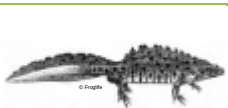


Inspection & Assessment in relation to Bats, Breeding Birds & Great Crested Newt

June 2023

Fair View
Cloy Lane
Overton
LL13 0HR

National Grid Ref: SJ 39831 42088



Document Title	Inspection & Assessment in Relation to Bats, Breeding Birds & GCN
Issue no.	1.0
Prepared for	Blueprint Architectural
Prepared by	Tyrer Ecological Consultants Ltd

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Executive Summary

As part of an ongoing planning application with Wrexham Council (Planning Ref: VAL/2023/0087) at Fair View, Overton (see **Figure 1.1**), Tyrer Ecological Consultants Ltd carried out a daytime preliminary roost assessment in relation to bats with an inclusive inspection for breeding birds and assessment for Great Crested Newt (*Triturus cristatus*) (GCN) in May 2023. The survey was commissioned by Blueprint Architectural; proposals are to entail the construction of an extension at the north of the building.

Detailed methods, findings, conclusions, and recommendations are presented throughout the report; however, the reader should be aware of the following Key points:

Further Surveys:

Bats:

Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by **Appendix I**, a localised region of the dwelling at Fair View is determined to offer ‘**Moderate**’ bat roost suitability in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016). As such, further survey work is recommended to be carried out at the site before an impact assessment can be concluded.

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

*It is recommended that **two dusk / dawn emergence / re-entry surveys** are conducted at the site during the active season of bats (May – August, extending into September), in order to establish if / how the buildings are being used by bats, and if so, identify the species present, abundance, roost locations and flight lines around the site following emergence / re-entry. A total of **two surveyors** would likely be required at the site to cover all elevations host to roost potential.*

Key Recommendations:

Great Crested Newt and Wider Herptofauna:

The application site features ten ponds within 250m of its boundary, lies within habitat considered suitable for great crested newts (GCN) and records of GCN are present within the local area; additionally, the application site and land of wider ownership offers some suitable habitat for commuting common amphibians. As such, a programme of Reasonable Avoidance Measures (RAMs) should be implemented during the construction phase of the works.

*See **Sections 8.11 – 8.15** for on details on the required RAMS.*

Breeding Birds:

No impacts are applicable in relation to any Sch.1 (WCA) specially protected bird species such as barn owl, and no further surveys or recommendations are necessary in relation to specially protected birds. In relation to more common birds, the region of the dwelling identified to hold potential for roosting bats and vegetation present across the site collectively offer birds a

plethora of potential nesting opportunities, particularly during the breeding bird season of March – August.

Given that all birds are protected when at the nest, it is recommended that any works to the structures and any vegetation clearance works on site in relation to the areas with breeding potential listed above are carried out outside of the breeding bird season (March – August inclusive). This includes scrub removal as well as any ground level clearance to the grassland areas on site. For works undertaken within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing. See Section 8.0 for further details.

Biodiversity Enhancement:

As a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions in addition to those described. Further recommendations, regarding bats, birds, native species and invertebrates are provided within **Appendix II**.

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Appendix II: Biodiversity Enhancement: General Recommendations

1.0 Introduction & Reasons for Survey

- 1.1 As part of an ongoing planning application with Blueprint Architectural on behalf of their clients Mr and Mrs E Coward at Fair View, Cloy Lane, Overton (see **Figure 1.1-1.2**), Tyrer Ecological Consultants Ltd carried out a daytime preliminary roost assessment in relation to bats with an inclusive inspection for breeding birds and assessment for Great Crested Newt (*Triturus cristatus*) (GCN) in May 2023.

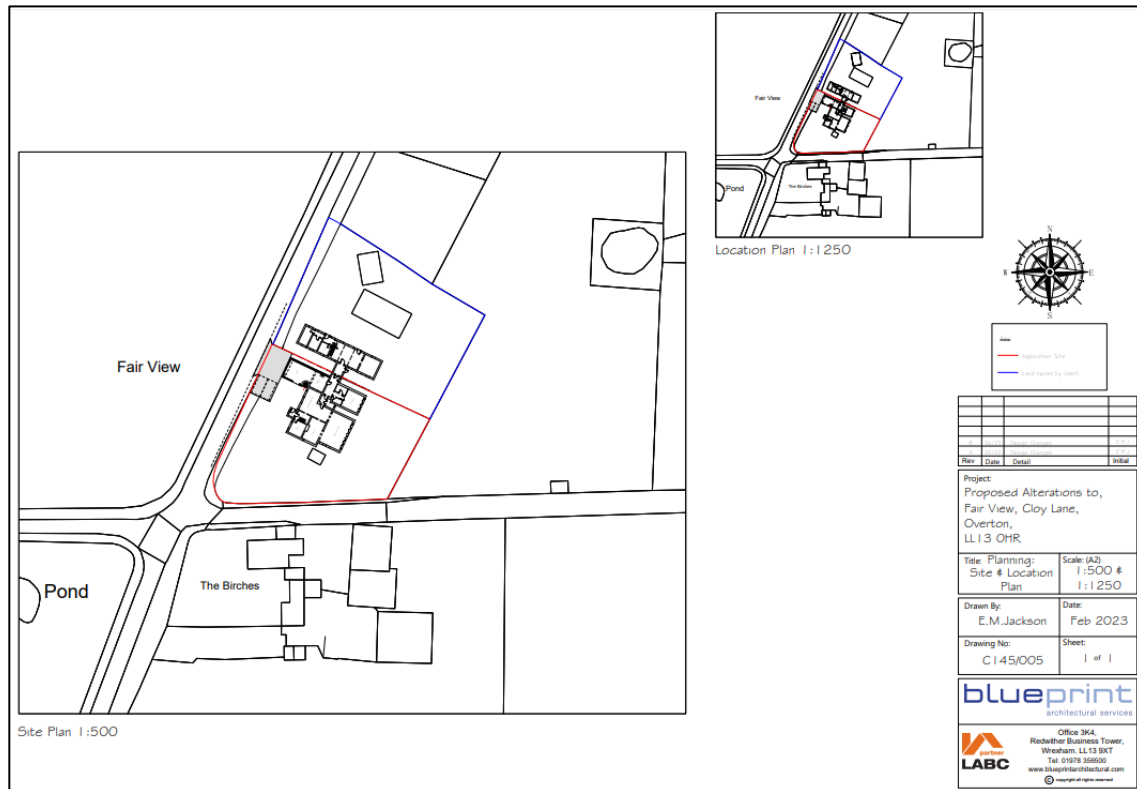


Figure 1.1 – Site Location Plan (© Blueprint Architectural Services)



Figure 1.2 – Proposed building plan (© Blueprint Architectural Services)

- 1.2 The survey was commissioned by Blueprint Architectural Services; proposals are understood to entail construction of an extension at the north of the building.

- 1.3 The aim of the survey was to ascertain if the building was of value to bats whilst an assessment for birds and Great Crested Newts (GCN) was also carried out. If any potential roost features (PRF's) were found to be suitable for bats, or signs of use were observed, then more detailed surveys would be recommended i.e. dusk/dawn emergence/re-entry surveys during the main active season of bats which is May – August (extending into September).
- 1.4 If any potential roost features (PRF's) were found to be suitable for bats, or signs of use were observed, then more detailed surveys would be recommended i.e. dusk/dawn emergence/re-entry surveys during the main active season of bats which is May – August (extending into September). If additional surveys are required following the initial site visit for breeding birds or GCN, this report will outline the details of those further requirements.
- 1.5 If any terrestrial or aquatic habitat suitable to host GCN, or evidence indicating the presence of GCN, was identified, further presence/absence surveys or avoidance measures would be required.
- 1.6 If it was determined that any Protected Species (Bats/GCN) or their breeding sites or roost/place of rest/shelter will be subsequently impacted by the works then a European Protected Species Mitigation Licence (EPSML) would be legally required to proceed with the development.
- 1.7 If evidence indicated breeding birds may be impacted by proposals, tailored recommendations would be made accordingly, species pending.
- 1.8 As part of the local authority's planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted where protected/priority habitats and species are, or may be present, that could be affected by the proposals for which the application seeks consent. Where more detailed surveys are recommended by the ecologist, following an initial daytime investigation, then Local Planning Authorities (LPA), on the advice of their ecological advisors, will not grant permission until such time that all relevant information is gathered.
- 1.9 In accordance with *Biodiversity Net Gain: Good practice principles for development* (CIEEM et al, 2019) the site visit also aims to identify enhancement opportunities for biodiversity in line with national and local planning policy.

2.0 Protected Species & Their Requirements

2.1 Planning Policy Wales (PPW) 11th Edition (2021) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

2.2 PPW and the National Development Framework (published as Future Wales – the National Plan 2040) set out how the planning system at a national, regional and local level can assist in delivering these requirements through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).

2.3 PPW (2021) states:

“The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained. Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned. An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence of protected species should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre.”

2.4 Planning authorities must therefore follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.

2.5 The first priority for planning authorities is therefore to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or pro-gain have been fully considered.

2.6 The Environment (Wales) Act 2016 (“the Act”) – requires local planning authorities to have regard to area statements in the development of Local Development Plans. The Act introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around objectives for habitats and species.

Part 1 of the Act promotes sustainable management of natural resources, and in Part 1 section 6 states:

“A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.”

2.7 This is further supported by PPW (2021) which requires developments to achieve a Net Benefit for Biodiversity (NBB):

*“Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a **net benefit for biodiversity**. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the follow aspects:*

- *diversity between and within ecosystems;*
- *the connections between and within ecosystems;*
- *the scale of ecosystems;*
- *the condition of ecosystems including their structure and functioning; and*
- *the adaptability of ecosystems.”*

2.8 There are several plans, strategies and national, sub-regional and local policy statements which provide a framework for development in the Plan area. The Planning and Compulsory Purchase Act (2004) makes it a requirement for local planning authorities in Wales to prepare a Local Development Plan (LDP) for their areas.

2.9 Wrexham Borough Council prepared a plan namely the ‘Wrexham Unitary Development Plan (1996 – 2011)’, which was formally adopted in February 2005 and supersedes any previous development plans for the area. A new plan, the ‘Wrexham Local Development Plan 2 (2013 - 2028)’, which will replace the current adopted plan, is currently under review. Until this new plan is adopted, the Wrexham Unitary Development Plan remains in effect.

2.10 Policy EC6 of the Wrexham Unitary Development Plan mirrors these statements within PPW 2021 and goes onto state the following:

“Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves will be supported.”

3.0 Protected Species in Wrexham

- 3.1 Up to eleven bat species have been recorded in Wrexham, many of which use built structures for roosting. A variety of building types and features are utilised by bat species at different times of year ranging from occupied residential dwellings to disused barns and bridges. The most frequently encountered species is the common pipistrelle bat (*Pipistrellus pipistrellus*); its abundant status in Wrexham is mirrored throughout the UK.
- 3.2 The number of breeding barn owls (*Tyto alba*) within rural parts of Wrexham is moderately high across areas of countryside where suitable environs exist; they are constantly under threat from loss of habitat and nesting opportunities.
- 3.3 There are fragmented populations of great crested newts (*Triturus cristatus*) across Wrexham.

4.0 Survey Methodology

- 4.1 As part of the Inspection & Assessment for Bats & Breeding Birds with GCN report, a desktop and field-based study is conducted. Methods for both components of the appraisal are given below.

Desktop Study

- 4.2 Prior to a site visit, a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2.0 kilometres of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGiC – provided by DEFRA) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSMLs) and species records to further inform conclusions concerning such species in the context of the study site and its proposed development. This mapping software, alongside a combination of both Google Earth Pro (© 2022/23) and Ordnance Survey OS mapping services, was also utilised to discern the number of ponds within a 250-metre radial buffer from the site, to help inform the likelihood of GCN being present on or in the vicinity of the site.
- 4.3 Historic satellite imagery was reviewed using sources such as the aforementioned Google Earth Pro (© 2022/23) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.
- 4.4 A commercial data request to the Local Environment Records Centre - Cofnod – has not been sourced and is justified through application of the following recent guidance:

1) The Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK (CIEEM, 2020) states:

“It is generally expected that a desk study, including a data search, will be a key part of the ecological surveys or reports produced to inform a planning application. Freely available web-based sources of data and contextual information should always be used; in some cases, it may be acceptable to not undertake a data search with the LERC or other relevant NSS or local interest groups, for example:

ii) Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development. The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact. It can be very difficult to demonstrate that a data search would not have provided relevant information without obtaining and reviewing those data.

*iii) In some cases for Preliminary Roost Assessments of buildings in low impact / small-scale scenarios, such as an **extension to existing buildings**, loft conversions (full or partial), installation of Velux/dormer windows, single modern agricultural or similar building conversion or demolition; however, it should not be assumed that data searches are never required for such scenarios and this must be judged on a case by case basis and justified accordingly.*

2) The Guidelines for Preliminary Ecological Appraisal, 2nd Edition (CIEEM, 2017) also states:

*“Very occasionally it might be possible to carry out a robust PEA without obtaining LERC/NBDC/CEDaR data; this will usually only apply to **low impact or small-scale projects***

(e.g. by virtue of size, extent, duration of works, magnitude and locality), and should be determined on a case-by-case basis.”

- 4.5 As exemptions outlined in the guidance above can be applied in good practice for the proposals for which the applicant seeks consent, it is considered unnecessary to conduct a commercial data request at this time as enough information has been obtained using freely available resources; with respect to sensitive species (namely bats, birds and GCN) it was determined, through the Site inspection and review of the development proposals both during the construction phase and operational phase, that the recommendations listed within this report would not be affected by confirmation of either species presence. However, if a data search is considered to be necessary by the Local Authority, or environmental advisory body, to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued/updated report.

Field Survey

- 4.6 A daytime preliminary ecological appraisal was conducted on the 31st May 2023 in bright, clear conditions (16°C), average wind 2/12 (Beaufort scale), average 50% cloud cover, by the following surveyor (see **Table 4.1**).

Table 4.1 – Surveyor credentials

Name	Description of most relevant credentials
Miss. K. Judson Consultant Ecologist; Qualifying CIEEM	An experienced Consultant Ecologist holding a BSc (Hons.) Biology and MSc Conservation Management (a CIEEM accredited course) and is an accredited agent on the Class 2 Natural England bat licence of Mrs. K. Wilding (CLS-14227) and an accredited agent on the Natural England Great Crested Newt: CL08 Class 1 Licence (2018-34062-CLS-CLS) of Mr. M. Pritchard; FISC Level 5 Botanist.

- 4.7 Bat Conservation Trust (BCT) - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016) states:

“The guidelines should be interpreted and adapted on a case-by-case basis according to site-specific factors and the professional judgement of an experienced ecologist. Where examples are used in the guidelines, they are descriptive rather than prescriptive.”

- 4.8 The bat and breeding bird survey was conducted in tandem; the building was inspected for potential places that may be of value to bats or breeding birds, and to determine if evidence of use by either group was present.
- 4.9 External elevations were investigated with the aid of high-powered torch and close focus binoculars (where necessary) for places that could be used as a roost by bats or as a means of ingress for bats and birds leading to areas of roosting/nesting potential. These features are typically referred to as potential roost features (PRFs) when concerning bats. All external features were able to be surveyed without constraint.
- 4.10 The surrounding habitat was also considered in terms of general suitability for bat and bird species associated with the local habitat types, as well as value for GCN.
- 4.11 Criteria for roost assessment are based upon the determinants given in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016): (see **Figure 4.1**).

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Figure 4.1 – Bat Conservation Trust guidelines extract

4.12 An assessment of the building was conducted when birds are outside of their breeding season (this is typically March – August inclusive). Elevations were inspected for recent or historic evidence of birds that show a high dependency upon built structures, many of which are in a state of decline. These might include the following species for example:

- Starling (*Sturnus vulgaris*): Birds of Conservation Concern (BoCC) red status
- Swift (*Apus apus*): BoCC red status
- House Sparrow (*Passer domesticus*): BoCC red status
- House Martin (*Delichon urbica*): BoCC amber status

4.13 Additional to the site's capacity to support common species of bird, the area was subject to an assessment for capacity to support specially protected species such as the Barn owl, which is listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), with nests of birds from these species being protected from disturbance as well as destruction.

GCN

- 4.14 During the desktop assessment, a 250-metre search was undertaken from a site-central grid reference in relation to the presence of ponds or other water bodies that may have potential to support GCN. The information gathered would then be used to aid in establishing if more detailed surveys may be required in relation to this species, either in the form of presence / absence surveys or population class assessments.
- 4.15 There are ten waterbodies located within a 250-metre buffer of the site which were identified using a combination of aerial imagery and OS mapping as well as ground truthing efforts by the surveyors. The closest pond to the proposed works area(s) is located approximately 70 m east of the development Site (Pond 1); see **Figure 4.2** below for pond locations.

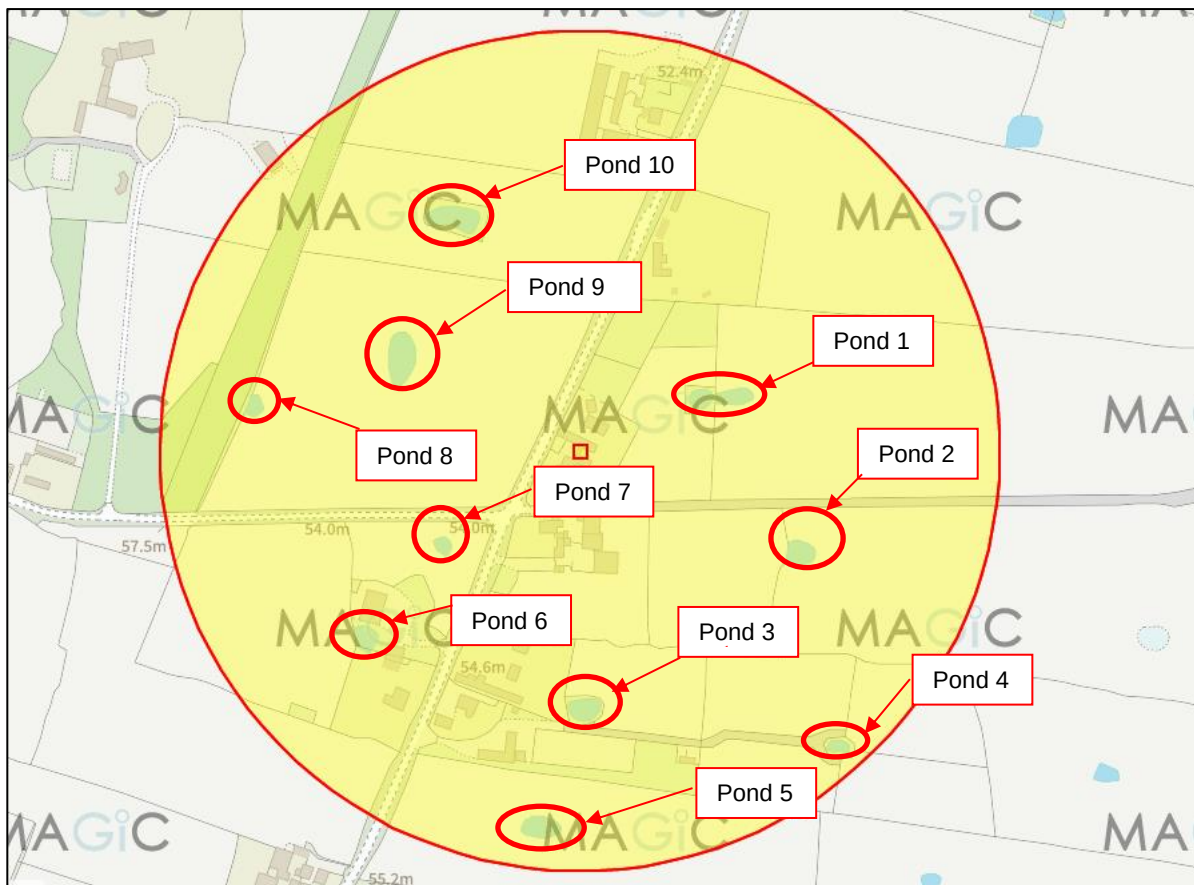


Figure 4.2 – Waterbody locations within a 250-metre radius of Fair View (Source: MAGiC maps 2022/23)

Applying the GCN HSI

The GCN Habitat Suitability Index (HSI) is a quantitative measure of habitat quality evaluating the suitability of habitat for the Great Crested Newt. A HSI is a number between 0 and 1, derived from an assessment of ten habitat variables known to influence the presence of newts. An HSI of 1 is optimal habitat (high probability of occurrence), while an HSI of 0 is very poor habitat (minimal probability of occurrence).

The HSI is calculated on a single pond basis but takes into account surrounding terrestrial habitat and local pond density. The tool is particularly useful in survey and mitigation; one benefit is that it can be undertaken in a single field visit (with supporting desk work) and at any time of the year (though some variables are more easily measured in spring and summer).

Its main uses are:

- *In surveys, to assess habitat quality in a repeatable, objective manner. In particular, the HSI allows individual factors that influence newt presence to be easily identified. These factors could help explain a very high or very low count. A high HSI can justify employing additional survey effort or methods if no newts are found initially.*
- *In impact assessments, to allow a measure of how damaging a development could be. HSI might also be used as a screening tool to select no impact or minimal impact options.*
- *In risk assessments, helping to decide whether an offence might be committed, and therefore whether a licence should be applied for. If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of GCN presence. Hence, with due care and in limited circumstances the HSI might be used in the absence of newt surveys to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the predicted impacts - were newts to be present - would be low (e.g., development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer should be aware that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt presence/absence survey would be required to confirm this.*
- *In habitat enhancement, HSI could be used to identify the low-scoring factors in an existing pond that need addressing to improve its quality for newts.*
- *In post-development monitoring, to allow an assessment of habitat condition.*
- *The GCN HSI is not a substitute for undertaking newt surveys; it indicates but cannot confirm presence or absence of GCN. A licence application that infers GCN presence solely from HSI data (i.e., no newt survey data presented) will be rejected. Very low HSI scores may be used along with scheme details to infer a minimal chance of committing an offence in low impact situations. This is on a risk assessment basis and developers should be aware of the potential hazards of this approach. Care should be taken when interpreting low HSI scores; for example, a low scoring pond close to an occupied newt pond may still support newts.*

4.17 The results, conclusions and recommendations are based on a number of factors i.e.

- Practical experience of surveyor,
- Knowledge of bat/bird species relevant to the site location and geographical range,
- Nature of immediate/surrounding habitat in relation to foraging/commuting,
- Condition of the building,
- Presence/absence of a loft space or cellar and reasonable practicality of use,
- Presence/absence of roost potential,
- Value of roost potential – if present,
- Value of terrestrial habitat for newts,
- Presence of suitable breeding ponds within 250 meters of the application site.

4.18 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, the Director of Tyrer Ecological Consultants Ltd, and her assessment is consistent with that of the authors K. Judson and Miss. C. Rimmer and surveyor Miss. K. Judson.

5.0 Limitations

- 5.1 The survey was conducted in June at a time when bats are within their active season, with evidence of bats most apparent in this time period where they are roosting. Survey timing is therefore not considered a constraint in this instance.
- 5.2 The survey took place within the breeding bird season (typically March – September inclusive) at a time when evidence of breeding birds is most apparent. Survey timing is again not considered a constraint in this instance.
- 5.3 Only access to Pond 1 could be achieved owing to the remaining nine ponds identified within 250m of the application site being located on private land. However, as it is known that Great Crested Newt are present within the local area and considering the site lies within area considered suitable for GCN (source: DataMapWales, 2023) it has been assumed in formulating the impact risk assessment for GCN within this report that all ponds within 250m contain GCN hence absence of access in this instance is not considered to impact the conclusions and recommendations provided within **Section 8** of this report.
- 5.4 In considering all survey constraints, no significant limitations were experienced that might adversely influence the results, conclusions, and recommendations of this report.

6.0 Desk Study Results

- 6.1 The application site, Fair View (referred to in part as “the Site”) is located in Overton, Wrexham on Cloy Lane approximately 10 kilometres to the east of Wrexham city centre (see **Figure 6.1**).

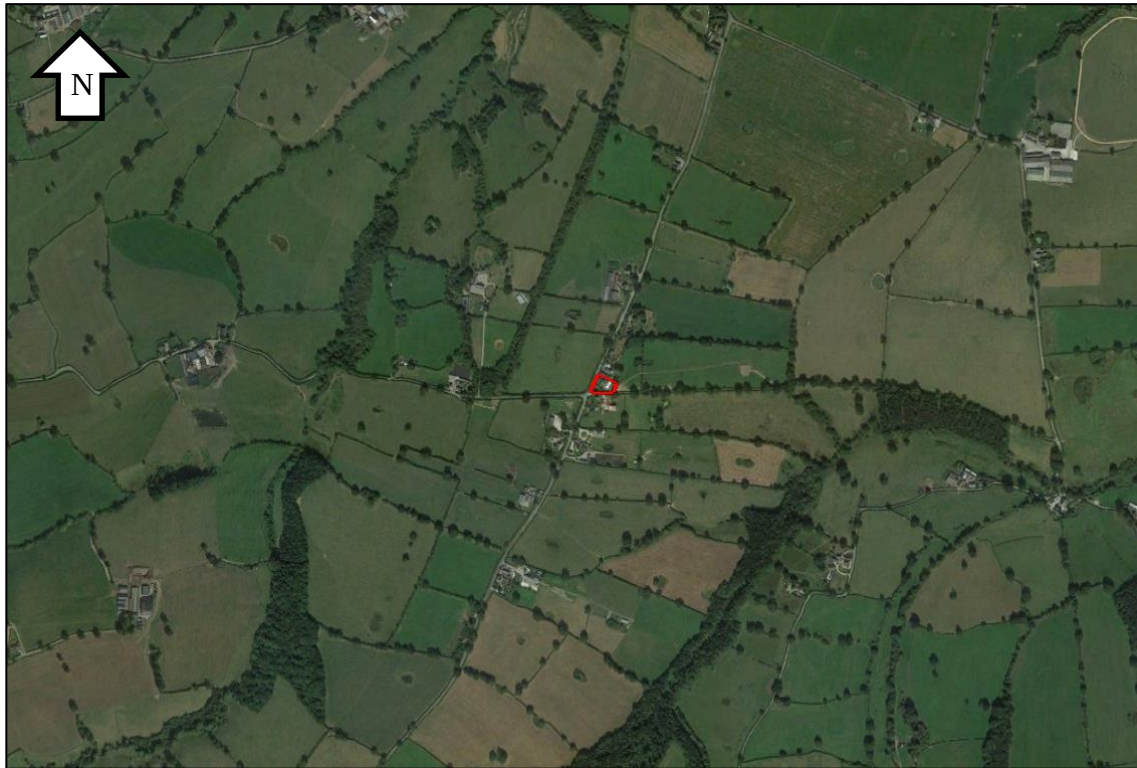


Figure 6.1 – Location of the application site (red boundary) within the landscape (Source: Google Earth Pro 2022/23)

- 6.2 Fair View is located at the intersection of Cloy Lane and Cae-Dyah Lane, the immediate habitat (500 metre radius) is largely rural, characterised by an expanse of barren arable and pasture fields lined with associated trees and hedgerows. Further natural environs include the wetland pastures at the SSSI site, Cloy Brock is located 0.6 km west of the Site and agricultural field ponds.
- 6.3 The extending environment (2.0 kilometre radius) similarly, is primarily agricultural land with many industrialised farms across the wider landscape. Semi-natural habitats include small pockets of lowland deciduous woodland interspersed within the environment; the continuation of agricultural linear features extend along the wider environment offer habitat connectivity and foraging grounds for bats and birds. At 0.65 km east of the Site runs the A539 which has a large industrial estate and local amenities.
- 6.4 Collectively, the immediate and extending aforementioned ecological features should be considered moderately favourable, with relatively well-connected ecological networks for bats and birds and connectivity between the application site and areas of grassland and small wooded areas surrounding the site by the aforementioned linear features. These corridors of connectivity provide areas for commuting and foraging for bats, with the protected species most typically associated with the habitats described being the common pipistrelle, frequently associated with using buildings in sub-urban and rural areas.

NB: *Where quality habitat is present close to buildings then the percentage use of those buildings, by bats, increases given that roost opportunities are available and vice versa.*

- 6.5 There are two statutory designated sites for nature conservation within 2.0 kilometres of the application site (see **Table 6.1**).

Table 6.1 – Statutory designation type and reason for designation within 2.0 kilometres buffer

Site name	Designation type	Interest features
Cloy Brook Pastures (0.45 kilometres west)	Site of Special Scientific Interest (SSSI)	A 5.72 ha site area of wet pasture managed by grazing, with a variety of plants such as dyer's greenweed, pepper saxifrage and spiny restharrow.
Afon Dyfrdwy (River Dee) 2.0 kilometres west)	Site of Special Scientific Interest (SSSI); Special Area of Conservation (SAC)	A site with a cartesian area of 1491.42 ha, the river has been designated as a Special Area of Conservation because of its role as a habitat for Atlantic salmon and floating water plantain.

Notable Species Information

- 6.7 Great Crested Newt are understood to be located within pond(s) within close proximity to the application (exact pond location unknown); this information has been provided by Emma Broads at Wrexham County Borough Council.
- 6.8 Tyrer Ecological Consultants Ltd have previous and ongoing projects involving bats within the 2.0-kilometre area surrounding the application site – a search of such data likewise revealed and absence of records pertaining to bats within 2.0km of the application site. It should however be noted that an absence of records does not necessarily indicate an absence of bats in an area but instead may be attributed to an absence of surveys within that area.
- 6.9 Designated site and habitat data has been obtained from MAGiC Maps, 2023 and DataMapWales, 2023 are presented in **Figure 6.2** and **Figure 6.3**.

Fair View, Cloy Lane, Overton, LL13 0HR
Inspection & Assessment in Relation to Bats, Breeding Birds & GCN

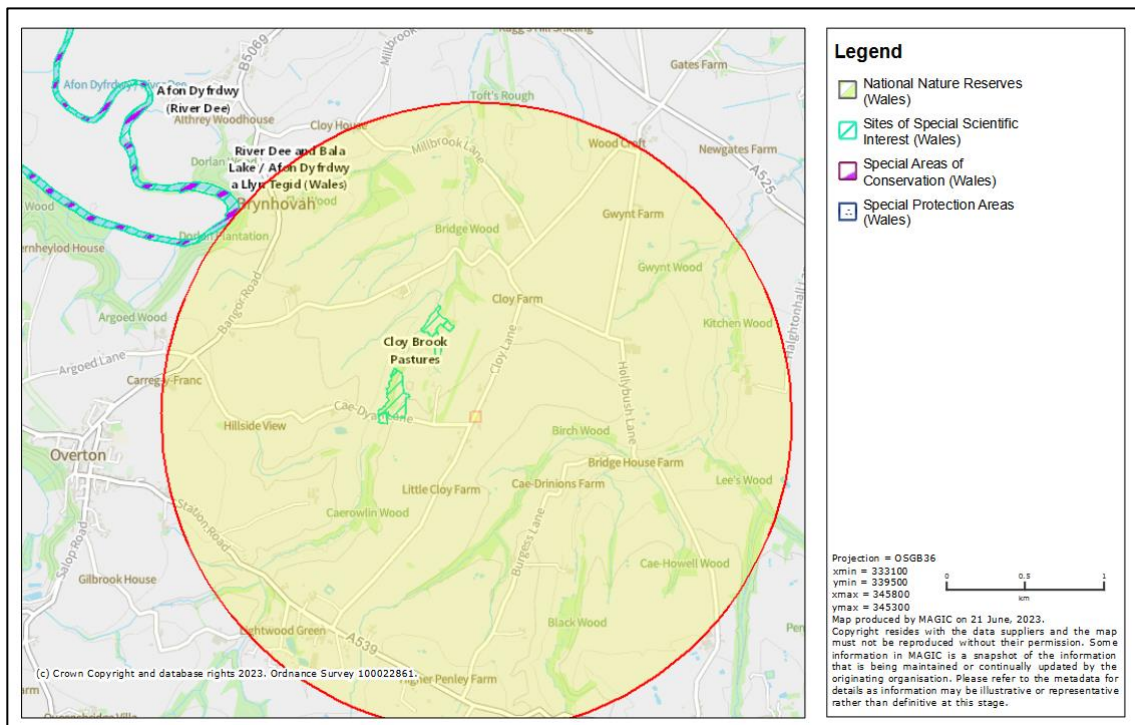


Figure 6.2 – EPSML and designated site data for the area within 2.0 kilometres of the application site; (MAGiC Maps 2023)

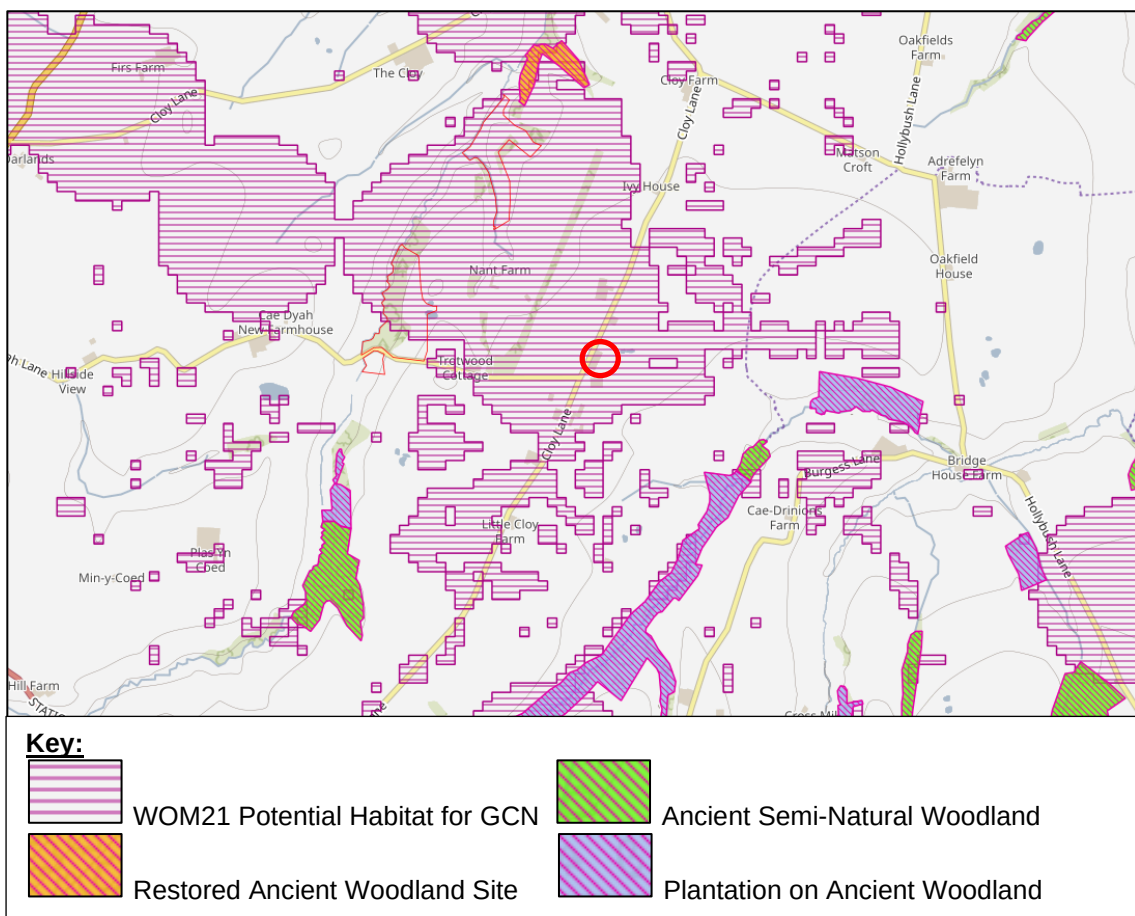


Figure 6.3 – Approximate location of the site is represented by the red circle; WOM21 Potential Habitat for GCN data Ancient Woodland Inventory Data 2021 is also presented (Source: Data Map Wales, 2023)

7.0 Field Study Results

Bats

- 7.1 The dwelling at Fair View (see **Figure 7.1**) is a complex two-storey building with rear single-storey extensions; the building is of red-brick construction and features a tiled multi-pitched roof; wooden window frames and lintels feature throughout; the building is to the approximate maximum dimensions of 22m x 16m x 6.5m (width x depth x height). Whilst the surveyor is not qualified to assess the structural integrity of buildings, the building is adjudged to be in aesthetically good condition owing to an absence of any significant signs of damage, dilapidation and/or vandalism.

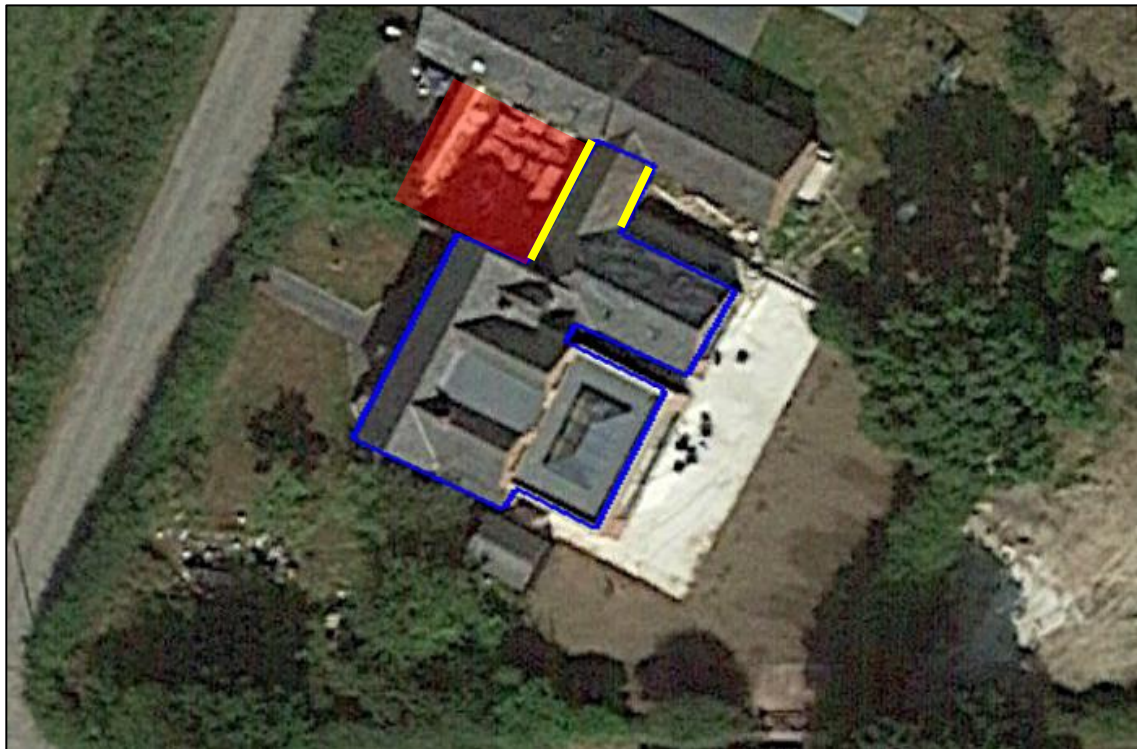


Figure 7.1 – Building surveyed (blue); approximate area to be impacted is shaded red; areas where potential for roosting bats has been identified if highlighted yellow

- 7.2 Internally the building features a loft-space above the main portion of the dwelling only; the loft space is to the approximate maximum height of 1.3m (at apex) and is of purlin and rafter construction with a central kingpost support; rockwool insulation is present throughout. The internal climatic conditions are dark, non-draughty and compact; owing to the low height of the loft space, the loft is considered unsuitable for the breeding requirements of loft-dwelling bats such as brown long-eared (*Plecotus auritus*), this is a species which requires large open loft spaces with room for free flight and consistent thermal qualities. The loft space cannot be discounted for any use by this species other than breeding. Rockwool insulation obscures ceiling joists thus making full access of the loft unsafe hence the loft space was observed from the hatch, no evidence of bats in the form of droppings was identified from this vantage point; however, this is often the case owing to the crevice dwelling nature of many species of bats,
- 7.3 The loft space features bitumen 1F underfelt beneath the roofing material; where present bitumen 1F underfelt and other such traditional underfelts markedly improve a buildings value to bats, notably for crevice-dwelling bats of the *Pipistrellus* genus whereby the bats roost between linings and the roof cover material given external access opportunities exist, whilst an absence of roof linings can lower a structures value for crevice dwelling bats.

NB: The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings were the warm, dry conditions favour the requirements of a maternity colony but other structures are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.

- 7.5 Externally, there are no viable potential roost features into the loft space and eaves are well sealed with grates (see **Appendix I, Plate 6**) throughout. Exception to this exists at the areas marked with yellow on **Figure 7.1** (see **Appendix I, Plates 2, 9, 10 and 13**); here, whilst the ceiling within is vaulted with only a very small void existing at the roof apex, the eaves are open thus allowing potential roosting opportunity between the roofing material, ceiling and bitumen 1F underfelt. Based on the potential existing at this area the dwelling at Fair View is categorised as pertaining to **'Moderate'** bat roost suitability in line with current BCT guidelines hence further surveys are recommended within Section 8 of this report at the areas considered to hold potential for roosting bats.

Breeding Birds

- 7.6 In relation to WCA Schedule 1 specially protected bird species such as barn owl, no current or historic evidence of barn owl including owl pellets, faeces, nest, or roost debris was noted and the building is considered unsuitable for the breeding and roosting requirements of barn owl. However, the surrounding agricultural land and associated linear features are considered suitable to support barn owl hunting hence the transient presence of perched/commuting barn owl on site is considered possible.
- 7.7 In relation to non-Sch.1 listed bird species hedgerows, trees and garden shrubs on site provide a range of suitable nesting platforms; however, it is understood that these will not be impacted by the works. Additionally, the potential roost features (PRFs) identified for bats are also considered suitable for species such as swift and wren however no evidence was identified to confirm the presence of such species at such PRFs.
- 7.8 The following bird species were also encountered during the survey (see **Table 7.1**).

Table 7.1 – Bird species encountered during the survey.

Species	Scientific Name	Status
Carrion Crow	<i>Corvus corone</i>	Green
Blackbird	<i>Turdus merula</i>	Green
Great Tit	<i>Parus major</i>	Green
Wood pigeon	<i>Columba palumbus</i>	Green
S.41 - a bird listed on section 41 of the Natural Environment Rural Communities Act 2006 (NERC Act) LBAP - A local biodiversity action plan listed species Q - Qualifying species of nearby SSSI site(s) SPEC - a species of conservation concern, Amber or Red, Red being the highest conservation priority		

Great Crested Newt (GCN)

- 7.9 In respect to GCN, ten standing water bodies exist within a 250-metre radial buffer of the Site boundary as identified by satellite imagery and the daytime survey; no ponds were identified within the Site boundary. Pond 1 was scored for Great Crested Newt (GCN) value using the industry standard habitat suitability index (HSI) assessment, remaining ponds were not accessible due to being on private property and therefore not assessed.

- 7.10 The habitats present within the application site boundary and within the land of wider ownership predominantly comprise areas of closely cropped modified grassland, areas of hardstanding, hedgerows, garden shrubs and occasional trees. Hedgerows and shrub within the site may afford suitable commuting and foraging opportunities for GCN – such features are understood to remain undisturbed. The footprints of the development are limited to an area of hardstanding which is of little value to GCN though the use of the area for commuting GCN is considered possible, though unlikely.
- 7.11 As derived from the desktop assessment evidence of GCN in the locale included:
- The site lies within area considered suitable for GCN (DataMapWales, 2023)
 - Knowledge of GCN in the local area (Wrexham City Borough Council)
 - Identification of ten ponds within 250 of the application site boundary
- 7.12 The HSI results of Pond 1 are presented below (see **Table 7.2 - 7.3**). See **Figure 4.2** previous for visual aid in respect of pond layout.

Table 7.2 - HSI scoring chart (a suitability scoring method for GCN developed by Mr. L. Brady).

Great Crested Newt (GCN) HSI scoring				
HSI Score			Pond suitability	
<0.50	0.50 - 0.59	0.60 - 0.69	0.70 - 0.79	>0.80
Poor	Below Average	Average	Good	Excellent

Table 7.3 – HSI Quantitative Assessment of Pond 3

Pond ref	Pond 1	Summary of results
SI1 - Location	1	Optimal range
SI2 - Pond area	0.4	Pond area equates to approx. 250m ²
SI3 - Pond drying	1	Pond likely rarely dries
SI4 - Water quality	0.67	Invertebrate diversity considered moderate
SI4 - Shade	1	Approx. 10% of the shoreline shaded
SI6 - Fowl	0.67	No waterfowl observed to be present at time of survey though presence is considered possible
SI7 - Fish	0.67	No evidence of fish although aquatic vegetation obscures the view in areas
SI8 - Ponds	1	45+ ponds are located within 1km
SI9 - Terr'l habitat	0.67	A small area of tall vegetation and partially wooded areas exist adjacent to the pond as well as hedgerows and grassland which is subject to regular management
SI10 - Macrophytes	1	Abundant aquatic vegetation is present on the pond surface as well as emergent vegetation at pond edges; the cover totals approximately 70%
HSI	0.78	'Good'
Grid reference: SJ 39926 42121. Refer to Plates 17 and 18		

NB: *The HSI for great crested newts is a measure of habitat suitability. It is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not do so. There is a positive correlation between HSI scores and the numbers of great crested newts observed in ponds. So, in general, high HSI scores are likely to be associated with greater numbers of great crested newts. However, the relationship is not sufficiently strong to allow predictions to be made about the numbers of newts in any particular pond.*

- 7.13 No access to ponds 2-10 could be attained owing to their location within private land; without establishing if these ponds could support breeding GCN, it is not possible to fully predict the effects that the proposed development would have on GCN within the wider landscape. Nonetheless, owing to the application site and surrounding land being located within area considered suitable for GCN it is assumed that all ponds within 250m of the application site are of 'Good' suitability with regard to GCN. Cloy Lane and Cae Dyah Lane act as a moderate barrier to dispersal for GCN potentially present in ponds to the west, south and southeast – ponds located to the northeast, the closest of which is Pond 1 are considered to be within feasible connectivity to the application site.
- 7.14 Considering the low-impact and localised nature of the proposals which are to occur on an area of hardstanding ground which is considered unsuitable habitat for GCN the proposals are unlikely to pose significant risk to GCN populations present within the local environment. Impacts to GCN would likely be limited to the potential commuting presence of GCN within the proposed works area during the construction phase of the works.

Other Herptiles

- 7.15 Due to the ruderal vegetation on Site and the surrounding semi-natural habitats, which include woodland, hedgerow and scattered scrub, the application site could be used by generalist, more robust common amphibians including common frog (*Rana temporaria*) and common toad (*Bufo bufo*) for foraging, subject to their presence in the landscape. Risks to amphibians would likely be limited to commuting during the construction phase of the project.

8.0 Conclusions & Recommendations

Bats

- 8.1 Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by **Appendix I**, the dwelling at Fair View determined to offer ‘**Moderate**’ bat roost suitability in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016), warranting the requirement for further survey effort at the site before an impact assessment can be concluded given the proposals can cause disturbance or roost damage subject to presence.

Table 7.3 Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).		
Low roost suitability	Moderate roost suitability	High roost suitability
One survey visit. One dusk emergence or dawn re-entry survey ^a (structures). No further surveys required (trees).	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey. ^b	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. ^b

Figure 8.1 – Bat Conservation Trust extract

- 8.2 It is recommended that two dusk / dawn emergence / re-entry surveys are conducted during the active season of bats (May – August, extending into September), in order to establish if / how the building is being used by bats, and if so, identify the species present, abundance, roost locations and flight lines around the site following emergence / re-entry. Two surveyors would likely be required to monitor the potential roost features described.
- 8.3 The applicant should be aware that, if during the further survey, evidence is gathered that confirms bat(s) or their roost(s) are found on site and will be impacted upon, then an EPSML may be required to legally commence with the proposals.
- 8.4 Natural England provides information and guidance about licensing and the following extract is included in that guidance: -

“If you intend to apply for a licence for development, you are advised to seek the guidance of a consultant ecologist. Natural England's view is that a licence is needed if the consultant ecologist, based on survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably likely to result in an offence under the Conservation of Habitats & Species Regulations 2019 (as amended).

If the consultant Ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed then no licence is required. However, in these circumstances Natural England would urge that reasonable precautions be taken to minimise the effect on European protected species should they be found during the course of the activity. If European protected species are found, cease the work until you have assessed whether you can proceed without committing an offence. A licence should be applied for if an offence/s is unavoidable, and the work should not commence until a licence is obtained.

The application should be completed by the developer and a consultant ecologist. The ecologist will need to be able to demonstrate to the satisfaction of Natural England that they have the relevant skills and knowledge of the species concerned.”

- 8.5 Where more detailed bat surveys are recommended by the Ecologist, following an initial daytime investigation, then Local Planning Authorities, on the advice of their ecological advisors, may not determine the application until such time that all relevant information is gathered, i.e., by conducting dusk / dawn surveys. The advice that is provided by the ecological advisors is also in accordance with the obligations placed upon Local Authorities by way of its duties under the Conservation of Habitats & Species Regulations 2019 (as amended). Therefore, it would be prudent to make enquiries to the relevant departmental Planning Officer before submitting a Planning Application that includes an ecological survey report that recommends more detailed surveys.
- 8.6 Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging/commuting bats in the landscape, particularly if increased light spillage occurs in areas of that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the surrounding treelines. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Lighting Guidelines for further information.

Appropriate luminaire specifications: Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires.

All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability. Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Predicting where the light cone and light spill will occur: There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels: The light should be as low as guidelines permit. If lighting is not needed in any particular area, do not light. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site.

Please refer to the 'Landscape and urban design for bats and biodiversity' (*Gunnell et. al.*, 2012, Bat Conservation Trust) Guidance Note 8 'Bats and Artificial Lighting' 2018, Bat Conservation Trust for further information.

Breeding Birds

- 8.7 No impacts are applicable in relation to any Sch.1 (WCA) specially protected bird species such as barn owl, and no further surveys or recommendations are necessary in relation to specially protected birds.
- 8.8 In relation to more common bird species, no evidence of breeding within the building was found although potential for species such as swift and wren (for example) exists at areas identified to have potential for roosting bats. In addition, the shrubs, hedgerows, and trees

present within and around the Site could offer small birds nesting habitat, particularly during the breeding bird season.

8.9 In the interests of potential impact avoidance it is recommended that any proposed works which may impact the areas of nesting potential, such as the building, vegetation clearance or works to trees, should be undertaken outside of the nesting bird season; a check of the adjacent field should also be carried out to assess for ground nesting birds, which are more sensitive to disturbance and should be afforded greater buffers. The nesting bird season is weather dependent but generally extends between March and September inclusive (peak period March – August). For works within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing. If birds are found nesting, any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally, for example via the implementation of an appropriate buffer zone (species dependent) around the nest in which no disturbance is permitted until the nest is no longer in use.

8.10 As a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions in addition to those described. Recommendations are provided within **Appendix II**.

NB: *All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected from destruction, damage and disturbance under the Wildlife & Countryside Act 1981 (as amended). It is a punishable offence to interfere in any way with an active nest.*

Herptofauna

Great Crested Newt & Wider Herptofauna

8.11 Regarding great crested newt (GCN), the results of both the desktop and field study suggest that it is possible that commuting GCN may be present within the proposed works area during the construction phase of the project, though this is considered unlikely owing to the unfavourable nature (hardstanding ground) of the proposed works area. Additionally, it is considered possible that GCN may use any piled building materials that may be present during the construction phase of the works as refugia.

8.12 Additionally, common amphibians could also utilise the works area of the application site for commuting purposes and/or utilised piled building materials during the construction phase of the works as refugia. Any clearance and habitat management should therefore have due regard to local wildlife; to this effect, Reasonable Avoidance Measures (RAMs) outlined below should be implemented at all times during the construction phase of the works to prevent any harm occurring to GCN and wider herptofauna:

- Materials that may cause entrapment such as plastic / metal fencing should not be left around the site following the cessation of daytime work.
- Trenches **must** be covered at the end of each working day.
- Any excavations which cannot be covered will include ramps (at an angle of no more than 45°) to allow any animal that may become trapped to escape.
- Any chemicals or harmful materials will be stored so that they cannot be accessed herpetofauna,
- Fires must not be used as a means of the disposing of waste materials.

- 8.13 Should any amphibians be encountered within the works area, they should be handled with wet gloves to prevent impact / injury and moved to an area of like for like habitat outside of the works area away from potential harm. Any areas suspected as being potential refuge areas for amphibians that may be created during the construction phase of the works should be dismantled via a soft demolition, to ensure that no amphibians are harmed.
- 8.14 The applicant and all contractors would be aware that if at any stage newts are encountered during works, or at any other stage of the programme of works, such works would be required to immediately cease and the Ecologist / ECoW would be made aware as to provide further guidance, if an Ecologist is not already present.
- 8.15 The applicant should be aware that where it is discovered great crested newts would be impacted by the proposals, a development licence (options include District level licence, traditional development mitigation licence, low impact class licence or other) informed by survey data and a suitable mitigation strategy may be required to legally proceed with the works. In some cases, a licence may not be necessary where risks can be avoided, minimised or mitigated for through reasonable avoidance measures (RAMs), if the consultant Ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed.

Biodiversity Enhancement

- 8.16 As a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions in addition to those described. Further recommendations, regarding bats, birds, native species and invertebrates are provided within **Appendix II**.

9.0 Bibliography

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Appendix I: Site Photographs



Plate 1 – Character of the northern gable elevation of the dwelling

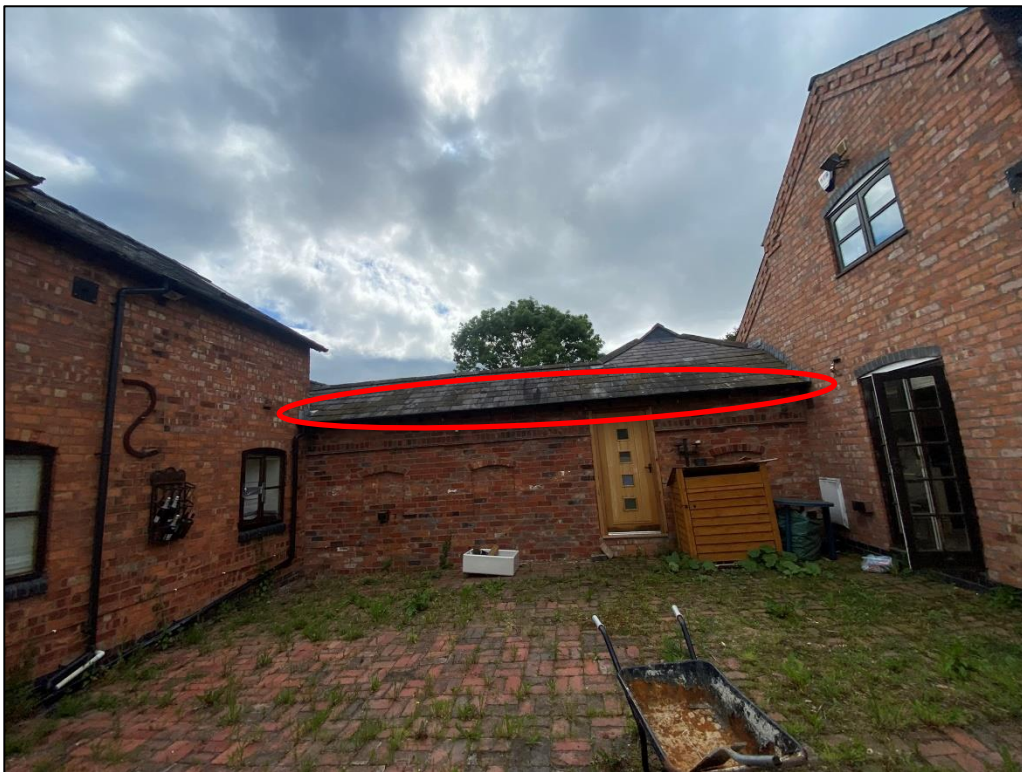


Plate 2 – Adjoining section of the dwelling which features potential roost features along the circled location



Plate 3 – Character of the northerly adjoining building



Plate 4 – Character of the courtyard where works are proposed to occur



Plate 5 – Character of the southern gable elevation of the dwelling



Plate 6 – Character of the eaves present throughout the majority of the dwelling; the presence of the pictured grate restricting access to the loft space by bats and/or birds



Plate 7 – Character of the rear of the dwelling / eastern elevation



Plate 8 – Character of a dormer window located to the north of the dwelling



Plate 9 – Open eaves located at the adjoining portion of the building



Plate 10 – Further character of the open eaves



Plate 11 – Character of the eastern elevation of the adjoining section of the building



Plate 12 – Further character of the eastern elevation of the adjoining section of the building



Plate 13 – Open eaves at the adjoining section of the building



Plate 14 – Internal character of the loft space above the dwelling



Plate 15 – Further character of the loft space above the dwelling



Plate 16 – Further character of the loft space above the dwelling



Plate 17 – Character of Pond 1



Plate 18 – Further character of Pond 1

Appendix II: Biodiversity Enhancement: General Recommendations

Indicative Enhancement

Bats

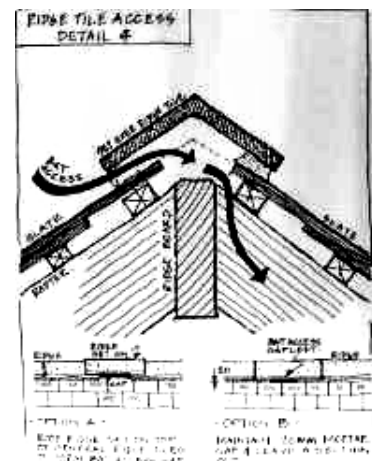
Integrated bat box

The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



Ridge access

Where appropriated, ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.



Soffit access

Where soffits are instated at gable elevations, roost provision may be instated in the form of a soffit bat box with internal roosting space.



Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees may include the Eco Kent Bat Box, with more examples present online.



Breeding Birds – Swallow nest cups

The Swallow Nest Cup consists of a woodcrete nesting bowl which is attached to a wooden panel of formaldehyde-free chipboard. The nests should be placed inside outbuildings such as sheds, barns or stables leaving a distance of at least 6cm between the top of the nest and the ceiling. You should ensure there is always access for the birds through an open window or sky-light. Swallows are sociable birds, but multiple nests should not be placed at less than 1m intervals. Cleaning of the bowl is recommended, although not absolutely necessary.



Breeding Birds - House Sparrow

The Sparrow Terrace has been designed to help redress the balance of falling House Sparrow numbers. The current UK population is now half of what it previously was in 1980 and this is widely attributed to habitat destruction and lack of suitable nesting spaces. House Sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of buildings.



Breeding Birds - Other

This traditional design has proved to be highly effective in attracting Robins, as well as other small species such as Black Redstart, Spotted Flycatcher and Wren. It is designed to be installed on the walls of houses, barns, garden sheds or other buildings and should be hung so that the entrance is to one side (at an angle of 90° to the wall). The front panel can be easily removed for cleaning.

This type of box should not be made conspicuous on a tree or bush because small predators can enter through the unprotected opening. By hanging on a wall, predators won't be able to reach the box. Alternatively hide the box in Ivy, Honeysuckle or other climbing plants.



Barn owl boxes

This standard design is well suited for supporting the breeding requirements of barn owl. The Eco Barn Owl Nest Box is constructed almost entirely out of recycled plastic with the exception of the wooden base. The recycled plastic means that this nest box is extremely robust, requires virtually no maintenance and has a long life expectancy. The wooden base, made from FSC certified chip-board, absorbs moisture from the nest and should be replaced every few years. The black and green colouration ensures the nest box blends into its surroundings. The curved roof integrates with the sides of the box and overlaps the back and the front of the box to ensure the inside of the box remains dry.



Features include: Exercise platform for young owls; integrated side access hatch for cleaning or monitoring; entrance hole at correct height to prevent young owls getting out before they have reached maturity.

Invertebrates - Bee bricks

The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Alternatively, it can be used as a standalone bee house in your garden or wild patch. It will provide much needed nesting space for solitary bee species such as red mason bees and leafcutter bees, both of which are non-aggressive.

Each Bee Brick contains cavities in which solitary bees can lay their eggs before sealing the entrance with mud and chewed-up vegetation. The offspring will emerge the following spring and the cycle will begin again. Each cavity goes part way into the brick, which is solid at the back. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used.

Available in a choice of four colours: white grey, dark grey, yellow and red.

Specification

- * Material: Concrete
- * Origin: Cornwall, UK
- * Dimensions: W 215mm x D 105mm x H 65mm
- * Weight: 2.9kg
- * Colours: White grey, yellow, dark grey and red



Native Planting and/or Landscaping

New feature landscaping should incorporate native woody plants as opposed to non-native species that are of significantly less benefit to biodiversity. Species such as Blackthorn (*Prunus spinosa*), Honeysuckle (*Lonicera periclymenum*), Rowan (*Sorbus aucuparia*), Guelder-rose (*Viburnum opulus*) and Hawthorn (*Crataegus monogyna*) are native and will provide a valuable resource for a myriad of wildlife as opposed to non-native, exotic species which are generally much less effective, particularly to pollinator groups including bees, butterflies and moths.

Suitable Trees	Suitable Woody Shrubs
English Oak (<i>Quercus robur</i>)	Hawthorn (<i>Crataegus monogyna</i>)
Rowan (<i>Sorbus aucuparia</i>)	Honeysuckle (<i>Lonicera periclymenum</i>)
Wild Service Tree (<i>Sorbus torminalis</i>)	Guelder Rose (<i>Viburnum opulus</i>)
Silver Birch (<i>Betula pendula</i>)	Elder (<i>Sambucus nigra</i>)
Ash (<i>Fraxinus excelsior</i>)	Wild Privet (<i>Ligustrum vulgare</i>)
Goat Willow (<i>Salix caprea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	