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Inspection & Assessment in relation to Bats & Breeding Birds

May 2023

Wrexham Building & Joinery Ltd

Rivulet Road

Wrexham

LL13 8DY

National Grid Ref: SJ34094988



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Executive Summary

As part of an ongoing planning application at Wrexham Building & Joinery Ltd in Wrexham (Application Reference Number: **P/2023/0082**), Tyrer Ecological Consultants Ltd carried out a daytime preliminary roost assessment in relation to bats with an inclusive inspection for breeding birds in April 2023. Proposals for the site are understood to involve the demolition of numerous buildings onsite followed by the erection of a new structure, alongside the retention and renovation of one building. See **Appendix III** for existing and proposed site plans.

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

Bats:

Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by **Appendix I**, B1-B4 at Wrexham Building & Joinery Ltd are determined to offer '**Negligible**' bat roost potential in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016); no further surveys are required in relation to bats.

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.

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 common birds, no evidence of breeding birds was encountered within the surveyed buildings, with the site considered unsuitable for use by urbanised bird species. No further surveys or recommendations are therefore necessary in relation to common bird species.

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 birds, native species and invertebrates are provided within **Appendix II**.*

Table of Contents

1.0 Introduction & Reasons for Survey

2.0 Protected Species & Their Requirements

3.0 Protected Species in Wrexham

4.0 Survey Methodology

5.0 Limitations

6.0 Desk Study Results

7.0 Field Study Results

8.0 Conclusions & Recommendations

9.0 Bibliography

Appendix I: Site Photographs

Appendix II: Biodiversity Enhancement: General Recommendations

Appendix III: Existing and Proposed Site Plans

1.0 Introduction & Reasons for Survey

- 1.1 As part of an ongoing planning application at Wrexham Building & Joinery Ltd in Wrexham (Application Reference Number: **P/2023/0082**), Tyrer Ecological Consultants Ltd carried out a daytime preliminary roost assessment in relation to bats with an inclusive inspection for breeding birds in April 2023. Proposals for the site are understood to involve the demolition of numerous buildings onsite followed by the erection of a new structure, alongside the retention and renovation of one building. See **Appendix III** for existing and proposed site plans.
- 1.2 The aim of the survey was to ascertain if the buildings onsite were of value to bats whilst an assessment for birds was also carried out. If any potential roost features (PRFs) 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).
- 1.3 If additional surveys are required following the initial site visit, this report will outline the details of those further requirements.
- 1.4 If it was determined that bat(s) or their 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.
- 1.5 If evidence indicated breeding birds may be impacted by proposals, tailored recommendations would be made accordingly, species pending.
- 1.6 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.
- 1.7 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

Bats

- 2.1 All British bats and their **roosts are afforded full protection under the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats and Species Regulations (2019) (EU Exit). When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of Regulation 7 of the Regulations, and therefore has a statutory duty, as the local authority, to have due regard to the provisions of the Regulations in the exercise of its functions.
- 2.2 Uses of Buildings by Bats
- a) Summer breeding roost (May – August)
 - b) Hibernation roost (October – March)
 - c) Transitional or temporary roost (other months)
- 2.3 Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance; climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

*** The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats and Species Regulations (2019) (EU Exit) (Regulation 43 (d) the term roost is not used but refers to “a breeding site or resting place of such an animal” and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used is legally protected whether or not bats are in occupation.*

Birds

- 2.4 All wild birds, no matter how common, their eggs, young and nests, whilst being built or occupied, are protected under both the Wildlife and Countryside Act (WCA 1981) and Natural Environment and Rural Communities Act (NERC Act 2006). Birds listed on Schedule 1 of the WCA 1981, for example barn owl (*Tyto alba*), are afforded a greater level of protection and are protected also from disturbance.
- 2.5 Any work that would damage an occupied nest, eggs or young of breeding birds must be avoided; any damage to nests that may occur as a result of the development should be outside of the main breeding bird season (March – August). On occasions nests can become unoccupied during the breeding season but the status of the nest(s) should be determined by a suitably experienced ecologist before any damage takes place.

Policy

- 2.6 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.
- 2.7 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).

2.8 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.”

2.9 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.

2.10 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.

2.11 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.”

2.12 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.”*

- 2.13 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.
- 2.14 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.
- 2.15 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 County, 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 Barn owl (*Tyto alba*) are a distinctive, widespread species of raptor protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); they are distributed throughout the UK and will use tussock-forming grasslands, rough field margins, ditches and roadside edges for hunting purposes, they typically use barns / abandoned buildings and tree hollows for nesting or roosting use. In rare instances occupied dwellings can support owls. Additional to protection from nest destruction, Schedule 1 listed species nest sites are also protected from disturbance.

4.0 Survey Methodology

- 4.1 As part of the Inspection & Assessment in relation to Bats & Breeding Birds report, a desk-top 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, alongside DataMapWales, which holds protected species and habitat information for Wales. These sites were utilised to further inform conclusions concerning such species in the context of the study site and its proposed development.
- 4.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 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 serving the area – 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 a residential property, 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 (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 as made **bold** above can be applied at Wrexham Building & Joinery Ltd, whilst following best practice, it is considered unnecessary to conduct a commercial data request following the desk study effort and daytime assessment at this time, which offers a proportionate level of survey effort. If, however, a data search is considered necessary by the Local Authority advisory body to inform the ecological impact assessment following any further surveys recommended in this report, 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 In context with the above, a diurnal inspection and assessment of the buildings and the immediate environment in relation to bats and breeding birds was conducted on 4th April 2023 in sunny, clear conditions (4°C), wind 1/12 (Beaufort scale), 0% cloud, by the following surveyor (see **Table 4.1**):

Table 4.1 – Site surveyor credentials

Name	Description of most relevant credentials
Mr. H. Mulligan	• Trainee Ecologist with a range of training and experience, • 1 year as a professional ecologist, • MBiolSci in Biological Sciences (Zoology), • Qualifying CIEEM, • Accredited agent on the Natural England Class 2 bat licence of Mrs K Wilding (CLS-14227), • Accredited agent on the Natural Resources Wales bat licence of Mrs. K. Wilding (S086297/1)

- 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 buildings were 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. An internal assessment of the buildings took place with the aid of a high-powered torch for evidence of bat use, which mainly includes bat droppings and / or prey items, or the incidental presence of live or dead animals, and investigated for evidence of breeding birds, which broadly involves a search for nesting materials, presence of pellets or accumulated faeces and / or dead juveniles / hatchlings.
- 4.9 External elevations were investigated with the aid of a high-powered torch and close focus binoculars (where necessary) for places that can 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 (PRF) 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.

- 4.11 Trees on site, subject to their presence, were inspected for places that may be of value to bats and to determine if evidence of use was present; this typically involves a search for potential roost features along with an investigation of those features using a high-powered torch or close focus binoculars. Potential roost features can include woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed lifted bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached Ivy with stem diameters in excess of 50mm or bat / bird boxes. Trees (where present) were also checked for evidence of nesting birds and suitability for relevant species.
- 4.12 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 – BCT guidelines extract

- 4.13 An assessment of the buildings was conducted when birds are within their breeding season (this is typically March – August inclusive). Elevations were inspected for 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
- House sparrow (*Passer domesticus*): BoCC red status
- House martin (*Delichon urbica*): BoCC red status
- Swift (*Apus apus*): BoCC red status

- 4.14 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 bird species.
- 4.15 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.
- 4.16 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 surveyor Mr. Mulligan.

5.0 Limitations

- 5.1 The survey was conducted outside of the bat active season, therefore there was a lower probability of encountering direct evidence of bats. Roost potential and suitability of potential roost features can, however, be adjudged as decisively as within the active season of bats, saving time and unnecessary delay to applicants, thus frequently the assessment can be as conclusive as if it was carried out in the active season. Timing is not, therefore, considered a constraint in this instance.
- 5.2 The survey took place within the early stages of the breeding bird season (typically March – September inclusive) at a time when evidence of breeding birds can be more apparent. Survey timing is not considered a constraint in this instant.
- 5.3 All areas of the site were fully accessible and there were no external visual constraints. 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 site of the proposed works (referred to in-part as “the application site” and “the site”) is situated to north of Rivulet Road in Wrexham, approximately 1.0 kilometres south-east of the city centre (see **Figure 6.1** below).



Figure 6.1 – Location of the application site (red boundary) within the landscape, with coloured dots denoting Tyrer Ecological Consultants data records (© Google Earth Pro 2022/23)

- 6.2 The application site consists of several interconnected workshop buildings and a small, tarmacked yard, previously in use as a builder’s premises. The immediate habitat consists of a primarily suburban environment, with several commercial premises, residential properties and a small green space located along Rivulet Road. In contrast to this, the site directly borders the River Gwenfro to the north, with a line of trees running parallel leading to the River Gwenfro Playground to the north-east, an urban park consisting of amenity grassland and small areas of woodland.
- 6.3 The extending environment is urbanised in all directions, with developments of semi-detached and terraced housing dominating throughout, while large, industrialised areas characterised by retail parks, shopping centres and supermarkets are located within the city centre. Beyond the edges of the city approximately 1.0 kilometres to the south lies the National Trust managed Erddig country park, which features expanses of grassland, meadows and abundant woodland alongside several lakes and rivers. Other natural and semi-natural habitats in proximity to the site are limited to urban parks within the city such as Bellevue Park and sports facilities such as the Queensway Complex.

- 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.*

Statutory designated sites

- 6.5 There is one statutory designated site 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
Sontley Marsh (1.6 kilometres south)	Site of Special Scientific Interest (SSSI)	A 13ha site that is one of the best wetland examples in North Wales of the southern mesotrophic mire that is characteristic of south-west Wales. The site is found on the western valley side of the Gefeiliau Brook and is fed by a series of springs and run-off. It consists of extensive areas of alder woodland, tall fen vegetation, and herb-rich damp grassland.

Notable species records

- 6.6 Tyrer Ecological Consultants Ltd have previous and ongoing projects involving bats within the 2.0 kilometre area surrounding the application site – as such, the following biological data (see **Table 6.3**) is readily available to the Ecologist from the company database – all data has been previously submitted to the LERC serving the area, which, in this case, is Cofnod.

Table 6.3 – LERC submitted biological data records collected by Tyrer Ecological Consultants Ltd

Year	Distance from Site	Context (where relevant)
2015	0.4 kilometres north	Commuting and foraging by x2 common pipistrelle
2016	1.6 kilometres south	Roosts of x5 soprano pipistrelle, x11 brown long-eared, x1 Brandt's and x4 common pipistrelle
2019	1.6 kilometres south	Roosts of x8 soprano pipistrelle, x14 brown long-eared, x3 Myotis sp., x1 lesser horseshoe and x7 common pipistrelle
	1.9 kilometres south-west	Daubenton's, lesser horseshoe, natterer's, soprano pipistrelle, common pipistrelle, Brandt's, brown long-eared, whiskered and noctule all recorded within woodland
2020	0.6 kilometres north	Absence of bat activity during survey effort
2021	1.9 kilometres north-west	Commuting and foraging by x2 common pipistrelle

Wrexham Building & Joinery Ltd, Rivulet Road, Wrexham, LL13 8DY
Inspection & Assessment in relation to Bats & Breeding Birds

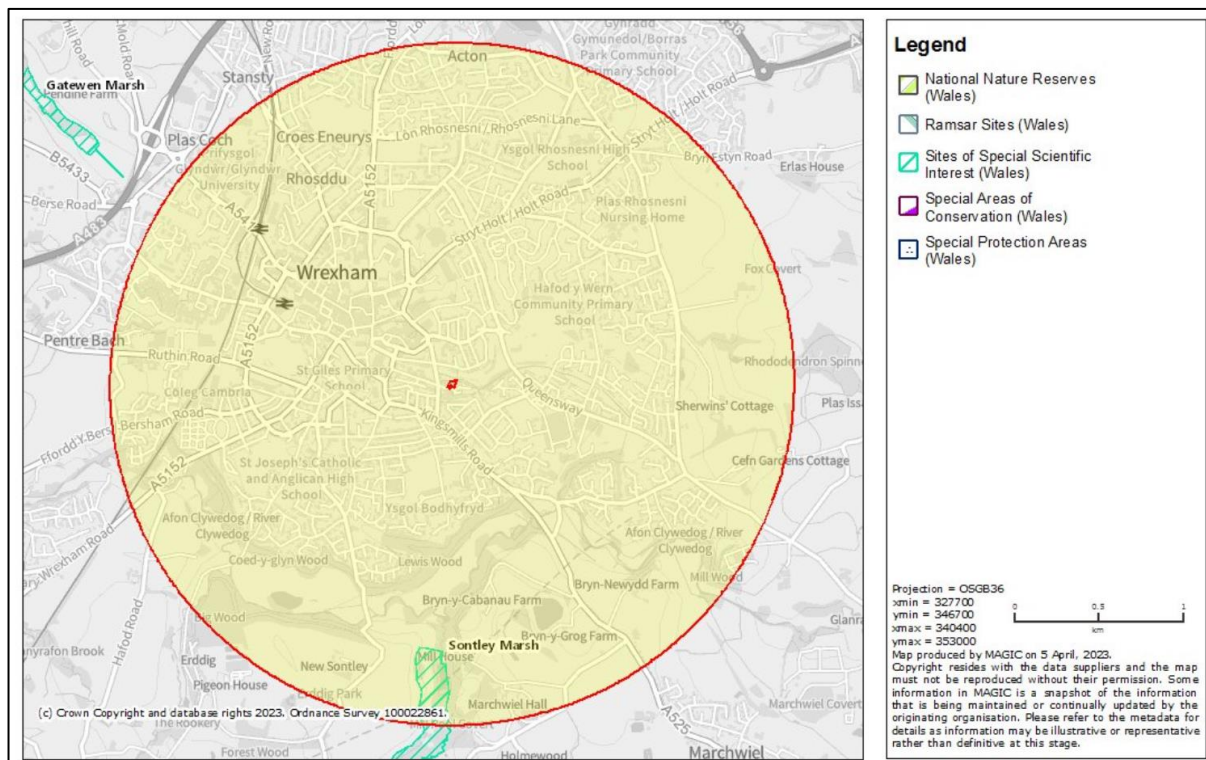


Figure 6.2 – Designated site data for the area within 2.0 kilometres of the application site (© MAGiC Maps 2023)

7.0 Field Study Results

Bats

- 7.1 **Figure 7.1** shows the respective locations of the buildings within the application site boundary; **Table 7.1** below describes each building in respect to their potential to offer roost features for bats (both internally and externally) and includes further information regarding evidence of bats where applicable. It is understood that buildings B1-B3 are to be demolished during the works, while B4 will be retained and renovated.

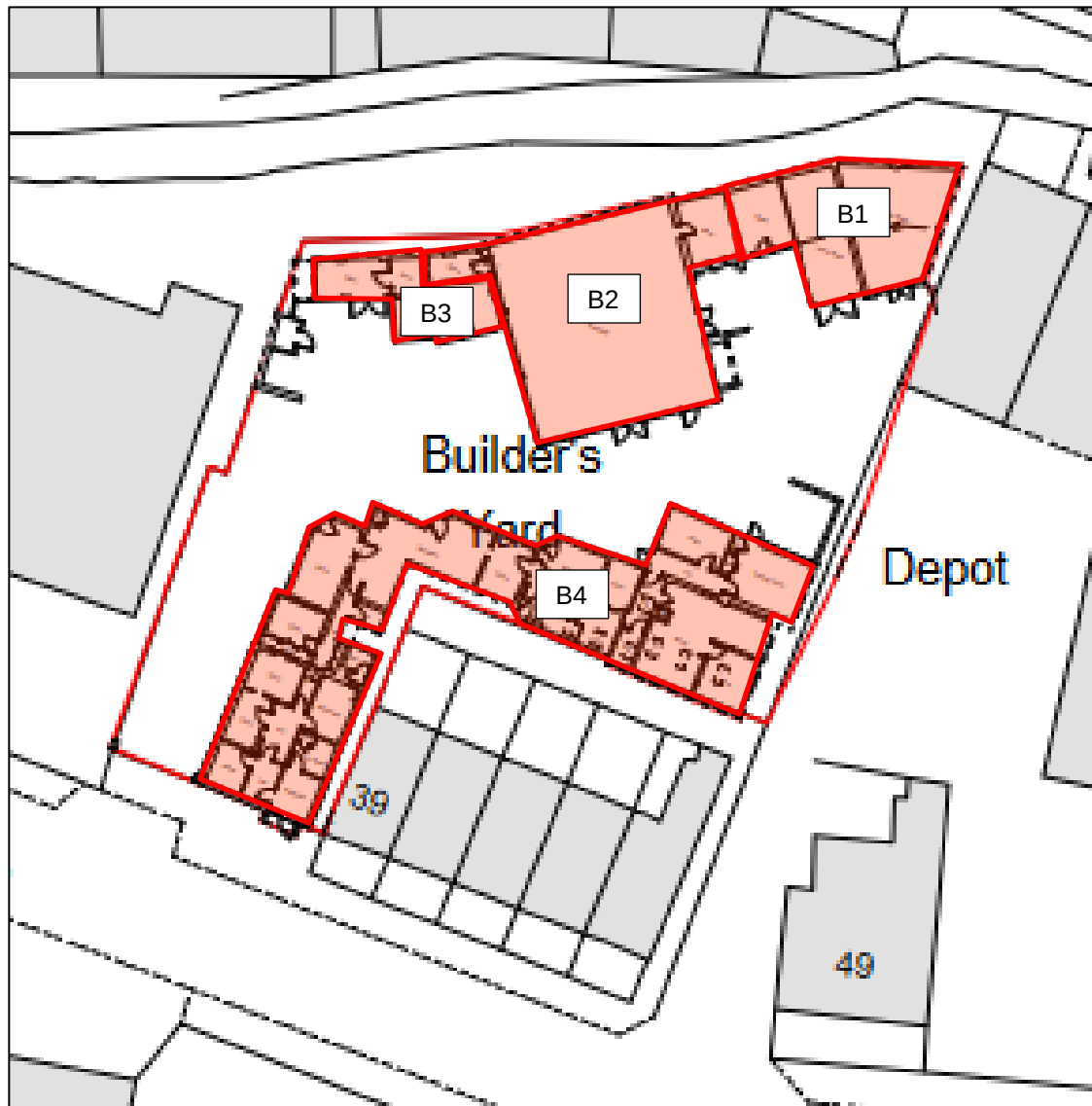


Figure 7.1 – Locations of the buildings within the red line boundary (Adapted from Blueprint Architectural Services)

Table 7.1 – Building descriptions at the application site with included bat assessments.

Building B1
B1 is a single storey breezeblock-built and timber framed shed-like structure at the north-east of the site with a flat corrugated iron and timber roof covered with bitumen felt, and approximate maximum dimensions of 9 metres x 15 metres x 3 metres (Length x Width x Height). The building features components such as timber doors and timber fascia and in respect of its condition, whilst the surveyor is not qualified to assess structural state, the aesthetic condition of the building was adjudged to be relatively poor, with the roof collapsing and rotted in parts. Internally, no loft void is present in any part of the building. The interior of the building is cool, draughty, and damp, and is generally dark but has some minor light ingress throughout in areas of degradation. Building B1 is considered broadly unsuitable for the breeding requirements of loft-dwelling species such as brown long-eared bat (<i>Plecotus auritus</i>, BLE), as these are species which prefer dark, open loft spaces with consistent thermal conditions. No evidence of BLE bats such as droppings or prey items was encountered despite a meticulous search. No underlining is present beneath the roofing materials in any part of B1; where present, underfelt or other such roof lining typically improves a buildings value to bats, notably for crevice-dwelling bats of the <i>Pipistrellus</i> genus, whereby the bats roost between the lining and the roof cover material provided external opportunities exist. Again, no evidence of crevice dwelling bats was identified at the site, however this is often the case due to the crevice-dwelling nature of these species. NB: <i>The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings where 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.</i> Externally, a single potential roosting feature (PRF) was identified on B1, in the form of a lifted fascia on the southern elevation; however, this gap was heavily cobwebbed, and did not appear to lead anywhere given the lack of loft space or underlining. Taking into account the lack of suitable potential roosting features as well as the poor internal character of the building, B1 is duly categorised as offering ‘Negligible’ bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).
Building B2
B2 is located directly west of B1; it is a large breezeblock-built and corrugated iron-shelled warehouse with flat timber roof covered in bitumen felt, and with estimated maximum dimensions of 15 metres x 13 metres x 4 metres. The building features components such as integrated skylights, timber fascia’s, and UPVC doors and windows. The building was adjudged to be in a moderate condition, with some deterioration internally but no evident damage externally. Internally, the building features a very minor roof void in parts above a false ceiling, with an apex of approximately 50 cm; the false ceiling has collapsed in many parts however, meaning that the void is damp, cool and draughty, highly illuminated and heavily cobwebbed.

Building B2 is therefore considered broadly unsuitable for the breeding requirements of loft-dwelling species and lacks a roof underlining throughout. No evidence of either loft- or crevice-dwelling bats was identified at the building despite a search.

No potential roosting opportunities were observed on the external aspects of the structure, with the building lacking any features that may allow access to the internal space or to a crevice opportunity beneath components.

Taking into account the lack of potential roosting features alongside the internal character of the building, B2 is duly categorised as offering '**Negligible**' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

Building B3

B3 is a single storey breezeblock-built and part-rendered building at the north-west of the site with a flat timber and bitumen covered roof, with features including timber fascia, doors and windows, and with approximate maximum dimensions of 14 metres x 5 metres x 3 metres. The building was considered to be in a moderate aesthetic condition, with some internal deterioration observed.

Internally, B3 has a minor void in its eastern-most section (apex approximately 30cm) above a false plaster ceiling, however this false ceiling has collapsed in part, and some of the void is evidently filled with rockwool insulation. The space is therefore cramped and partially illuminated but is relatively warm compared to the rest of B3 due to the insulation. The rest of B3 lacks a void and is thus open to the roof, and as such is noticeably cool, draughty and dark, but with minor light ingress in parts.

Building B3 is therefore considered broadly unsuitable for the breeding requirements of loft-dwelling species, while no underlining is present beneath the roofing materials; no evidence of either loft- or crevice-dwelling bats was identified despite a search throughout.

No PRFs were identified on the structure during the diurnal inspection, with the building lacking any features that may allow access to the internal space or to a crevice opportunity beneath components.

Taking into account the lack of potential roosting features alongside and the internal character of the building, B3 is duly categorised as offering '**Negligible**' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

Building B4

B4 is a modular, single storey building on the southern boundary of the site previously utilised as offices, with a flat timber and bitumen covered roof and approximate maximum dimensions of 30 metres x 25 metres x 4 metres, and features including integrated skylights, timber fascia's and UPVC windows. It was adjudged to be in a relatively good aesthetic condition, with no deterioration observed externally on the building.

Internally, the building features a false ceiling in parts creating a small void with an apex of approximately 50 cm, however this void is open in many areas given the lack of numerous tiles. The building is highly illuminated, dry, warm and non-draughty.

Building B4 is therefore considered broadly unsuitable for the breeding requirements of loft-dwelling species such as brown long-eared bats, while no underlining is present beneath the roofing materials; no evidence of either loft- or crevice-dwelling bats was identified despite a search throughout.

Externally, the building is lacking any features that may allow access to the internal space or to a crevice opportunity beneath components.

Taking into account the lack of potential roost features, building B4 is duly categorised as offering '**Negligible**' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

- 7.2 A line of trees is present adjacent to the site to the north along the river Gwenfro, however none of these were adjudged to offer any bat roost suitability. Trees should nevertheless be considered valuable in a local context in that they provide valuable foraging / commuting habitat for bats, offering shelter, cover and habitat connectivity when in foliage.

Breeding birds

- 7.3 In relation to WCA Sch.1 specially protected bird species, such as barn owl, no evidence to indicate use of the site by such species, or any suitability for use, was identified by the surveyor, with the wider environment considered highly unsuitable for this species.
- 7.4 In relation to more common bird species, no evidence of nesting, historic or recent, was located by the surveyor within the buildings, and no mature shrubbery located within the red line boundary offering any nesting opportunities.

Invasive Non-Native Species

- 7.5 Given that the Invasive Non-Native Species (INNS) Japanese knotweed (*Reynoutria japonica*), listed as such under Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) is known to grow along the banks of the river Gwenfro along Rivulet Road, an inspection for this species and any other INNS within the site boundary or adjacent land was also conducted; it was concluded that the site is absent of any INNS.

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**, B1-B4 at Wrexham Building & Joinery Ltd are determined to offer '**Negligible**' bat roost potential in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016); no further surveys are required in relation to bats.

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.

Figure 8.1 – Bat Conservation Trust extract on Negligible roost potential requirements

- 8.2 Bats are a transient species and buildings can deteriorate over time. In the highly unlikely event that bat(s), or evidence of bat(s), are found during the proposed works, then, as a legal requirement, the work at the site should immediately cease and an Ecologist should be contacted for further advice. If bat(s) or their roost(s) will be affected, then an EPSML may be required to legally commence with the works. See **Figure 8.2** for indicative evidence of bats.



Figure 8.2 – Evidence of bats – droppings on the left / a Common Pipistrelle bat on the right – indicative

- 8.3 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.

- 8.4 No recommendations are necessary regarding bats and trees, as there are no mature trees due to be affected by the proposed works.

Breeding birds

- 8.5 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.
- 8.6 In relation to common birds, no evidence of breeding birds was encountered within the surveyed buildings, with the site considered unsuitable for use by urbanised bird species. No further surveys or recommendations are therefore necessary in relation to common bird species.

INNS

- 8.7 No INNS were located within the site boundary or directly adjacent along the river Gwenfro, and as such no further recommendations are necessary in relation to any invasive species.

Biodiversity Enhancement

- 8.8 General recommended ideas to enhance the site in accordance with the principles of 'Biodiversity Net Gain: Good practice principles for development' (CIEEM et. al., 2019), are presented in **Appendix II**.

9.0 Bibliography

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- **Magic Maps Application**, 2023. Available from: www.natureonthemap.naturalengland.org.uk/MagicMap.aspx
- **Mitchell-Jones, A.J. and McLeish, A.P.** (Eds) (2004). *Bat Workers' Manual*, Joint Nature Conservation Committee, Peterborough.

Appendix I: Site Photographs



Plate 1 – *Internal character of B1*



Plate 2 – *Internal character of B1 continued*

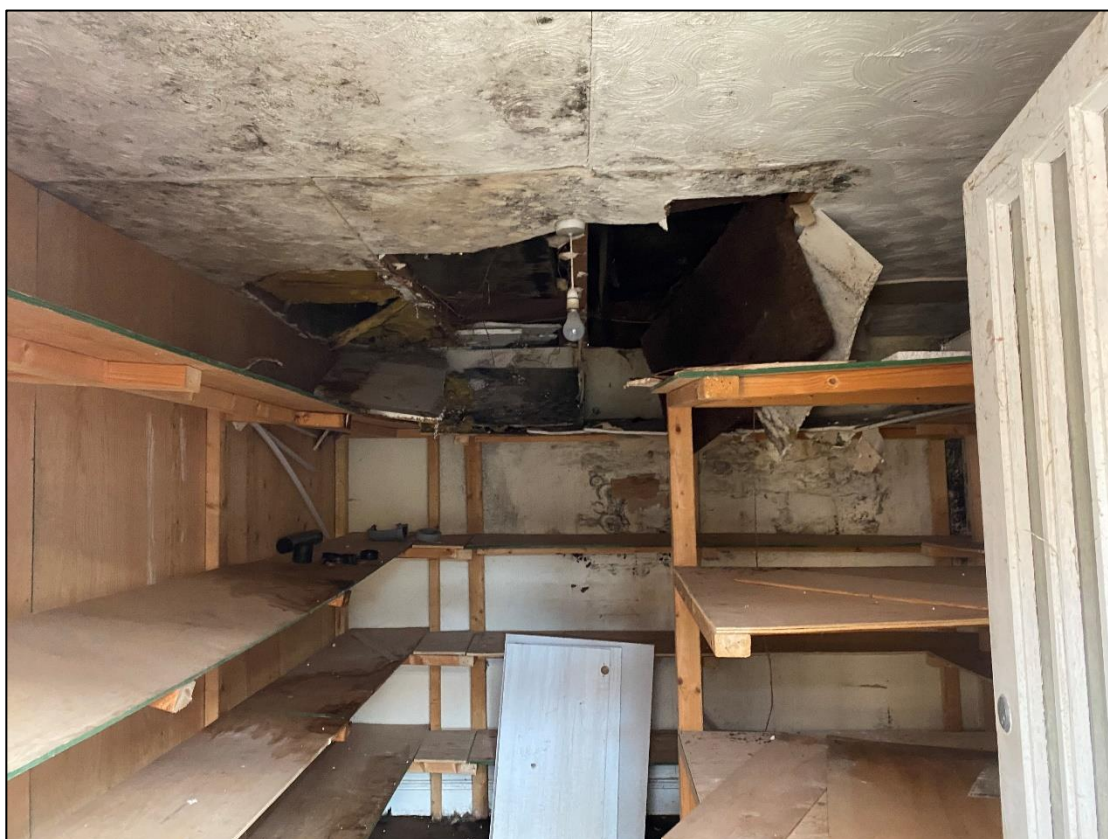


Plate 3 – *Final internal section of B1*



Plate 4 – *Nature of crevice beneath fascia of B1*



Plate 5 – Interior of B2

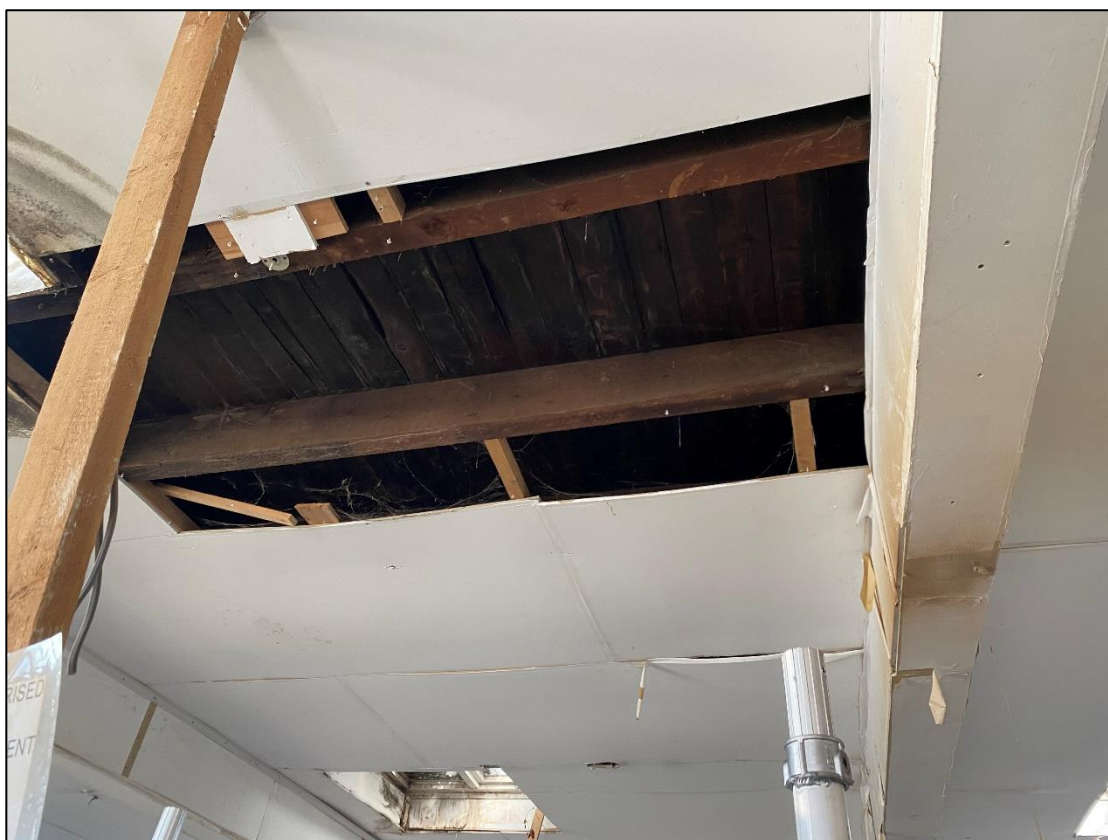


Plate 6 – Nature of small void present in B2



Plate 7 – The western elevation of B2



Plate 8 – Southern elevation of B3



Plate 9 – *Small void present within B3*



Plate 10 – *Rear elevations of B2 and B3 and tree line along the river Gwenfro*



Plate 11 – Northern elevation of B4



Plate 12 – B4 as seen from the south-west



Plate 13 – *Eastern elevation of B4*



Plate 14 – *Internal nature of B4*



Plate 15 – *Further angle of B4 internally*



Plate 16 – *Nature of small void within B4*

Appendix II: Biodiversity Enhancement: General Recommendations

Bats

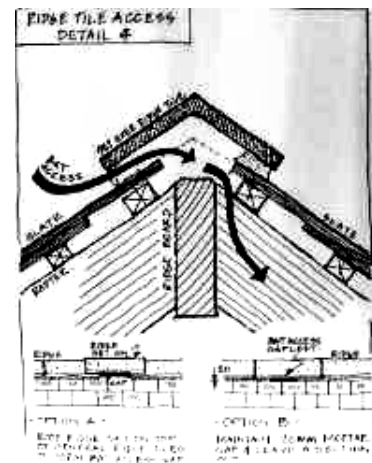
Integrated bat box

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 - 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.



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

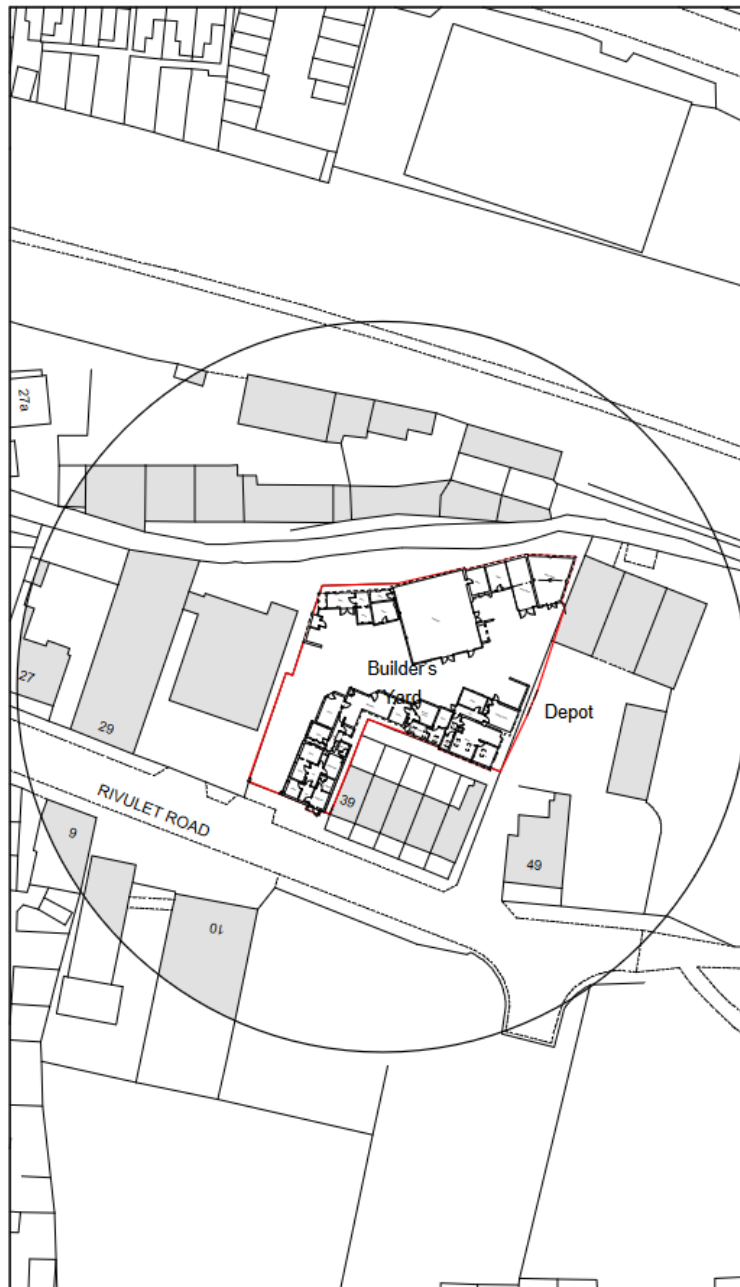


Native Planting and/or Landscaping

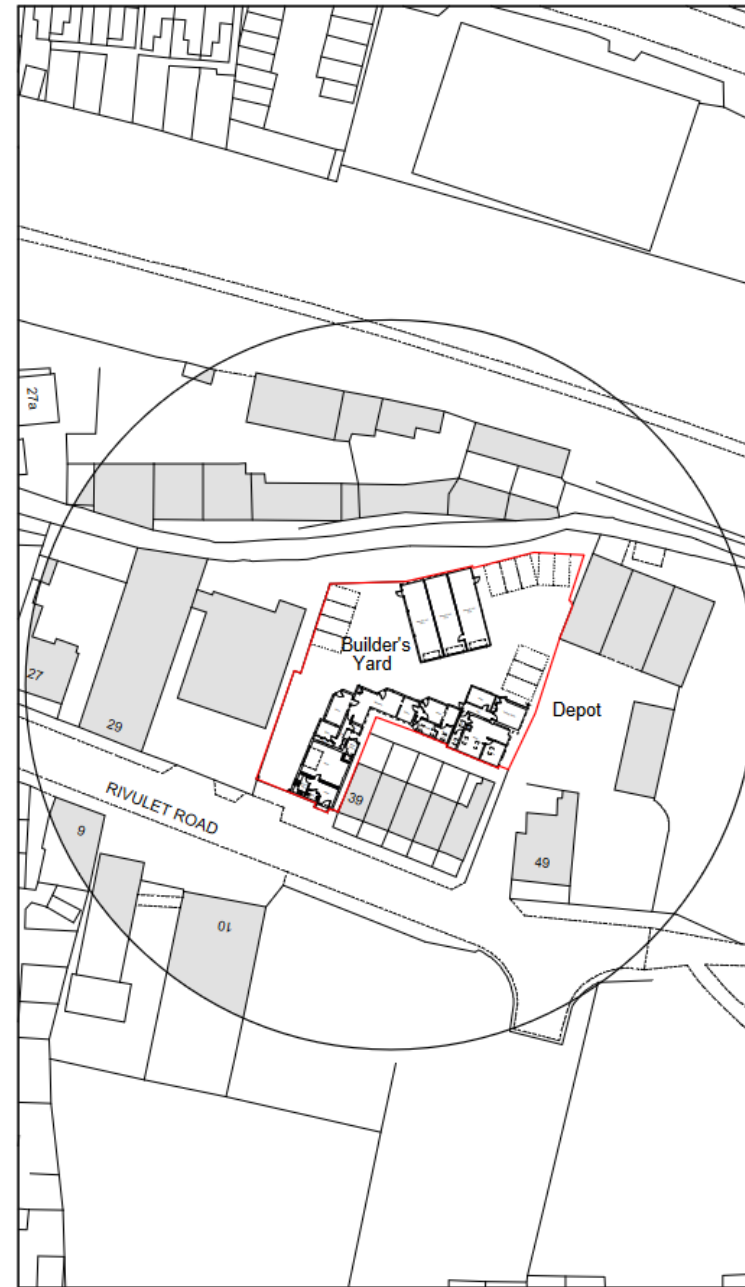
New feature landscaping should incorporate native woody plants as opposed to non-native species that are of significantly less benefit to biodiversity. Species such as Blackthorn (*Prunus spinosa*), Honeysuckle (*Lonicera periclymenum*), Rowan (*Sorbus aucuparia*), Guelder-rose (*Viburnum opulus*) and 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 torminialis</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 capraea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	

Appendix III – Existing and Proposed Site Plans



Existing Site



Proposed Site