duty to seek to maintain and enhance biodiversity.

- Felling to avoid cutting through cavities/potential roosting features – i.e. cut above and below the feature when removing sections with suitable features;
  - Lower cut sections to be gently lowered to ground to avoid violent movement of potential roosting features; and
  - Cut sections with potential roosting features to be retained on site for 48 hours, with potential entrances not blocked i.e. facing away from ground, before they are removed or chipped.
- A minimum of 2 woodcrete bat boxes (Schwegler Type 1FF and 2F or similar) per bat tree proposed for loss should be mounted upon suitable mature trees retained adjacent; and
  - Where bat roost features of moderate potential can be feasibly sectioned from trees to be lost and likely retained as intact over the long term, every effort should be made to reinstall such features within close proximity, by attaching to appropriate tree standards within adjacent woodland habitat to be retained.

5.32 More generally, with respect to all trees proposed for retention as part of the development proposals, should tree works such as limb felling, crown reduction, or felling be required in future (and beyond 12 months from this original assessment), either as a result of poor tree health or due to public health and safety concerns, then update bat trees assessments should be undertaken by an NRW bat survey licence holder.

#### Foraging/Commuting Bats

5.33 Walked transect and automated bat activity surveys have confirmed that the Application Site only supports low levels of foraging and commuting activity dominated by common and widespread bat species and is therefore of limited (**Site level**) importance. Habitat features onsite of value to bats are predominantly confined to boundary vegetation comprising hedgerows and mature trees, which are considered to offer suitable foraging and commuting habitat for the local bat assemblage. Given the retention of such features, no significant adverse impacts upon the local bat assemblage is anticipated.

5.34 However, given the known sensitivities of bat species to artificial lighting, it is recommended that a sensitive lighting strategy be implemented across the Application Site. Directional, timed and/or low-lux lighting, together with the use of shields and/or hoods should be incorporated across the development footprint to ensure minimal light spillage upon sensitive boundary habitats. Such measures could be secured through sensitive detailed design and planning conditions/obligations.

5.35 Subject to the implementation of those key mitigation measures detailed above with respect to bats and previously with respect to designated sites and habitats, no significant detrimental impacts upon the foraging/commuting bat assemblage utilising the Application Site are therefore considered likely to arise.

## Summary of Predicted Impacts and Principal Mitigation Measures

- 5.36 The potential impacts on valued ecological features (accounting for inherent mitigation), and recommended additional mitigation measures, in line with legislative and planning policy requirements, are summarised in **Table EDP 5.1**.

**Table EDP 5.1:** Summary of Predicted Ecological Impacts and Proposed Mitigation Measures.

Feature	Potential Impacts	Inherent mitigation	Additional mitigation and/or enhancement
<b>Statutory and Non-Statutory Sites</b>			
Rhos Tonyrefail SSSI	Recreational disturbance impacts following occupation. Pollution during construction and operational phases.	Provision of adequate alternative public open space onsite. Habitat retention and buffering. Sensitive drainage strategy in accordance with local planning policy.	Protection of sensitive habitats during construction through a construction environmental management plan. Development of a sensitive lighting strategy to reduce light spill to sensitive habitats.
<b>Habitats</b>			
Hedgerows, mature trees & scrub	Loss of circa 33m <sup>2</sup> section of <b>H1</b> to facilitate access road (circa 11m wide). Vegetation loss to facilitate emergency access at south eastern corner of field <b>F2</b> (circa 4.5m wide). Potential damage of root protection zones during the construction phase. Disturbance impacts arising from elevated lighting and noise during both the construction and operation phase.	Habitat retention and buffering. New tree and shrub planting proposed across the Application Site.	Protection of sensitive habitats during construction through a construction environmental management plan. Development of a sensitive lighting strategy to reduce light spill to sensitive habitats. Management and maintenance of new planting in line with a detailed landscape strategy.

Feature	Potential Impacts	Inherent mitigation	Additional mitigation and/or enhancement
Poor semi-improved grassland	Grassland fields <b>F1</b> and <b>F2</b> to be predominantly lost to development.	New tree, shrub and grassland planting. Provision of two areas of public open space across the north western extent of <b>F1</b> and south eastern extent of <b>F2</b> .	Management and maintenance of new planting in line with a detailed landscape strategy.
Bats	Disturbance impacts along the river arising from elevated lighting and noise during both the construction and operation phase. Pollution during construction and operational phases.	Habitat retention and buffering. New tree and shrub planting.	Protection of sensitive habitats during construction through a construction environmental management plan and drainage strategy. Development of a sensitive lighting strategy to reduce light spill to sensitive habitats. Management and maintenance of new planting in line with a detailed landscape strategy.
Breeding birds	Killing/injury during the construction phase. Disturbance during both construction and operation. Loss of habitat.	Sensitive vegetation clearance. Habitat retention and buffering. New tree and shrub planting.	Protection during construction through a construction environmental management plan. Management and maintenance of new planting in line with a detailed landscape strategy.

## **Section 6**

### **Summary and Conclusions**

- 6.1 This section of the Ecological Appraisal summarises the Ecology Strategy for the proposed development, in terms of inherent and recommended additional mitigation measures, and then provides the overall conclusions of the appraisal.

#### **Summary of Ecology Strategy**

##### ***Inherent Avoidance, Mitigation and Enhancement Measures Proposed and Further Recommended Detailed Design Measures***

- 6.2 Proposed inherent avoidance, mitigation and enhancement measures incorporated within the development proposals include the following:
- The implementation of a sensitive drainage strategy in accordance with national and local planning policy to ensure no impacts upon the River Taff will arise;
  - The retention and avoidance of hedgerow habitat bounding the peripheries of the Application Site; and
  - The inclusion of new, native tree, shrub and grassland planting, preferably of local provenance, to compensate for the loss of habitats elsewhere.
- 6.3 Additional detailed design measures recommended include:
- The inclusion of a sensitive lighting strategy to minimise light spill upon sensitive habitats adjacent.

#### **Construction Measures**

- 6.4 A construction and environmental management plan should be prepared for the Application Site, to include the following precautionary measures:
- Measures to physically protect retained adjacent habitats. This will include specifications for protective fencing and signage, together with the identification of responsibilities for maintaining this fencing/signage during the demolition and construction period. Valued habitats retained within the development site should be suitably offset by appropriate habitat buffers necessary to ensure root protection areas are fully accommodated and protected through the establishment of Ecological Protection Zones (EPZs);

- Measures to prevent adverse effects upon aquatic features during the preconstruction and construction period, such as with reference to the (now archived) Environment Agency's Pollution Prevention Guidelines, including: 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';
- The location of any work compound(s) and storage areas, including the storage of any fuel, chemicals, plant or machinery, and the use of artificial lighting (including security lighting);
- Species-specific mitigation strategies to ensure the avoidance of harm to wildlife, including breeding birds and bats during the pre-construction and construction phases of the development works;
- Measures regarding newly planted areas, with respect to their locations, establishment and care;
- The monitoring and control of any invasive species recorded for Application Site during the development works; and
- A timetable of all key tasks to be undertaken as part of pre-construction and construction works taking into account all species and habitat sensitivities.

### **Overall Conclusions**

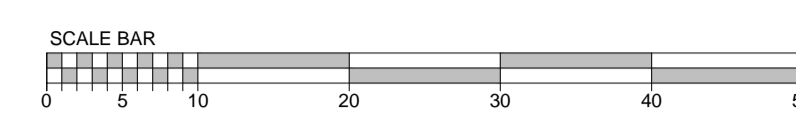
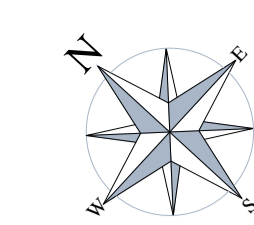
- 6.5 EDP's desk and field-based baseline investigations have demonstrated that the habitats and species present within and around the Application Site do not pose an 'in principle' constraint to the proposed development that is the subject of this appraisal.
- 6.6 However, EDP's surveys have identified valuable habitat features and protected species that will need to be respected and which will require further consideration. With respect to habitats onsite, the Application Site mainly comprises species-poor, semi-improved grassland of limited ecological value. However, boundary features, comprising a mature hedgerow network and mature trees are supported. Such features are considered to be of value to a generalist breeding bird and bat assemblage.
- 6.7 Land take associated with the proposals is considered to have minimal ecological impact however, given that the vast majority of the development footprint is to be predominantly sited across areas of species-poor, semi-improved grassland habitat, avoiding the more ecologically valuable boundary features. However, hedgerow **H1** is to be fragmented to facilitate road access, with a break measuring circa 11m proposed through its central section (equating to circa 33m<sup>2</sup> loss). In addition, a second break through existing vegetation at the south eastern corner of field **F2** is proposed to facilitate an emergency access route.



- 6.8 Accordingly, specific proposals for the avoidance, mitigation and compensation of any predicted impacts have been provided. These measures include: those already embedded within the development proposals; measures recommended for incorporation at the construction stage; those which should be designed and specified within the landscaping scheme; and management measures to ensure that the design vision is achieved in the long term.
- 6.9 Overall therefore, EDP considers that the scheme is capable of compliance with relevant planning policy for the conservation of the natural environment at all levels. Additionally, it is considered that the proposed mitigation and enhancement measures incorporated within the proposed masterplan will enable an overall net gain in biodiversity.

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**Appendix EDP 1**  
**Site Layout (Drawing Number 1796\_TP-01 Rev. B July 2018, Hammond**  
**Architectural Ltd.)**



House Type Schedule					
House Code	Net Floor Area (ft²)	Number of Bedrooms	House Type Name	Number of Units	Total Net Area of Each Unit (ft²)
211	545	1	Ground Floor Flat	3	1635
211	595	1	First Floor Flat	3	1785
CAM	668	2	Camara	6	4008
HY	927	3	Hyatt	3	2781
CAM	668	2	Camara	4	2672
HY	927	3	Hyatt	7	6489
ROCH	927	3	Rochester	10	9270
BU	944	3	Burnaby	8	7552
SH	1192	4	Shelby	12	14304
ROX	1354	4	Roxbury	11	14894
TH	1412	4	Thornbury	9	12708
<b>Total No. of Units on Site &amp; Total Net Area (ft²)</b>				<b>76</b>	<b>78098</b>

- Site Key**
- 1.8m High Close Board Fence
  - 1.8m High Brick Screen Wall
  - 1.8m Timber Gate
  - 1.2m High Post & Three Rail Fence
  - Bin collection Point
  - Private parking space
  - Proposed Trees & Planting (refer to landscape architects information)
  - Existing Trees & Hedgerows
  - Existing Hedgerow Removed
- Affordable Units**
- Affordable Rent Units (6 units)
  - Low Cost Home Ownership Units (9 Units)



REV.	DESCRIPTION	DATE
B	Affordable 211 units revised.	05.09.18
A	Plots 15/16 swapped with plots 17/18 to avoid existing trees. Plots 17 & 18 brought forward slightly. Proposed planting levels added.	24.08.18

CLIENT  
**Lewis Homes**

JOB TITLE  
**Woodlands Green**

DRAWING TITLE  
**Site Layout**

SCALE @ A1	DATE	DRAWN BY
1:500	July '18	RW
JOB NO.	DRAWING NO.	REVISION
1796	TP-01	B

10 Gold Tops  
Newport  
NP20 4PH

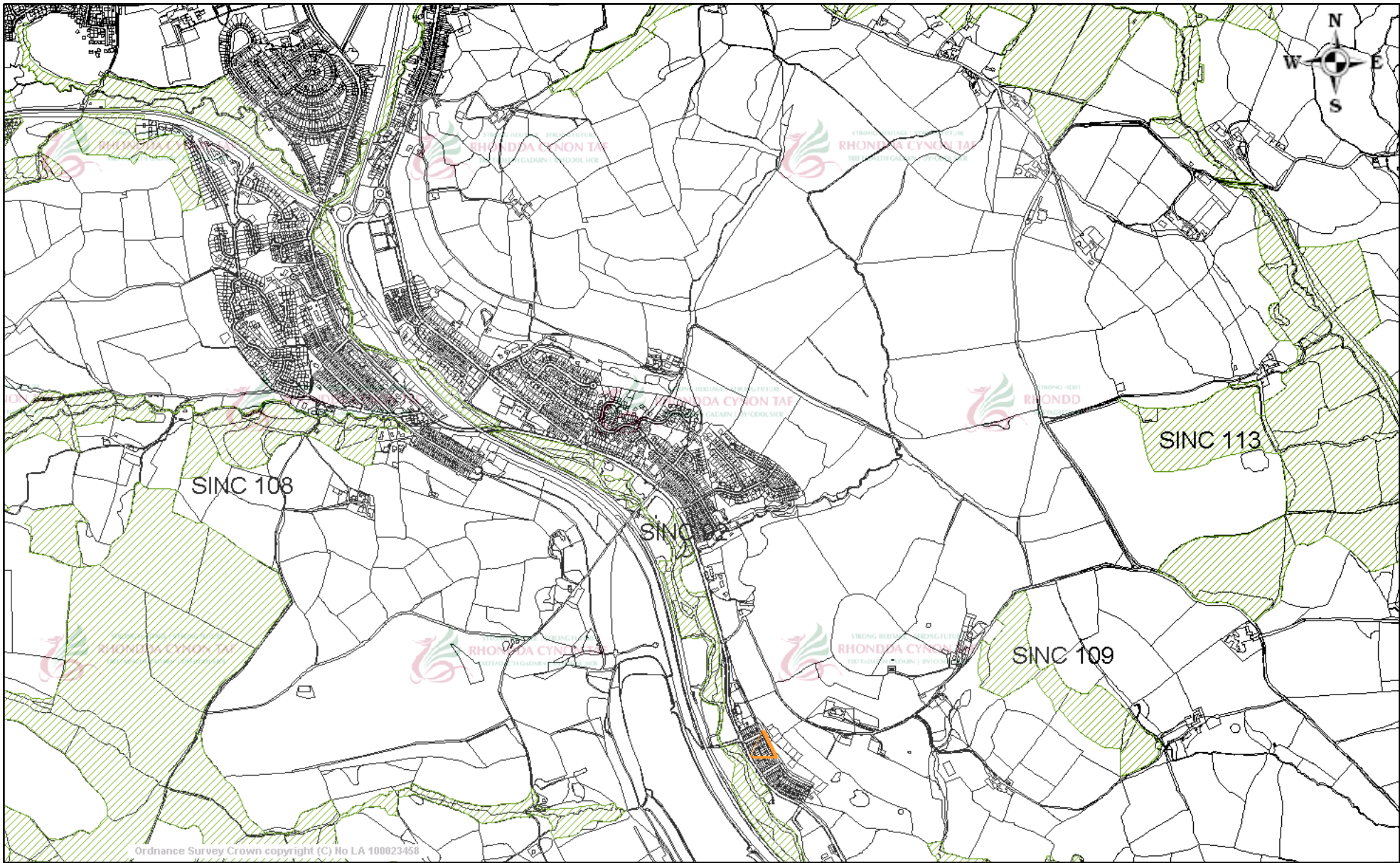
t. 01633 844970  
e. info@hammond-ltd.co.uk

[www.hammond-ltd.co.uk](http://www.hammond-ltd.co.uk)

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Figured dimensions must be taken in preference to scaled dimensions and any discrepancies are to be referred to Hammond Architectural Ltd. Contractors, subcontractors and suppliers must verify all dimensions on site before commencing any work or making any workshop drawings.

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## **Appendix EDP 2 Designated Sites**



Tonyreail (south) SINC

Scale 1/15583

Centre = 301721 E 186754 N

Date 11/6/2015

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## Appendix EDP 3 Hedgerow Regulations Assessment

Hedgerow ID	1	2		3	4		5	
Hedgerow length	54m	127m		58m	153m		195m	
Adjacent to PROW? (Y/N)	N	N		N	N		Y	
Side Surveyed? (N, S, E, W)	E/W	N/S		E	E/W		N/S	
Average height x width (metres)	2 x 3	15m x 2m		15 x 2m	15 x 2m		15 x 2m	
Hedgerow Description (hedgerow with trees, hedgerow, line of trees + features e.g. trimmed, leggy, coppiced, dense, defunct)	Flailed and well managed. Relatively dense. Gaps on north and south. On raised bank.	Unmanaged hedgerow with mostly young trees. Unmanaged. Gappy. Backs onto gardens. Runs along dry ditch.		Unmanaged hedgerow with mature trees. Gappy. Along dry ditch. Backs onto gardens.	Unmanaged hedgerow with mature trees. Along wire fence line.		Unmanaged hedgerow with mature trees. Gappy. Along dry ditch and wire fence line.	
Schedule 3 woody species (don't include sycamore, h. or s. chestnut)	Hazel Holly Dog rose Blackthorn Pedunculate oak Downy birch Rowan	Ash Holly Hazel Grey willow Blackthorn Pedunculate oak Silver birch	Ash Holly Hazel Grey willow Blackthorn Pedunculate oak Gorse	Pedunculate oak Dog rose Rowan Hazel Hawthorn Holly	Pedunculate oak Silver birch Holly Hawthorn Blackthorn Hazel Rowan Dog rose	Pedunculate oak Holly Hawthorn Blackthorn Hazel	Pedunculate oak Holly Hawthorn Silver birch Rowan Hazel Elder	Pedunculate oak Holly Hawthorn Rowan Hazel Elder Rose sp.
Mean No. Sch. 3	7	7		6	6.5		7	
Schedule 2 woodland species + number recorded	Enchanter's nightshade (1)	Bluebell, broad buckler fern (2)		Bluebell, broad buckler fern, dog violet sp, hard fern (4)	Enchanter's nightshade, wood sorrel, hard fern, bluebell, broad buckler fern, male fern (6)		Enchanter's nightshade, bluebell, broad buckler fern, male fern (4)	
Other ground flora	Cleavers, creeping	Soft rush, honeysuckle,		Bramble, bracken, ivy,	Hard rush, bracken,		Nettle, bracken, cock's-	

Hedgerow ID	1	2	3	4	5
species present	buttercup, bramble, bracken, ivy, foxglove, germander speedwell	cleavers, bracken, foxglove, sweet vernal grass, ivy, common bent, creeping bent, bramble.	common bent,	bramble, creeping jenny, foxglove,	foot, honeysuckle, ivy
Bl. pop. (Pn), w. service-tree (St), I-I lime (Tp) or s-I lime (Tc)?	No	No	No	No	No
Bank/wall > 50% of hedgerow?	Yes - all on bank	No	No	No	No
Ditch > 50% of hedgerow?	No	Yes - dry	Yes - dry	No	Yes
<10% Gaps?	Yes	No - very gappy	No - very gappy	Yes	No
At least one standard tree per 50 of hedgerow? (How many?)	No	Yes - 5	Yes - 5	Yes - 5	Yes - 5
Parallel hedge within 10m (Y/N)	No	N	N	N	Y
Protected/red data book species?	Possible reptiles/nesting birds	Possible reptiles/nesting birds/bats	Possible reptiles/nesting birds/bats	Possible reptiles/nesting birds/bats	Possible reptiles/nesting birds/bats
Hedgerow connections Score (1 point for each hedgerow, 2 points for ponds and hedgerows)	2	2	1	3	2
<b>Important?</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>

Hedgerow ID	6	7	8	9	10
Hedgerow length	150m	85m	185m	40m	67m
Adjacent to PROW? (Y/N)	Y	N	N	N	Y
Side Surveyed? (N,	N/S	E/W	N/S	N/S	N/S

Hedgerow ID	6		7	8		9	10
S, E, W)							
Average height x width (metres)	10 x 2m		2 x 2m	2 x 2m		15 x 2m	20 x 3 m
Hedgerow Description (hedgerow with trees, hedgerow, line of trees + features eg trimmed, leggy, coppiced, dense, defunct)	Very gappy tree line, defunct. Evidence of recent tree removal. Unmanaged otherwise.		Flailed with numerous gaps. Heavily managed.	Intact managed (flailed). On a bank. Dominated by hazel		Short gappy tree line. Some mature trees Unmanaged. Along dry ditch	Mature tree line with gaps. Unmanaged. Along dry ditch.
Schedule 3 woody species (don't include sycamore, h. or s. chestnut)	Grey willow Holly Pedunculate oak Rowan Hawthorn Gorse	Hazel Pedunculate oak Rowan Hawthorn Rose	Hazel Holly Ash Blackthorn Pedunculate oak Rowan	Hazel Holly Hawthorn Ash Dog rose	Hazel Holly Hawthorn Ash Dog rose	Hazel Pedunculate oak Hawthorn Holly Silver birch Blackthorn Ash	Silver birch Hazel Holly Pedunculate oak Rowan Crab apple
Mean No. Sch. 3	5.5		6	5		7	6
Schedule 2 woodland species + number recorded	Herb robert, enchanter's nightshade (2)		Bluebell (1)	Wood sorrel, enchanter's nightshade, herb robert, bluebell, barren strawberry, bluebell (6)		Enchanter's nightshade	Enchanter's nightshade, hard fern, lady fern (3)
Other ground flora species present	Bracken, foxglove, germander speedwell, nettle		Ivy, nettle, cleavers, foxglove	Bracken, creeping buttercup, cleavers, nettle, foxglove, cock's-foot, red campion, bramble		Bramble, bracken, ivy, common bent, tutsan, ragwort	Bramble, bracken, common bent, ivy, sweet vernal-grass, Yorkshire fog, meadow buttercup, cock's-foot
Bl. pop. (Pn), w. service-tree (St), I-I lime (Tp) or s-I lime (Tc)?	No		No	No		No	No
Bank/wall > 50% of hedgerow?	No		No	Yes - on a bank		No	No
Ditch > 50% of	No		No	No		Yes - dry	Yes - dry

<b>Hedgerow ID</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
hedgerow?					
<10% Gaps?	No	No	No	No	No
At least one standard tree per 50 of hedgerow? )	Y - 2	No	No	Yes - 7	Yes - 7
Parallel hedge within 10m	No	No	No	No	Yes
Protected/red data book species?	Possible reptiles/nesting birds	Possible reptiles/nesting birds	Possible reptiles/nesting birds	Possible reptiles/nesting birds/bats	Possible reptiles/nesting birds/bats
Hedgerow connections Score (1 point for each hedgerow, 2 points for ponds and woodland)	2	2	4	1	3
<b>Important?</b>	<b>N</b>	<b>N</b>	<b>Y</b>	<b>Y</b>	<b>Y</b>

## **Appendix EDP 4 Bat Tree Survey Results**

Tree number/group	Species	Description and Potential Roost Features	Evidence of bats	Roost Potential
T1	Oak	Approximately 30cm DBH. Rot on low (possibly dead) stem branch forming cavity. Relatively exposed.	Nil	Low
T2	Oak	Approximately 50cm DBH. Bat box installed on eastern elevation of main stem.	Nil	Moderate
T3	Oak	Approximately 60cm DBH. Knot hole on southern elevation of main stem.	Nil	Low
T4	Oak	Twin stem, approximately 60cm/40cm DBH. Possible cavity on western elevation o broken branch.	Nil	Low
T5	Oak	Approximately 80cm DBH. Broken branch with possible cavity on eastern elevation.	Nil	Low
T6	Oak	Approximately 100cm DBH. Big knot hole on northern elevation. Other smaller cavities also.	Nil	Moderate
T7	Oak	Approximately 60cm DBH. Large basal cavity.	Nil	Moderate
T8	Oak	Approximately 60cm DBH. Knot holes om western elevation of main stem.	Nil	Moderate
T9	Oak	Approximately 40cm DBH. Thick ivy cover.	Nil	Low
T10	Oak	Twin stem, approximately 50cm/20cm DBH. Stems twisting, with potential upward pointing cavities, though appear shallow.	Nil	Low
T11	Oak	Twin stem, approximately 80cm/40cm DBH. Hole low down on eastern elevation of one stem, Potential cavities on branches of western elevation also. Ivy obscuring view.	Nil	Moderate
T12	Oak	Approximately 80cm DBH. Knot hole on eastern elevation of stem. Shallow cavity where a cut stem has rotten away.	Nil	Low
T13	Oak	Approximately 70cm DBH. Basal cavity on northern elevation of main stem, which is potentially deep.	Nil	Moderate
T14	Oak	Approximately 70cm DBH. Moderate ivy cover.	Nil	Low
T15	Oak	Approximately 50cm DBH. Basal cavity on southern elevation of main stem.	Nil	Low

T16	Oak	Approximately 40cm DBH. Cavity on broken stem.	Nil	Low
T17	Oak	Approximately 40cm DBH. Knot hole on southern elevation of main stem.	Nil	Low
T18	Silver birch	Approximately 50cm DBH. Rugose bark with shallow cavities.	Nil	Low
T19	Silver birch	Multi stem, approximately 40cm-50cm DBH. Cavity low down on southern elevation of stem, thick ivy cover.	Nil	Moderate
T20	Oak	Approximately 60cm DBH. Thick ivy cover.	Nil	Low
T21	Oak	Approximately 70cm DBH. Thick ivy cover.	Nil	Low
T22	Oak	Approximately 60cm DBH. Cavities on southern elevation, look shallow from ground level.	Nil	Low
T23	Ash	Multi stem, approximately 40-50cm DBH. Knot hole, moderate ivy and bird box installed.	Nil	Low
T24	Oak	Approximately 50cm DBH. Knot hole on southern elevation of stem.	Nil	Low
T25	Oak	Approximately 60cm DBH. Moderate ivy cover. Broken branches.	Nil	Low
T26	Ash	Approximately 70cm DBH. Thick ivy cover.	Nil	Low
T27	Oak	Approximately 60cm DBH. Knot holes on branch on southern elevation.	Nil	Low
T28	Oak	Approximately 100cm DBH. Large cavity on southern elevation of main stem, as well as a cavity on a branch on southern elevation. Basal cavity also. Broken branches.	Nil	High
T29	Oak	Twin stemmed, approximately 50cm/40cm DBH. Basal cavity.	Nil	Low
T30	Oak	Approximately 60cm DBH. Broken branch on southern elevation. Bark flaking.	Nil	Low
T31	Oak	Twin stemmed, approximately 80cm/30cm DBH. Basal cavity on western elevation of narrower stem.	Nil	Low
Woodland W1	Oak, alder, hawthorn, ash, holly	Range from young to mature trees. Small number of trees (oak) with broken branches, knot holes, etc.	Nil	Mainly negligible and low, but some moderate

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## Appendix EDP 5 Bat Survey Findings: Walked Transects

**Site:** Woodlands Green, Coedely    **Project Number:** EDP4896    **Date of Transect:** 18/07/2018  
**Start time:** 21:24    **Finish time:** 23:25    **Sunset:** 21:24

### Weather conditions

	Temperature (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort)
<b>Start</b>	16	20	None	1
<b>Mid</b>	15.9	20	None	0
<b>Finish</b>	14.7	5	None	0

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle	1	HNS	21:31	2-3	X				
Common pipistrelle	2	Foraging around canopy	21:34	3			X		
Common pipistrelle	1	HNS	21:53	7-8	X				
Common pipistrelle	1	HNS	21:57	8-9	X				
Common pipistrelle	1	Commuting along treeline	21:58	8-9		X		S	
Common pipistrelle and Soprano pipistrelle	2	Foraging along treeline	22:01	8-9			X		
Soprano pipistrelle	1	HNS	22:07	9	X				
Common pipistrelle	1	HNS	22:10	10	X				
Common pipistrelle	1	Commuting across field north-west to south-east	22:13	10-11		X		NW-SE	
Common pipistrelle and Myotis spp.	2	Common pipistrelle foraging along treeline. Myotis spp. HNS	22:15	10-11			X		

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle	2	Foraging along treeline 2-3 metres above ground	22:17	10-11			X		
Common pipistrelle and Soprano pipistrelle	2	Common pipistrelle foraging along treeline 2-3 metres above ground. Also, soprano pipistrelle HNS	22:20	10-11			X		
Common pipistrelle and Soprano pipistrelle	2	HNS. Feeding buzz heard	22:22	11	X		X		
Common pipistrelle	1	Foraging along treeline	22:27	12			X		
Common pipistrelle and Soprano pipistrelle	2	Foraging along treeline	22:32	12-1			X		
Soprano pipistrelle	1	HNS	22:37	1-2	X				
Common pipistrelle	1	HNS	22:41	1-2	X				
Common pipistrelle and Soprano pipistrelle	2	HNS. Feeding buzz heard.	22:43	3	X		X		
Common pipistrelle	1	HNS	22:48	4-5	X				
Common pipistrelle	1	HNS	22:51	5	X				
Common pipistrelle and Soprano pipistrelle	2	HNS. Feeding buzz heard	22:53	5-6	X		X		
Common pipistrelle	1	HNS	23:02	7-8	X				
Soprano pipistrelle	1	HNS	23:05	8-9	X				
Soprano pipistrelle	1	HNS	23:09	8-9	X				

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle	1	HNS	23:14	10	X				

**Site:** Woodlands Green, Coedely    **Project Number:** EDP4896    **Date of Transect:** 02/08/2018  
**Start time:** 21:01    **Finish time:** 23:01    **Sunset:** 21:01

**Weather conditions**

	Temperature (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort)
<b>Start</b>	20	70	None	0
<b>Mid</b>	19.2	40	None	0
<b>Finish</b>	18	15	None	0

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle	1	HNS	21:11	12-11	X				
Common pipistrelle	1	HNS	21:16	10-9	X				
Soprano pipistrelle	1	Commuting along hedgerow	21:20	9-8		X		E	
Soprano pipistrelle	1	HNS	21:22	9-8	X				
Common pipistrelle	1	HNS	21:23	9-8	X				
Soprano pipistrelle	1	Foraging around canopy	21:26	9-8			X		
Common pipistrelle and Soprano pipistrelle	2	Soprano pipistrelle commuting along hedgerow. Also, Common pipistrelle HNS	21:33	8-7	X	X		E	
Common pipistrelle	1	HNS	21:38	7-6	X				

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Soprano pipistrelle	1	Commuting across field	21:39	7-6		X		SE	
Common pipistrelle	1	Commuting across field	21:41	7-6		X		SE	
Common pipistrelle	1	Commuting along hedgerow	21:42	7-6		X		E	
Common pipistrelle	1	Foraging along hedgerow	21:45	6-5			X		
Common pipistrelle	1	Foraging along hedgerow	21:46	6-5			X		
Common pipistrelle	1	Foraging along hedgerow	21:49	6-5			X		
Common pipistrelle and Soprano pipistrelle	2	HNS	21:57	5-4	X				
Common and Soprano pipistrelle	2	HNS	22:00	3-2	X		X		
Common pipistrelle	1	HNS	22:04	2-1	X				
Soprano pipistrelle	1	Foraging along woodland edge	22:06	2-1			X		
Common pipistrelle	1	HNS	22:10	12-11	X				
Common pipistrelle	1	HNS	22:13	12-11	X				
Soprano pipistrelle	1	HNS	22:17	11-10	X				
Soprano pipistrelle	1	Foraging along hedgerow	22:20	11-10			X		
Soprano pipistrelle	1	Foraging along hedgerow	22:25	10-9			X		
Common pipistrelle	1	HNS	22:29	9-8	X				
Common pipistrelle	1	HNS	22:34	8-7	X				
Common pipistrelle	1	HNS	22:37	7	X				

Bat Species	No. of bats	Activity noted	Time of activity	Walk/ Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle	1	HNS	22:41	6-5	X				
Common pipistrelle	1	HNS	22:43	6-5	X				
Soprano pipistrelle	1	HNS	22:45	5-4	X				
Soprano pipistrelle	1	HNS	22:49	4	X				
Common pipistrelle	1	Foraging along treeline 3-4 metres above ground	22:52	3-2			X		
Soprano pipistrelle	1	Foraging along treeline	22:59	1-12			X		

**Site:** Woodlands Green, Coedely **Project Number:** EDP4896 **Date of Transect:** 04/09/2018  
**Start time:** 19:54 **Finish time:** 21:54 **Sunset:** 19:54

#### Weather conditions

	Temperature (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort)
<b>Start</b>	17.2	15	None	0
<b>Mid</b>	17.3	5	None	0
<b>Finish</b>	16.4	5	None	0

Bat Species	No. of bats	Activity noted	Time of activity	Walk / Sto p point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Soprano pipistrelle	1	HNS	20:07	1-2	X				
Common pipistrelle	1	Commuting along hedgerow	20:09	2-3		X		W	
Soprano pipistrelle	2	Foraging above canopy 15-20m above ground	20:11	3-4			X		
Common pipistrelle	1	HNS	20:12	3-4	X				
Soprano pipistrelle	1	Foraging along hedgerow	20:15	3-4			X		

Bat Species	No. of bats	Activity noted	Time of activity	Walk /Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle and Soprano pipistrelle	2	Foraging along hedgerow	20:16	4-5			X		
Soprano pipistrelle	1	HNS	20:17	4-5	X				
Common pipistrelle	1	Commuting along hedgerow	20:20	4-5		X		NW	
Common pipistrelle	1	Foraging along hedgerow until 20:25	20:21	4-5			X		
Common pipistrelle and Soprano pipistrelle	2	Common pipistrelle foraging along hedgerow. Soprano pipistrelle HNS	20:26	5-6	X		X		
Common pipistrelle	1	HNS	20:28	5-6	X				
Common pipistrelle	1	Foraging along hedgerow until 20:31	20:29	6-7			X		
Common pipistrelle	1	Commuting along hedgerow	20:35	7-8		X		W	
Soprano pipistrelle	1	Foraging along hedgerow and verge until 20:41	20:37	8-9			X		10 +
Soprano pipistrelle	1	Foraging along hedgerow	20:42	8-9			X		
Soprano Pipistrelle	1	Foraging along hedgerow	20:43	8-9			X		
Common pipistrelle	1	HNS	20:44	8-9	X				
Common pipistrelle and Soprano pipistrelle	2	HNS	20:46	8-9	X				
Soprano pipistrelle	1	Foraging along hedgerow	20:48	8-9			X		
Common pipistrelle	1	Foraging along hedgerow	20:49	9			X		
Common pipistrelle	1	HNS	20:50	9-10	X				

Bat Species	No. of bats	Activity noted	Time of activity	Walk /Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle and Soprano pipistrelle	3	Foraging along hedgerow until 20:54. At least 3 individual bats	20:52	9-10			X		
Soprano pipistrelle	1	Foraging along hedgerow until 20:59	20:56	10			X		
Soprano pipistrelle	1	HNS	20:57	10-11	X				
Common pipistrelle and Soprano pipistrelle	2	HNS	20:59	10-11	X				
Common pipistrelle and Soprano pipistrelle	2	Foraging along hedgerow	21:01	10-11			X		
Soprano pipistrelle	2	Foraging along hedgerow until 21:04	21:02	11			X		
Myotis sp.	1	HNS	21:03	11-12	X				
Common pipistrelle	1	Foraging along hedgerow	21:05	11-12			X		
Soprano pipistrelle	1	Foraging along hedgerow	21:10	12-1			X		
Common pipistrelle	1	HNS	21:11	12-1	X				
Soprano pipistrelle and Common pipistrelle	2	HNS	21:14	1-2	X				
Common pipistrelle	1	HNS	21:17	2	X				
Common pipistrelle	1	Foraging along hedgerow until 21:26	21:23	5-6			X		
Common pipistrelle	1	HNS. Feeding buzz heard	21:30	7	X		X		
Common pipistrelle	1	HNS. Feeding buzz heard	21:31	7-8					

Bat Species	No. of bats	Activity noted	Time of activity	Walk /Stop point	Activity				
					Heard not seen (HNS)	Commuting	Foraging	Direction	Nos. passes
Common pipistrelle and Soprano pipistrelle	1	Common pipistrelle foraging along hedgerow. Soprano pipistrelle HNS	21:35	8-9	X		X		
Soprano pipistrelle	1	HNS. Feeding buzz heard	21:38	9	X		X		
Common pipistrelle	1	HNS	21:39	9-10	X				
Common pipistrelle	1	HNS. Feeding buzz heard	21:42	9-10	X		X		
Common pipistrelle	1	Foraging along hedgerow until 21:47	21:45	10-11			X		
Common pipistrelle	1	HNS	21:48	11-12	X				
Common pipistrelle	1	HNS	21:53	12-1	X				



## Appendix EDP 6

### Bat Survey Findings: Automated Detectors

#### July 2018

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		18 July	19 July	20 July	21 July	22 July		
AEX15 / Position 1	Common pipistrelle	36	51	20	80	114	301	61.18
	Soprano pipistrelle	14	17	14	75	39	159	32.32
	Myotis sp.	7	1	9	9	4	30	6.1
	Long-eared bat					2	2	0.41
	<b>Total</b>	57	69	43	164	159	492	

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		18 July	19 July	20 July	21 July	22 July		
AEX22 / Position 2	Common pipistrelle	215	487	780	806	471	2759	84.06
	Soprano pipistrelle	86	130	70	104	90	480	14.63
	Lesser Horseshoe			1			1	0.03
	Myotis sp.	28	3	1	1	7	40	1.22
	Long-eared bat					1	1	0.03
	Noctule				1		1	0.03
	<b>Total</b>	329	620	852	912	569	3282	

#### August 2018

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		15 August	16 August	17 August	18 August	19 August		
AEX15/ Position 1	Common pipistrelle	4	9	26	19	43	101	48.56
	Soprano pipistrelle	8	8	20	10	21	67	32.21
	Lesser Horseshoe	1					1	0.48
	Myotis sp.	1	2	8	3	16	30	14.42
	Long-eared bat	1	1	2		2	6	2.88
	Noctule	1	1				2	0.96
	Serotine				1		1	0.48
	<b>Total</b>	16	21	56	33	82	208	

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		15 August	16 August	17 August	18 August	19 August		
AEX22/ Position 2	Common pipistrelle	6	79	30	49	449	613	64.05
	Soprano pipistrelle		57	5		63	125	13.06
	Lesser Horseshoe		1			2	3	0.31
	Myotis sp.	9	125	10	12	55	211	22.05
	Long-eared bat	1			1	1	3	0.31
	Noctule			2			2	0.21
	<b>Total</b>		16	263	47	62	570	957

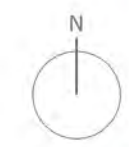
## September 2018

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		04 Sept	05 Sept	06 Sept	07 Sep	08 Sept		
AEX28/ Position 1	Common pipistrelle	57	46	162	24	24	313	62.1
	Soprano pipistrelle	29	33	66	14	23	165	32.73
	Lesser Horseshoe		2	1	1		4	0.79
	Myotis sp.	11	2	2	1	5	21	4.16
	Serotine					1	1	0.19
	<b>Total</b>		97	83	231	40	53	504

Position	Bat Species	Number of Bat Passes Recorded Per Night					Total	% of total
		04 Sept	05 Sept	06 Sept	07 Sept	08 Sept		
AEX29/ Position 2	Common pipistrelle	349	308	136	51	73	917	55.17
	Soprano pipistrelle	112	222	70	190	96	690	41.51
	Lesser Horseshoe	1		1			2	0.12
	Myotis sp.	12	6	7	3	16	44	2.64
	Long-eared bat	2	1		2		5	0.3
	Noctule	3	1				4	0.24
	Serotine	1					1	0.06
	<b>Total</b>		479	538	214	246	185	1662

## Plans

- Plan EDP 1**                      Extended Phase 1 Habitat Survey  
(edp4896/d001 18 June 2018 PD/NP)
- Plan EDP 2a**                     Bat Survey Results: July  
(edp4896/d005 28 September 2018 AG/KH)
- Plan EDP 2b**                     Bat Survey Results: August  
(edp4896/d006 28 September 2018 AG/KH)
- Plan EDP 2c**                     Bat Survey Results: September  
(edp4896/d007 28 September 2018 AG/KH)



- Application Boundary
- Survey Boundary
- Semi-natural Broadleaved Woodland
- Dense Scrub
- SI Poor Semi-improved Grassland
- SI Semi-improved Grassland
- Marshy Grassland
- Ruderal Vegetation
- Bracken
- Building
- Tree with High Bat Roost Potential
- Tree with Medium Bat Roost Potential
- Tree with Low Bat Roost Potential
- Intact Species-rich Hedgerow and Trees
- Intact Species-rich Hedgerow
- Intact Species-poor Hedgerow
- Hedgerow with Trees
- Defunct Hedgerow
- W1 Woodland Label
- F1 Field Label
- H1 Hedge Label
- T1 Tree Label

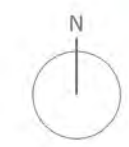
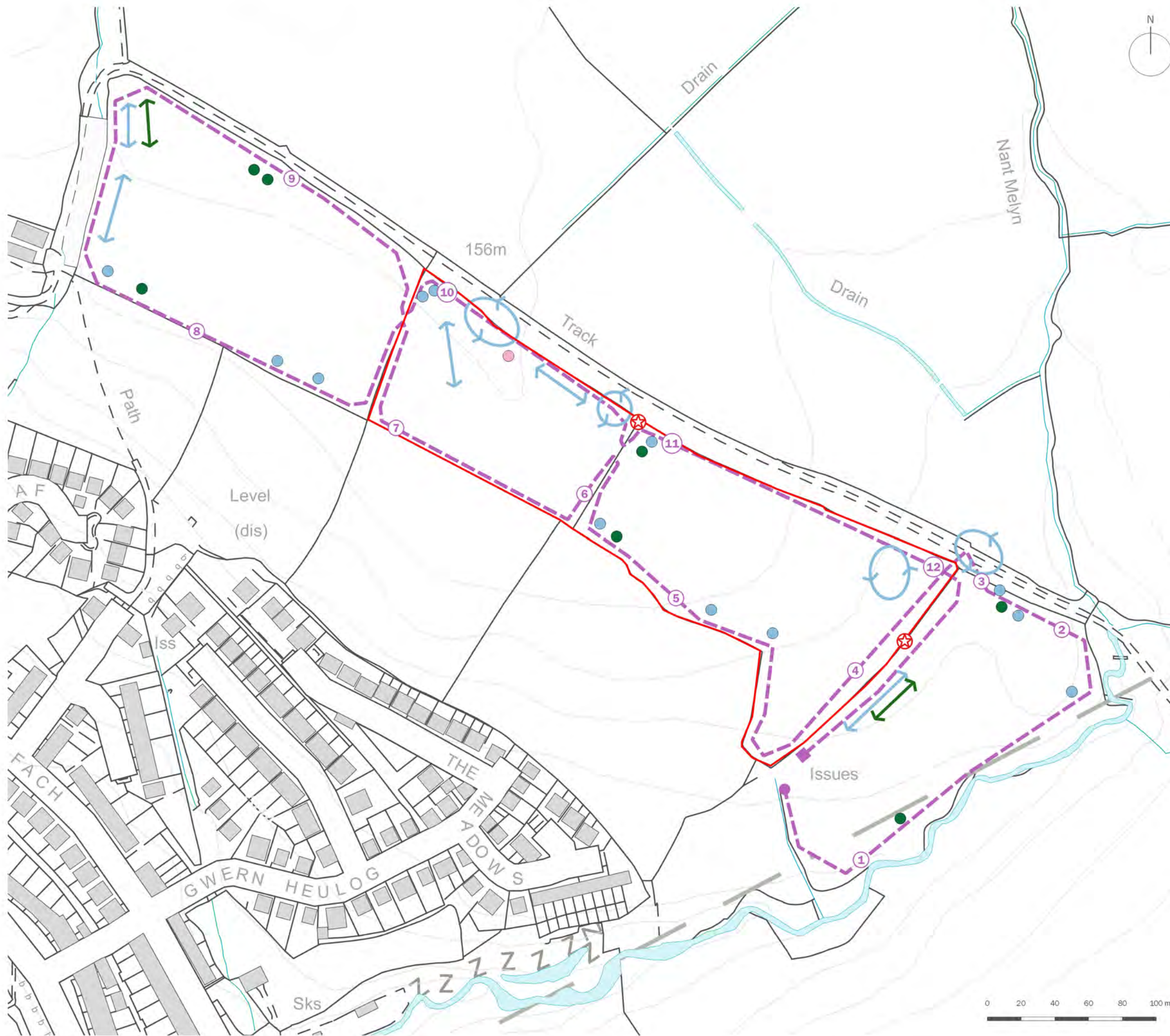
client  
**Lewis Homes**

project title  
**Woodlands Green, Coedely**

drawing title  
**Plan EDP 1: Extended Phase 1 Habitat Survey**

date	18 JUNE 2018	drawn by	PD
drawing number	edp4896_d001	checked	NP
scale	1:2,200 @ A3	QA	LB





- Site Boundary
- ① Transect Route
- ★ Anabat Location

- Bat Observations**
- Common Pipistrelle
  - Soprano Pipistrelle
  - Myotis Bat Species

- Bat Activity (colour denotes species)**
- Commuting Activity
  - ⊙ Foraging Activity
  - ↕ Common Pipistrelle
  - ↕ Soprano Pipistrelle

client  
**Lewis Homes**

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**Woodlands Green, Coedely**

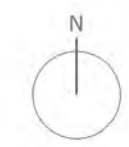
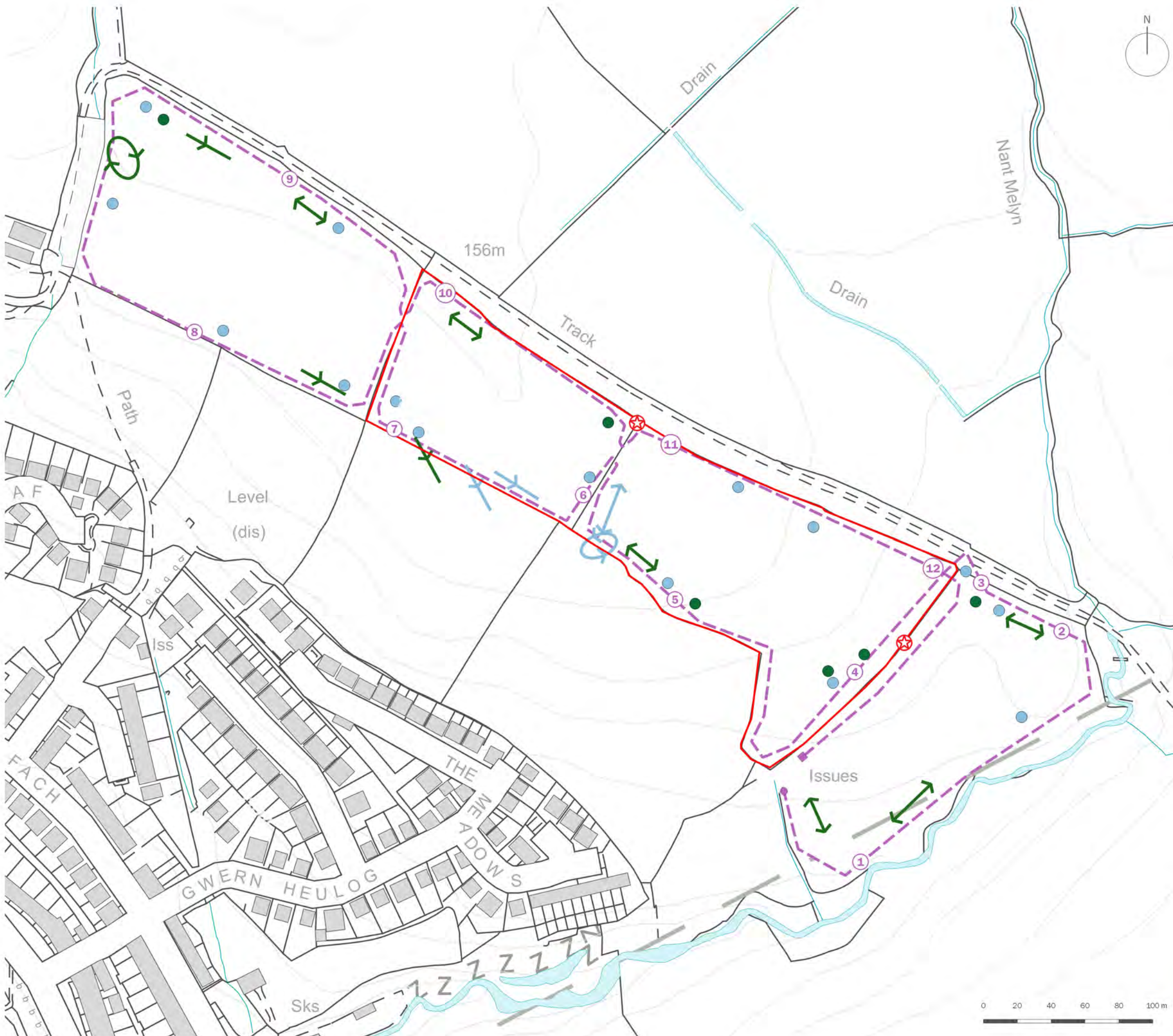
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**Bat Survey Results - July**

date	28 SEPTEMBER 2018	drawn by	AG
drawing number	edp4896_d005	checked	KH
scale	Refer to Scale bar	QA	PD



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- Site Boundary
- ① Transect Route
- ★ Anabat Location
- Bat Observations**
- Common Pipistrelle
- Soprano Pipistrelle
- Bat Activity (colour denotes species)**
- ← Commuting Activity
- ↻ Foraging Activity
- Common Pipistrelle
- Soprano Pipistrelle

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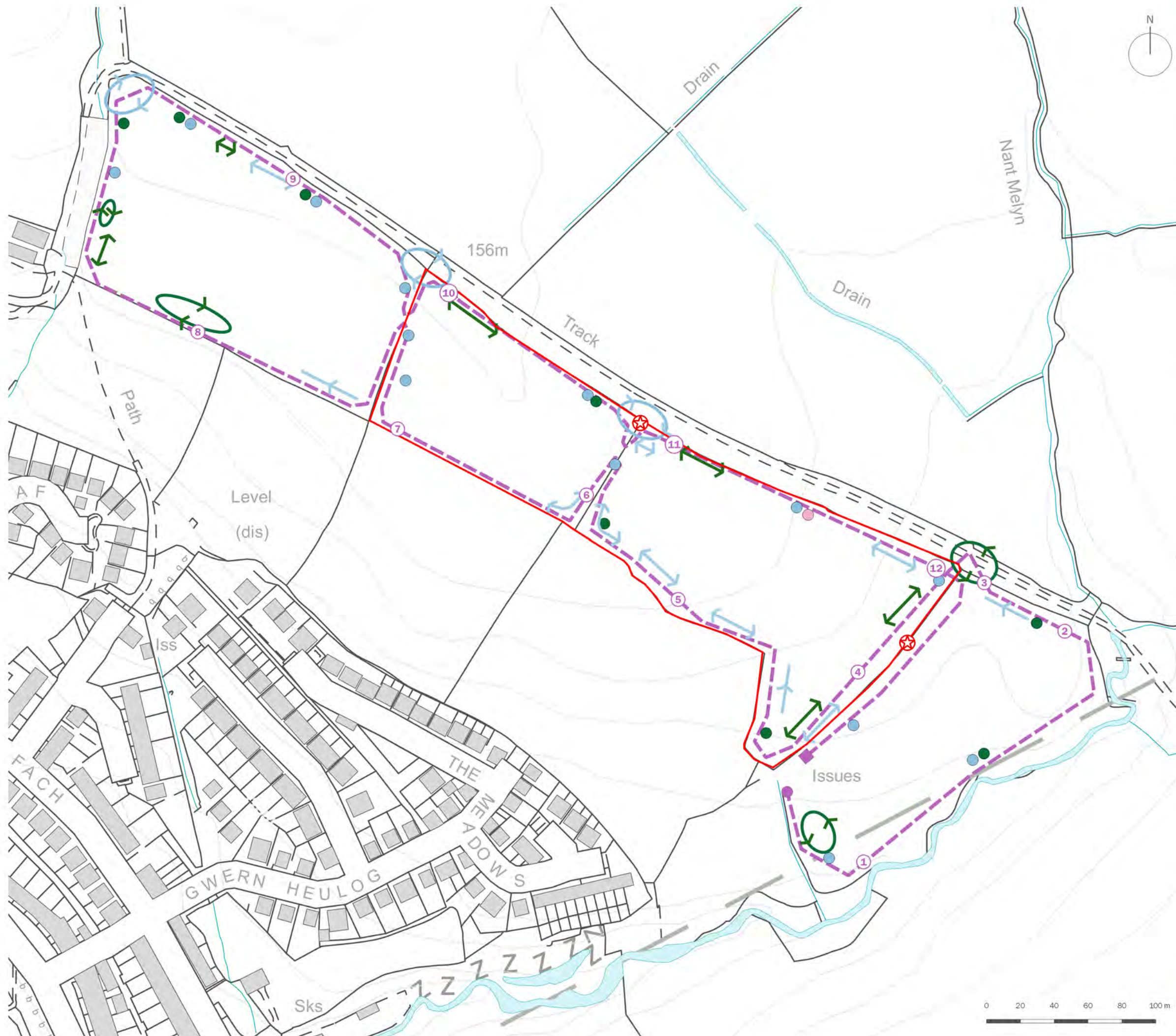
drawing title  
**Bat Survey Results - August**

date	28 SEPTEMBER 2018	drawn by	AG
drawing number	edp4896_d006	checked	KH
scale	Refer to scale bar	QA	PD

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**Site Boundary**

**Transect Route**

**Anabat Location**

**Bat Observations**

- Common Pipistrelle
- Soprano pipistrelle
- Myotis Bat Species

**Bat Activity (colour denotes species)**

- Commuting Activity
- Foraging Activity
- Common Pipistrelle
- Soprano Pipistrelle

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drawing title  
**Bat Survey Results - September**

date 28 SEPTEMBER 2018 drawn by AG  
drawing number edp4896\_d007 checked KH  
scale Refer to scale bar QA PD

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