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Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

Preliminary Ecological Appraisal

May 2020

Land at Wynnstay Yard

Ruabon

Wrexham

LL14 6DP

SJ 2939 4337



Land at Wynnstay Yard, Ruabon, Wrexham, LL14 6DP
Preliminary Ecological Appraisal

Document Title	Preliminary Ecological Appraisal
Prepared for	Blueprint Architectural Ltd
Prepared by	Tyrer Ecological Consultants Ltd

Author/Surveyor	Mr. Joshua Styles
Survey Date	05/02/2020
Reviewed by	Mrs. Kylee Wilding
Review Date	01/06/2020
Approved by	Ms. Kylee Wilding
Date of Issue	01/06/2020

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Executive Summary

As part of a planning application regarding a portion of land at Wynnstay Yard, Ruabon, a Preliminary Ecological Appraisal was undertaken by Tyrer Ecological Consultants Ltd during February 2020. It is understood that proposals involve the clearance of the site, followed by redevelopment to accommodate one new residential dwelling (Figure 1). Both tree and scrub features will be cleared in order to facilitate said proposals.

In accordance with section 6.4 of Planning Policy Wales (PPW), local planning policy and *Biodiversity Net Gain: Good practice principles for development* (CIEEM *et al*, 2019), a series of measures have been recommended within section 9.0 to ensure that the proposed development for the land at Wynnstay Yard does not result in biodiversity net loss, and that a net gain is achieved.

The following key ecological features and associated recommendations have been identified:

Vegetation: One invasive plant species was identified within the survey boundary in the form of Japanese Knotweed (*Reynoutria japonica*) (see Figure 7). *Eradication of this species on site is recommended. Following eradication, any spoil removed off site is to be treated as controlled waste and disposed of at a site authorised to accept such refuse, in line with relevant legislature, namely the Environmental Protection Act (1990).*

Bats: *Recommendations relative to lighting have been made within section 9.5 to ensure no negative impacts to favourable foraging habitats is undergone in the long-term.*

Terrestrial Mammals: Small pilings of cleared vegetation and debris have been made across parts of the site. *Recommendations relative to a precautionary approach have been made to ensure no impact to hedgehog ensues.*

Birds: Trees and areas of scrub and tall ruderal vegetation exists within the confines of the survey area which show suitability for nesting birds; the presence of nesting birds within the breeding season (March-August inclusive) is therefore considered to be likely. *It is therefore recommended that clearance operations are undertaken outside of the breeding season, unless it can be conclusively determined by a suitably qualified ecologist that nesting birds are absent.*

Biodiversity Net Gain: A series of recommendations have been given within Appendix III which provide opportunities for net gain at the development site. Enhancement opportunities include recommendations relative to landscaping and provision of nest boxes and hedgehog highways.

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1.0 Introduction & Objectives

1.1 As part of a planning application regarding a portion of land at Wynnstay Yard, Ruabon, a Preliminary Ecological Appraisal was undertaken by Tyrer Ecological Consultants Ltd during February 2020, in accordance with the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and other best practice guidance, including the British Standard 42020:2013. It is understood that proposals involve the clearance of the site, followed by redevelopment to accommodate one new residential dwelling (Figure 1). Both tree and scrub features will be cleared in order to facilitate said proposals.

1.2 Ecological surveys, particularly where a specially protected / noteworthy species is or may be present, are generally required as part of the Local Authority's Planning Policies; Blueprint Architectural Ltd commissioned the survey and report.

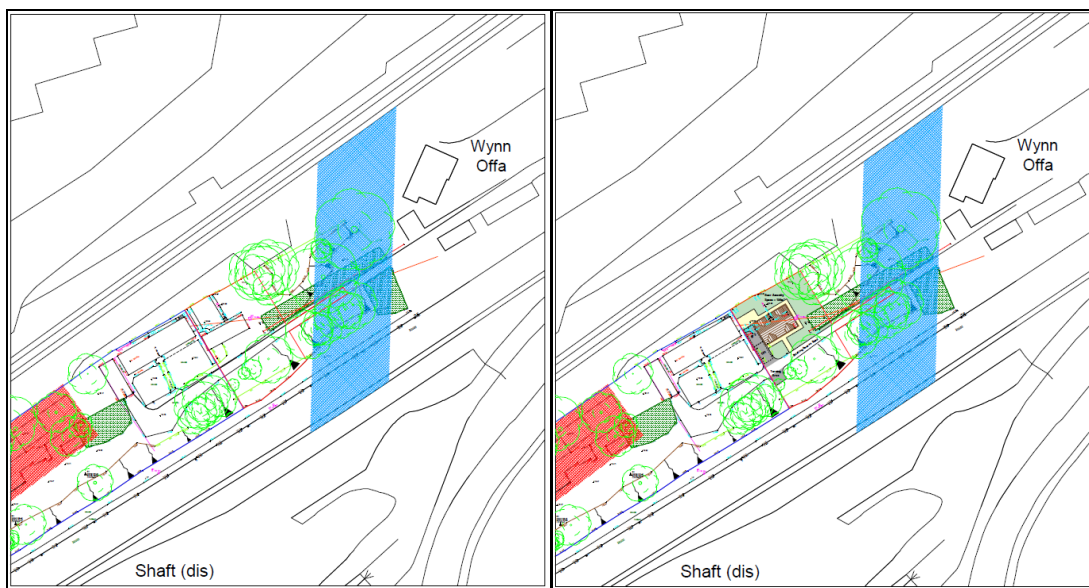


Figure 1: Existing (left) and proposed (right) site plans

1.3 The basic objective of this survey was to ascertain the nature of the land, and where possible obtain information on any sensitive wildlife habitats or species that may be present and if so if they will be affected by future development. To achieve this objective the survey aimed to identify/assess any of the following:

- Identify any likely ecological constraints associated with the outstanding proposals for the site (i.e. the presence of protected/notable species/habitats that exist within the confines of the application boundary).
- Identify mitigation / compensation measures likely to be required in line with the mitigation hierarchy (i.e. avoidance > mitigation > compensation).
- Identify additional survey requirements following on from this preliminary study.
- Identify a series of enhancement opportunities for biodiversity in line with national and local planning policy, alongside '*Biodiversity Net Gain: Good practice principles for development*' (CIEEM et al, 2019).

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1.4 If the area was found to be suitable for the aforementioned notable species / habitats, or signs of use by particular species were found, then more detailed surveys may be recommended. If any European Protected Species was subsequently found during detailed surveys and / or may be affected by the development proposals, then a European Protected Species Licence would be required to proceed with the development.

1.5 Protected species not included within this ecological assessment were omitted due to factors including: the absence of suitable habitats and / or distributional aspects negating the necessity to survey for them and/or the proposed works were not considered to negatively impact the species or encroach on areas where the species may be present. In this instance, this may include Killarney Fern (*Trichomanes speciosum*) for example.

2.0 UK Biodiversity Plans

2.1 The UK Biodiversity Action Plan (BAP) provided a baseline for lists of habitats and species of national conservation importance, now transposed under section 7 of the Environment Act 2016. Based upon the site visit, there is the potential for a limited number of priority species to be present / using the site (see Table 1). The likelihood of presence for any species has been drawn from distributional and ecological data for each species known to Tyrer Ecological Consultants Ltd.

2.2 No priority habitats have been identified within the survey boundary.

Table 1: s.7 species likely to be in the immediate locality

Invertebrates	
Garden Tiger	<i>Arctia caja</i>
Cinnabar Moth	<i>Tyria jacobaeae</i>
Herptiles	
Common Toad	<i>Bufo bufo</i>
Terrestrial Mammals	
West European Hedgehog	<i>Erinaceus europaeus</i>
Noctule	<i>Nyctalus noctula</i>
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>
Brown Long-Eared Bat	<i>Plecotus auritus</i>
Birds	
Black-Headed Gull	<i>Choricocephalus ridibundus</i>
Kestrel	<i>Falco tinunculus</i>
Herring Gull	<i>Larus argentatus</i>
House Sparrow	<i>Passer domesticus</i>
Tree Sparrow	<i>Passer montanus</i>
Hedge Accentor	<i>Prunella modularis</i>
Common Starling	<i>Sturnus vulgaris</i>
Song Thrush	<i>Turdus philomelos</i>

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3.0 Local Biodiversity Action Plan

3.1 Local Biodiversity Action Plans (LBAP's) are simply a way of encouraging people to work together and deliver a programme of continuing action for biodiversity at a local level. They set out practical steps that aim to:-

- Help protect biodiversity
- Enhance and improve biodiversity where possible, and
- Promote biodiversity at a local level

3.2 The Local Biodiversity Action Plan (LBAP) serving Wrexham is no longer available online. Whilst the LBAP for Wrexham is no longer available for reference, species of importance will be highlighted as applicable, with the adoption of a geographic frame of reference (see Figure 2).

4.0 Legislation & Policy

4.1 Relevant legislation considered for the purposes of this report includes the following:

- The Environment Act (2016)
- The Environmental protection Act (1990)
- The Conservation of Habitats and Species (amendment) (EU exit) Regulations (2019)
- The Countryside Rights of Way (CROW) Act (2000)
- The Wildlife and Countryside Act (1981) (as amended)

4.2 These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species/species group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting/with eggs/young); some species may receive full protection within the EU (e.g. otter), whereas others may be protected solely on a national basis (e.g. grass snake).

See Table 2 below entailing legislature appropriate to each species/species group/s respective to the land at Wynnstay Yard, and the relevance of said legislation.

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Table 2: Site-relevant legislation

Species/Species Group	Relevant Legislature	Level of Protection
Birds	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) e.g. Barn owl (<i>Tyto alba</i>).
Bats	CRoW Act (2000) Conservation of Habitats and Species (amendment) (EU exit) Regulations (2019) Wildlife and Countryside Act (1981) (as amended)	All British bats and their **roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any life stage.
Invasive Plant Species	Wildlife and Countryside Act (1981) (as amended) The Environmental Protection Act (1990)	Species listed within Schedule 9 WCA as invasive, including Japanese Knotweed (<i>Reynoutria japonica</i>) and Himalayan Balsam (<i>Impatiens glandulifera</i>), for example, carry notoriety regarding development. The Act makes it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.

Policy

4.3 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister: Circular 06/2005 states that: *“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.”*

4.4 Section 6.4 of Planning Policy Wales (PPW) stipulates that *“The first priority for planning authorities is 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 gain have been fully considered..When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought”.*

And

“A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities must demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions.”

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- 4.5 Policy EC6 of the Wrexham Unitary Development Plan mirrors these statements within PPW and goes on to 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.”*

5.0 Survey Methods

- 5.1 As part of the Preliminary Ecological Appraisal Report, both a desk-top and field-based study were conducted. Methods for both components of the appraisal are given below.

Desk study

- 5.2 Prior to the 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 3km 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.
- 5.3 Ancient woodlands within proximity to the site will be identified using Natural Resources Wales Ancient Woodland Inventory (2011) and possible impact to them will be assessed.
- 5.4 Satellite imagery was reviewed using sources such as Google Earth (© 2019) to determine the nature of the 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. Satellite imagery was also applied when locating water bodies within a 250 metre – 500 metre radius of the survey area which would go on to inform the appraisal relative to notable and protected amphibian species.
- 5.5 Given the nature of the proposed development and outcomes of the appraisal, it has been deemed unnecessary to conduct a data search for protected species or designated sites in the vicinity. Species/habitat information relevant to the land at Wynnstay Yard, and its immediate environs was obtained at the time of the survey from habitat information.

Furthermore, the UK Guidelines for Assessing and Using Biodiversity Data (CIEEM, 2016) state that data searches may not be required in certain circumstances including *“Low impact or small-scale development (e.g. by size, extent, duration of works, magnitude or locality)”*

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Field Survey

- 5.6 The site appraisal was conducted on 5th February 2020 by the following surveyor:

Table 4: Surveyor credentials

Name	Description
Joshua Styles BSc. ACIEEM AMRSB	Ecologist and botanical specialist with a FISC Level 6. Mr Styles is also an accredited agent on the Natural Resources Wales Bat Licence (S086297/1).

- 5.7 The survey followed UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series “Guidelines for Preliminary Ecological Appraisal 2nd Edition (CIEEM, 2017); habitats were mapped using QGIS software (see Appendix IV).
- 5.8 During the survey walkover, botanical assemblages were assessed and the land was inspected for the presence of red-listed (Dines, 2008; Hodgetts, 2011) and s.7 species alongside specially protected species as listed under Schedule 8 of the Wildlife and Countryside Act (WCA) (1981) (as amended) and / or Schedule 5 Conservation of Habitats and Species (amendment) (EU exit) Regulations (2019); this assessment included both vascular and non-vascular plant species.
- 5.9 Additional to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species may be recognised for their ecological notoriety on a geographical scale which is adopted on a site-to-site basis (see Figure 2 below). For a site-relevant species list, see Appendix II.

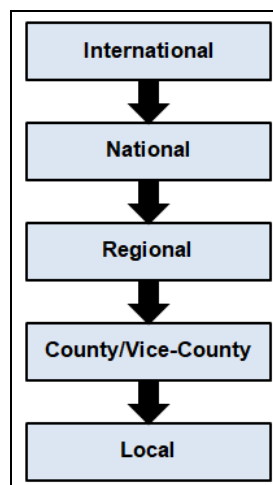


Figure 2: Geographic Frame of Reference entailing degrees of conservation importance

- 5.10 In combination with assessing the area in relation to flora of conservation importance, the land was also assessed in relation to the presence of invasive species as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) (as amended).

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- 5.11 No permanent buildings exist across the extent of the survey area, although a singular portable cabin exists to the north-west of the area. This cabin does not possess a loft space of any sort and so interior and exterior elevations of the structure were assessed with high-powered torch. Following internal and external appraisal, the cabin was categorised accordingly relative to the level of existing bat roost suitability.
- 5.12 Trees were assessed from ground level with the aid of high-powered torch to appraise trees for their capacity to support roosting bats. Features favoured by roosting bats include extensive holes, crevices and fissures. In addition to assessing individual trees for their value to roosting bats, their value was assessed in respect of commuting / foraging value.
- 5.13 The criteria for roost assessment is based upon the following determinants taken from the Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016) (Figure 3):

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 3: BCT guidelines extract

- 5.14 A number of factors are considered in conjunction during the Preliminary Roost Assessment (PRA) of trees and buildings, which includes:-
- Knowledge of bat species relevant to the site location and geographical range
 - Nature of the immediate / surrounding habitat in relation to foraging opportunities
 - Presence / absence of roost potential
 - Presence / absence of a loft space and / or underlining
 - Value of roost potential, if present

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Following the survey, the conclusions and recommendations, in light of the survey results, are based upon surveyor experience and knowledge of bat ecology in association with best-practice guidance.

- 5.15 A 'walkover' of the site was conducted which included a search for typical signs of badger activity which includes digging, occupied setts, 'runs' leading to and from a sett or the existence of latrines or 'snuffle' holes where badgers have foraged in the ground. At the same time, identification of any actual fauna species and any physical evidence signifying the presence of fauna species would also be documented.
- 5.16 All aspects of the site were assessed for the capacity to support Schedule 1 WCA – listed birds for breeding purposes such as Barn owl (*Tyto alba*).
- 5.17 Historical / active bird's nests of any species were also identified as well as an assessment for general suitability for any nesting birds. All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected and so appropriate recommendations for nesting birds have been provided within sections 9.10-9.12 of this report.
- 5.18 Both a map and field search was undertaken in relation to the presence of ponds or waterways that may support Great Crested Newts (GCN). This search was extended to identify habitats of value to reptiles that may occur within the vicinity of the application area. The information gathered would then be used to establish if more detailed surveys are required.
- Existing Great Crested Newt Mitigation Guidelines (2001) states that ponds within 500m of a proposed development site should be considered for their respective potential to support GCN; however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions, or based on the likely magnitude of impacts arising from the proposed development.
- 5.19 The results, conclusions, and recommendations of the survey have been assessed by Ms K Wilding, director of Tyrer Ecological Consultants Ltd, and her assessment concurs with that of Mr. Styles.

6.0 Limitations

- 6.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within Appendix II were noted from incidental observation at the time of the inspection; many plant species are only evident / identifiable at certain times of the year. Nonetheless, Mr. Styles is a competent botanist (FISC 6) with over 15 years' experience in botanical recording; in his view, a sufficient level of information relative to the application site has been obtained from the survey visit conducted on 5th February 2020.
- 6.2 Having considered the constraints in the context of the site, it has been determined that on balance, there was no significant limitation that would otherwise hinder the gathering of ecological information on site.

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7.0 Desk study results

- 7.1 The survey area is sited off the B5605 (Park Road) and comprises a relatively small plot of land occupied primarily by areas of tall ruderal vegetation, scrub and a singular portable cabin, set at a distance of 1.25 kilometres south-west of Ruabon town centre.
- 7.2 Immediate habitats comprise a mix of woodland, farmland and areas of residential development with associated gardens, also including areas of linear roadside grasslands and a railway immediately to the north of the survey area.
- 7.3 The contiguous landscape continues to the same nature as that of the immediate with the addition of further favourable environs including occasional water bodies which occur sporadically within the area. Many of the woodlands within the vicinity of the study site are ancient semi-natural woods. The previously identified immediate habitats can be considered as being of low-high value for many of the notable and protected species for which this survey was undertaken, subject to them being present in the locality (see Figure 4).



Figure 4: Location of the application site within the landscape

- 7.4 The desktop study found no results for European Protected Species Mitigation Licences (EPSMLs) within a 2.0km radius of the study site.
- 7.5 A search of the Ancient Woodland Inventory for Wales found that the nearest ancient woodland in proximity to the site is set at 83 metres to the south-east (Figure 5).

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Figure 5: Ancient Woodland Inventory extract (NRW, 2011)

7.5 Three statutorily designated sites of biological interest have been identified within a three kilometre radius of the study site (see Figure 6), which include the following:

- Nant-Y-Belan and Prynella Woods (SSSI)
- Stryt Las A'r Hafod (SSSI), part of the Johnstown Newt Sites (SAC)
- River Dee and Bala Lake (SSSI, SAC)

The site lies within the impact zone for the River Dee and Bala Lake (SSSI, SAC).

7.6 Notwithstanding the proximity to the aforementioned designated sites, it is considered to be unlikely that any statutorily designated site or its interest features would be harmed in any way by the proposed development, especially in consideration of its small scale.

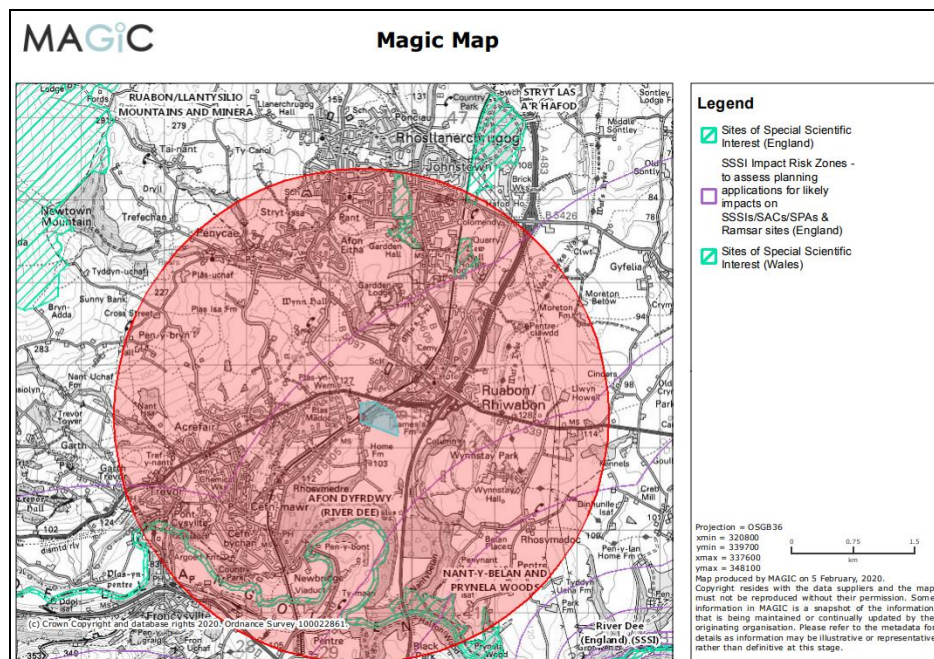


Figure 6: MAGIC Map results

8.0 Field survey results

8.1 Vegetation

- 8.1.1 No species of conservation importance were identified within the survey area.
- 8.1.2 One species listed as 'invasive' under Schedule 9 (Part II) Wildlife & Countryside Act (1981) (as amended) was identified in the form of Japanese Knotweed (*Reynoutria japonica*). The site-relevant distribution of *R. japonica* is given within Figure 7 below.



Figure 7: Distribution of *R. japonica* at the application site

8.2 Bats

- 8.2.1 Whilst no permanent structures exist at the survey area, a singular portable cabin exists within the survey area which is to the approximate dimensions 12 metres x 5 metres x 4.5 metres in height. The structure is of metal construct, with a domed metal roof and was formerly used as a temporary living quarters though is now devoid of any former functionality.
- 8.2.2 Internal inspection found the full extent of the interior to be fully illuminated and hence, unsuited to the typical breeding requirements of loft-dwelling species of bat such as the brown long-eared (*Plecotus auritus*), although this does not necessarily discount roosting by individual bats on an occasional basis, where external cavities are available. This is a species that prefers large, unrestrictive and darkened loft spaces with consistent thermal qualities for breeding purposes.

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- 8.2.3 No evidence of this species/group was identified upon inspection, though areas of both immediate and continuous habitat constitute favourable foraging habitat for this group, due to the low levels of artificial light.
- 8.2.4 Ceiling boards exist immediately beneath the domed roof. Where such underlinings exist, these may significantly improve the probability of occupancy by crevice-dwelling species of bat such as the common pipistrelle (*Pipistrellus pipistrellus*), whereby bats are able to utilise the cavity between roofing material and underlining. Notwithstanding, this cavity only becomes available where viable external ingress/egress opportunities exist.
- 8.2.5 No evidence of crevice-dwelling bats have been identified at the structure, though this is often the case, owing to the cavity-inhabiting nature of this species group. 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.
- 8.2.6 The external investigation of the cabin found a complete absence of Potential Roost Features and/or viable entry points and is well-sealed and tight-fitting to all aspects. Therefore, the portable cabin has been assessed to pertain to a negligible categorisation, relative to existing bat roost suitability. This categorisation is in line with existing Bat Conservation Trust guidelines.
- 8.2.7 **Trees:** All trees contained within the survey boundary have been found to be absent of features that might otherwise be utilised by a number of bat species as a roosting facility, such as cracks, crevices, holes and fissures present on trunks.
- 8.2.8 Whilst roosting suitability was found to be absent at all affected trees, their value relative to foraging and commuting bats, and to act as a screen to light pollution, should not be undervalued.

8.3 Other Terrestrial Mammals

Badger

- 8.3.1 No evidence of badger (*Meles meles*) occurs across the extent of the site; their presence is considered to be unlikely.

Hedgehog

- 8.3.2 Areas that constitute suitable habitat for hedgehog (*Erinaceus europaeus*) breeding / refuge are limited to areas of piled debris and cut vegetation and their presence is considered to be possible at the study site.

8.4 Birds

- 8.4.1 A variety of nesting platforms for a number of nesting bird species are available throughout the survey area in the form of scrub and trees. Whilst no historic nests were located at the time of the survey, the presence of nesting bird species within the breeding season (March-August) on this basis is therefore considered to be likely.

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8.4.2 In relation to Schedule 1 birds, it is highly unlikely that the site is used for breeding purposes by Schedule 1 species such as Barn owl (*Tyto alba*) and no evidence of use or nesting opportunities were located within the survey boundary, and favourable hunting habitat for this species is exceptionally limited within the immediacy of the survey area.

8.4.3 For a list of bird species identified during the visit, see Table 5 below.

Table 5: Species identified during the inspection of the land at Wynnstay Yard

Common name	Scientific name	Conservation designations
Blackbird	<i>Turdus merula</i>	
Blue Tit	<i>Cyanistes caeruleus</i>	
Goldfinch	<i>Carduelis carduelis</i>	
Long Tailed Tit	<i>Aegithalos caudatus</i>	
Magpie	<i>Pica pica</i>	
Robin	<i>Erithacus rubecula</i>	
Wood Pigeon	<i>Columba palumbus</i>	

8.5 Herptiles

Great Crested Newt (GCN)

8.5.1 No ponds exist within a 250 metre radius of the survey area and the closest pond in relation to the application site occurs at an approximate distance of 330 metres to the east. This pool is separated from the study site by the B5605, which would constitute a significant barrier to newt migration onto site (see Figure 8).



Figure 8: □ Approximate site location
○ Nearest pond with connectivity to site at 330 metres

8.5.2 **Risk to GCN:**

In order to assess risk to the species, a number of factors need to be considered. These include:

- Site proximity to potential breeding pond and to any additional ponds
- Habitat linkage / barriers between potential breeding ponds and the site
- Nature and extent of available terrestrial habitat around the pond
- Area of site habitat loss
- Nature of habitat to be lost and its potential value to GCN as refuge/ overwintering habitat.

Research has shown that where favourable habitat exists around GCN ponds, the vast majority of the population is likely to be contained within 100m of the breeding pond, creating a 'terrestrial sponge' effect. A Rapid Risk Assessment has been conducted below to assess the likelihood of an offence resultant from the development (Table 6).

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Table 6: Rapid Risk Assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.001
Individual great crested newts	No effect	0
	Maximum:	0.001
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

- 8.5.3 In light of the identified isolation of the area from potential breeding pool and outcome of the Rapid Risk Assessment, the presence of GCN within the developmental boundary is considered to be highly unlikely.

Other Amphibians

- 8.5.4 Given the quality of on-site habitats, the presence of other, more generalist amphibian species such as the common toad (*Bufo bufo*) is considered to be more likely.

Reptiles

- 8.5.5 Habitats contained within the application boundary feature entirely unfavourable habitats for any indigenous reptile and their presence is considered to be unlikely.

8.6 PHASE 1 HABITAT SURVEY:

All species nomenclature for vascular plants follows Stace, C. (2019) – definitive English names

(Refer to Appendix IV for the location of all described habitats)

Table 7: Phase 1 habitat types within the survey area

Habitat Code	Broad Habitat	Description
A2.2	Scattered scrub	Areas of scattered scrub exist through parts of the site, dominated by a number of brambles (<i>Rubus</i>) within the series Rhamnifolii, Vestiti and Sylvatici. Microspecies could not be ascertained due to an absence of flowering plants.
A3.3	Scattered trees (mixed)	Scattered trees within the site consist of a mix of broadleaved and coniferous species inclusive of Beech (<i>Fagus sylvatica</i>), Sycamore (<i>Acer pseudoplatanus</i>) and Leyland Cypress (<i>X Cuprocyparis leylandii</i>)
C3.1	Tall ruderal	Areas of tall ruderal vegetation are entirely dominated by Japanese Knotweed (<i>Reynoutria japonica</i>), with occasional graminaceous species and herbs within the understorey, such as Common Nettle (<i>Urtica dioica</i> subsp. <i>dioica</i>) and Cock's-foot (<i>Dactylis glomerata</i>).

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J3.6/J4	Buildings / bare ground	Areas with buildings / bare ground do not add any additional botanical value to the site.
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9.0 Conclusions & Recommendations

Vegetation

- 9.1 No species of conservation importance or invasive plants were located within the survey boundary.
- 9.2 One invasive plant species has been identified within the confines of the survey area in the form of Japanese Knotweed (see Figure 7). It is therefore recommended that this species is eradicated by a competent professional invasive species ecologist. Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as “*a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.*”
- Following eradication, any spoil taken off site should be treated as controlled waste and disposed of at a landfill authorised to accept such refuse. This is in line with obligations set out within the Environmental Protection Act (1990).
- Advice on the treatment and prevention of Japanese Knotweed spread can be found at <https://www.gov.uk/guidance/prevent-japanese-knotweed-from-spreading>.
- 9.3 Enhancement by way of a suitable landscaping plan is recommended to be instated as part of the outstanding proposals. Suitable species for the area have been given within Appendix III.

Bats

- 9.4 From the survey results it can be concluded that all trees and the portable cabin assessed are absent of bat roost suitability, and have been concluded to possess ‘negligible’ bat roost suitability. This categorisation is in line with current BCT guidelines (see Figure 3).
- 9.5 Installation of lighting as part of any future development, that exceeds current levels, may have a negative impact upon foraging/commuting bats, particularly if increased light spillage occurs in areas of that are currently subjected to no-low levels of illumination, inclusive of the parameters of the site boundaries.

If inappropriate and ill designed lighting is implemented then there is likely to be an adverse impact upon bats; see extract below from Bat Conservation Lighting Guidelines.

Type of lamp (light source)

The impact on bats can be minimised by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

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

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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, don't light.

Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site. Refer to the Bat Conservation Lighting Guidelines for further information.

- 9.6 Enhancement for bats is recommended within Appendix III.

Other Terrestrial Mammals

- 9.7 If and when future development transpires then provision of low angle sloping boards of approximately 300 mm wide should be placed within any excavations at the end of each working day to facilitate a means of escape for mammals such as hedgehogs. Piling of vegetation are recommended to be removed in a careful manner; if any animals are found during clearance works, they are to be moved off site within an area of like-for-like habitat.
- 9.8 Enhancement for hedgehog has been recommended within Appendix III.
- 9.9 No evidence of badger use was identified at the time of the survey and the possible presence of this species within the confines of the survey area at the time of proposed works is considered to be unlikely.

Breeding Birds

- 9.10 There are no implications in relation to Schedule 1 specially protected bird species e.g. Barn owl and no evidence of use was located upon inspection of the site.
- 9.11 The presence of other common bird species within the application site for nesting purposes, notably within scrub and trees is considered possible. It is therefore recommended that clearance works at the site commence outside the breeding season for birds (March-August inclusive) unless it can be conclusively demonstrated by a suitably qualified professional ecologist that nesting birds are absent (see section 9.2 for the definition a professional ecologist).
- 9.12 It is recommended that enhancement for nesting birds is incorporated into the proposed development, as per Appendix III.

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Herptiles

- 9.13 The presence of any protected amphibian species, notably including GCN, or protected reptile species has been discounted on the basis of the sites' isolation from occupied and/or favourable habitats.

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Appendix I: Site Photographs



Plate 1: Access road



Plate 2: A view of the site with Japanese Knotweed remains



Plate 3: Japanese Knotweed remains



Plate 4: Character of the vegetation on site

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Plate 5: Character of the vegetation on site



Plate 6: A view of the portable cabin



Plate 7: Rear elevation of the portable cabin



Plate 8: Interior of the cabin

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Appendix II: Site-Specific Botanical Species List

Each species recorded was given an abundance value according to the standard DAFOR scale, where:

D	=	Dominant
A	=	Abundant
F	=	Frequent
O	=	Occasional
R	=	Rare

*These values can be prefixed by the letter L (locally), to provide more subtle biogeographical data.

Class	Common Name	Scientific Name	DAFOR
Bryopsida (Mosses, Liverworts and Hornworts)		<i>Brachythecium rutabulum</i>	O
		<i>Kindbergia praelonga</i>	F
		<i>Orthotrichum</i> sp.	R
Pteridopsida (Ferns)	Broad-buckler Fern	<i>Dryopteris dilatata</i>	R
	Hart's-tongue Fern	<i>Asplenium scolopendrium</i>	R
	Male Fern	<i>Dryopteris filix-mas</i>	R
Magnoliopsida (Flowering Plants)	a Bramble	<i>Rubus</i> ser. Vestiti	O
	a Bramble	<i>Rubus</i> ser. Rhamnifolii	F
	a Bramble	<i>Rubus</i> ser. Sylvatici	R
	a Dandelion	<i>Taraxacum</i> sect. Ruderalia	O
	a Dandelion	<i>Taraxacum</i> sect. Hamata	R
	Annual Meadow-grass	<i>Poa annua</i>	O
	Black Knapweed	<i>Centaurea nigra</i>	R
	Cleavers	<i>Galium aparine</i>	F
	Cock's-foot	<i>Dactylis glomerata</i>	O
	Common Nettle	<i>Urtica dioica</i> subsp. <i>dioica</i>	O
	Common Vetch	<i>Vicia sativa</i> subsp. <i>segetallis</i>	R
	Creeping Buttercup	<i>Ranunculus repens</i>	O
	Creeping Cinquefoil	<i>Potentilla reptans</i>	R
	Daffodil sp.	<i>Narcissus</i> sp.	R
	Daisy	<i>Bellis perennis</i>	O
	Dog Rose agg.	<i>Rosa canina</i> agg.	F
	False Oat-grass	<i>Arrhenatherum elatius</i>	R
	Garden Privet	<i>Ligustrum ovalifolium</i>	R
	Garlic Mustard	<i>Alliaria petiolata</i>	R
	Germander Speedwell	<i>Veronica chamaedrys</i>	LF
	Groundsel	<i>Senecio vulgaris</i> subsp. <i>vulgaris</i>	R
	Hawk's-beard sp.	<i>Crepis</i> sp.	R
	Hawthorn	<i>Crataegus monogyna</i>	O
	Herb-Robert	<i>Geranium robertianum</i>	O

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	Holly	<i>Ilex aquifolium</i>	R
	Japanese Knotweed	<i>Reynoutria japonica</i>	LA
	Keel-fruited Cornsalad	<i>Valerianella carinata</i>	R
	Leyland Cypress	<i>X Cupressocyparis leylandii</i>	O
	Lord's-and-Ladies	<i>Arum maculatum</i>	O
	Meadow Buttercup	<i>Ranunculus acris</i>	R
	Nipplewort	<i>Lapsana communis</i>	R
	Pendulous Sedge	<i>Carex pendula</i>	R
	Perforate St. John's-wort	<i>Hypericum perforatum</i>	R
	Prickly Sow-thistle	<i>Sonchus asper</i>	R
	Spear Thistle	<i>Cirsium vulgare</i>	R
	Sycamore	<i>Acer pseudoplatanus</i>	R
	Willowherb sp.	<i>Epilobium</i> sp.	R
	Wood Avens	<i>Geum urbanum</i>	R
	Yorkshire-fog	<i>Holcus lanatus</i>	R

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Appendix III: Biodiversity Enhancement and Compensation

Landscaping

A series of trees, woody shrubs, climbers, herbaceous plants and ferns have been given within the table below which are suitable for incorporation into the scheme proposed at the Land at Wynnstay Yard; the list of plants given below are readily commercially available.

	Common Name	Scientific Name	Planting Preference
Ferns	Male Fern	<i>Dryopteris filix-mas</i>	Semi-shade or shaded
	Soft Shied-fern	<i>Polystichum setiferum</i>	Semi-shade or shaded
	Maidenhair Fern	<i>Adiantum capillus-veneris</i>	Suitable for rockeries / walled gardens
	Royal Fern	<i>Osmunda regalis</i>	Full sun in moist-damp areas
Herbaceous plants	Bloody Crane's-bill	<i>Geranium sanguineum</i>	Dry soils - suitable for rockeries
	Columbine	<i>Aquilegia vulgaris</i>	Semi-shade or open areas
	English Bluebell	<i>Hyacinthoides non-scripta</i>	Moist soils in semi-shade or open areas
	Giant Bellflower	<i>Campanula latifolia</i>	Semi-shade or open areas
	Greater Knapweed	<i>Centaurea scabiosa</i>	Dry-moist soils. Suitable for borders
	Greater Woodrush	<i>Luzula sylvatica</i>	Moist soils in semi-shade or open areas
	Meadow Crane's-bill	<i>Geranium pratense</i>	Humid-moist soils. Suitable for borders
	Musk Mallow	<i>Malva moschata</i>	Dry-moist soils. Suitable for borders and rockeries
	Sea Campion	<i>Silene uniflora</i>	Dry soils - suitable for rockeries
	Stinking Hellebore	<i>Helleborus foetidus</i>	Semi-shade or open areas
Aquatic/marginal plants	Common Water-crowfoot	<i>Ranunculus aquatilis</i>	Ponds
	Marsh Marigold	<i>Caltha palustris</i>	Marginal vegetation
	Ragged Robin	<i>Silene flos-cucculi</i>	Marginal vegetation
	Water Mint	<i>Mentha aquatica</i>	Marginal vegetation
	Water-violet	<i>Hottonia palustris</i>	Ponds
	White Water-lily	<i>Nymphaea alba</i>	Ponds
Climbers	Honeysuckle	<i>Lonicera periclymenum</i>	Dry-moist soils
	Hops	<i>Humulus lupulus</i>	Dry-moist soils
	Ivy	<i>Hedera helix</i>	Dry-moist soils
	Sweet-briar	<i>Rosa rubiginosa</i>	Dry-moist soils
Woody Shrubs	Dogwood	<i>Cornus sanguinea</i>	-
	Gelder Rose	<i>Viburnum opulus</i>	-
	Hawthorn	<i>Crataegus monogyna</i>	-
	Hazel	<i>Corylus avellana</i>	-
	Holly	<i>Ilex aquifolium</i>	-
Trees	Alder Buckthorn	<i>Frangula alnus</i>	-
	Osier	<i>Salix viminalis</i>	-
	Pedunculate Oak	<i>Quercus robur</i>	-
	Purple Willow	<i>Salix purpurea</i>	-
	Rowan	<i>Sorbus aucuparia</i>	-
	Silver Birch	<i>Betula pendula</i>	-
	Wild Cherry	<i>Prunus avium</i>	-
	Wych Elm	<i>Ulmus glabra</i>	-

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Nesting Birds

Enhancement for robin / wren

This flat based open nest box has been designed specifically with the robin and wren in mind. Both prefer a small open-fronted box.

This box should be sited low down (less than 2m from the ground) in an area well hidden with vegetation. It can be attached to a tree or wall using a nail or screw and wall plug.

https://www.nhbs.com/search?q=birds%20box%20tree&hPP=60&idx=titles&p=0&fR%5Bdoc_s%5D%5B0%5D=false&fR%5Bhide%5D%5B0%5D=false&fR%5Blive%5D%5B0%5D=true&qview=181109



Enhancement for house sparrow

The Sparrow Terrace has been designed to help redress the balance of falling House Sparrow numbers. The current UK population is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families.

The terrace comes in two colours and can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of houses in built-up areas.

See - www.nhbs.com/title/174850/1sp-schwegler-sparrow-terrace



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Enhancement for swift

The type of entrance possessed by the swift WoodStone Swift Nest Box is preferred by swifts and discourages competing species such as house sparrows.

This box should be installed at least five metres above ground level , ensuring that there is unobstructed access for birds entering and leaving, preferably being placed in a sheltered locality under eaves or overhanging roofs.



https://www.nhbs.com/woodstone-swift-nest-box?bkfno=217160&ca_id=1495&qclid=EAlaIQobChMI4Ovj4pXq5wIVFZ3VCh3_oQWGEAkYASABEqJ1Z_D_BwE

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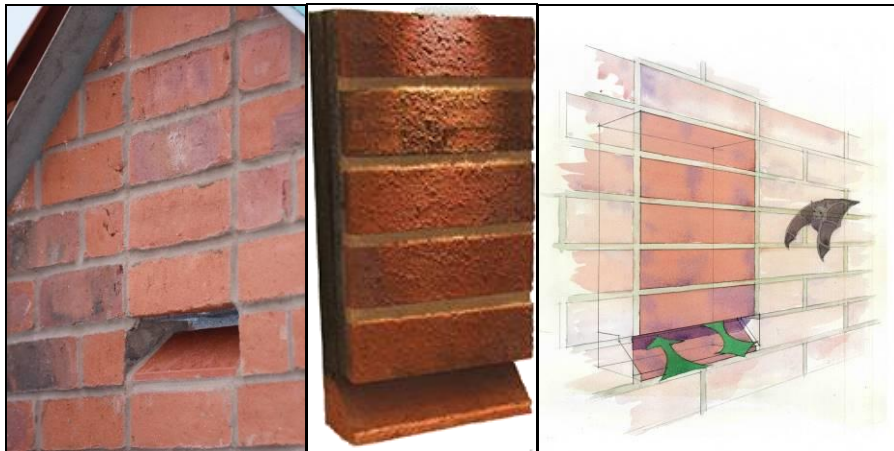
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Bats

There are a number of options available for enhancing a building for crevice-dwelling bats if so required; such forms of enhancement replicate crevice situations that are used by species including Pipistrelle bats; provision may be incorporated in the form of soffit access, integrated bat box/es, ridge access or by way of externally fitted boxes. A number of options are given below:-

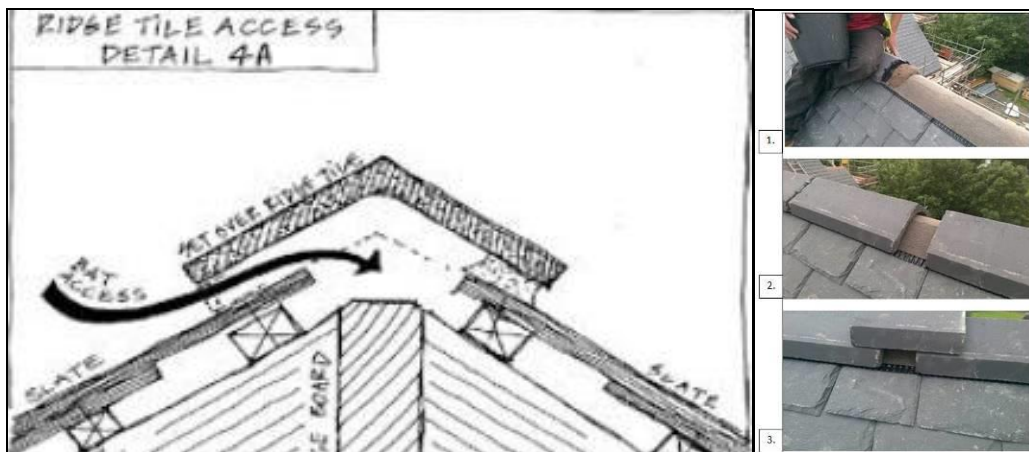
Integrated bat box

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.

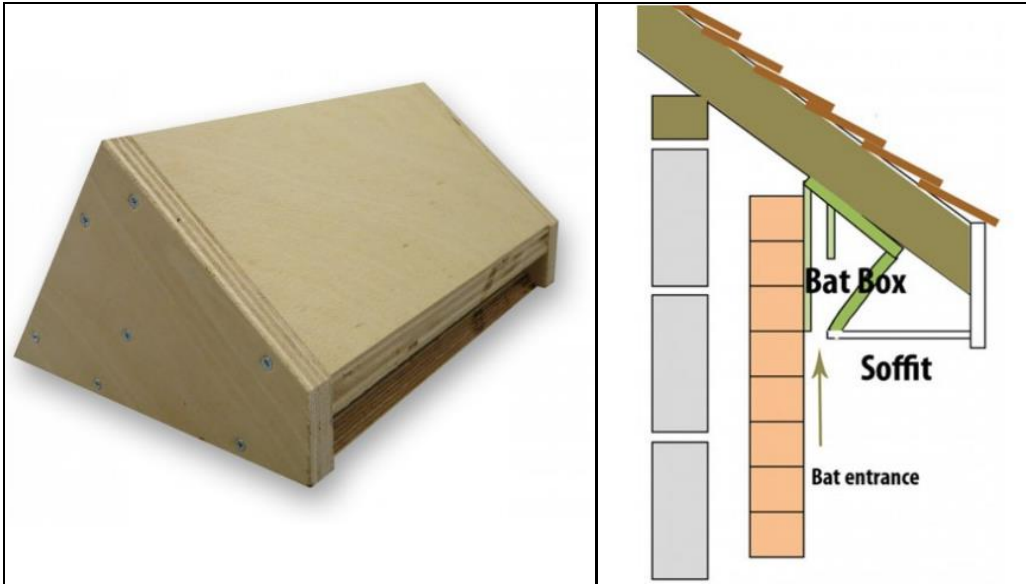


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Soffit access

Where soffit 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 .



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Hedgehog

Further enhancement measures may be incorporated into garden fences that would be of benefit for hedgehog (*Erinaceus europaeus*); hedgehog highways allow connectivity between gardens and extend valuable foraging habitat for this declining mammal (see Figure 9 below).



Figure 9: Positions of hedgehog highways

Legend

-  A2.2 - Scrub - scattered
-  A3.1 - Broadleaved Parkland/scattered trees
-  C3.1 - Other tall herb and fern - ruderal
-  J3.6 - Buildings
-  J4 - Bare ground

Date: 06/02/2020
Drawn: JS
Checked & Approved: KW



Tyrer Ecological Consultants Ltd
Formby Business Centre
42 Duke Street
Formby
L37 4AT

Tel: 01704 875781

Email: enquiries@tyrer-ecologicalconsultants.co.uk
www.tyrer-ecologicalconsultants.co.uk