



**LAND ADJ. TO
11 WELLFIELD ROAD,
BAGLAN,
PORT TALBOT NEATH**

Preliminary Ecological Appraisal & Baseline Ecological Enhancement

**Report to
Darkin Architects**

Project number 2023/094 A

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QUALITY ASSURANCE

Title Land adj. to 11 Wellfield Road, Baglan, Port Talbot Neath
- Preliminary Ecological Appraisal & Baseline Ecological Enhancement Plan

Submitted to: Darkin Architects

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SUMMARY

In August 2023, Worcestershire Wildlife Consultancy was commissioned by Mr Andronikos Vassiliades of Darkin Architects, on behalf of their client to undertake a Preliminary Ecological Appraisal (PEA) and a baseline ecological enhancement plan for land adj. to 11 Wellfield Road, Baglan, Port Talbot Neath. The appraisal was requested in order to ensure compliance with National and European legislation. The planning proposal is to redevelop the site for a residential development.

Habitat – the site is considered to be of low ecological value since is largely overgrown garden with some ruderals and bramble scrub, that has only recently developed.

Roosting Bats - There are no buildings on site and the boundary trees were considered to be too young to have developed suitable features for roosting bats.. Therefore, based on the available evidence, there appear to be **no obvious and immediate implications** for the proposed development with regard to bats. The periphery mature trees to be retained on the periphery of the site must have tree protection fencing in accordance with BS 5837 'Trees in Relation to Construction' installed around them.

Nesting Birds - The site provides nesting opportunities for birds within the trees and scrub on and surrounding the edges of the site. As nesting birds are legally protected, development operations should take care to avoid the risk of killing/ injuring birds and their nests, especially during the nesting season (generally considered to be late February to late August). Therefore, **removal and/or management of suitable nesting habitat should be undertaken outside of the main nesting season and where this is not possible, a suitably qualified ecologist must be engaged to check for nesting birds prior to any works taking place** and to provide advice on the most appropriate way to proceed.

Ecological Enhancements – Biodiversity enhancements are described in Section 4.

There appear to be **no other obvious and immediate** issues for this development with regard to any other species protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 and no further dedicated surveys for any other species are recommended. However, in the highly unlikely event that any protected species listed in Section 2 are found on the site during the works then all works must cease immediately, and the advice of a suitably qualified ecologist must be sought.

It should be noted that if more than twenty-four months elapse between this appraisal and survey the commencement of any development then a further appraisal and survey may need to be undertaken at an appropriate time to determine the status of any protected species which may have taken up residence during the intervening period.

CRYNODEB

Ym mis Awst 2023, comisiynwyd Worcestershire Wildlife Consultancy gan Mr Andronikos Vassiliades o Darkin Architects, ar ran eu cleient i gynnal Arfarniad Ecolegol Rhagarweiniol (PEA) a chynllun gwella ecolegol sylfaenol ar gyfer tir cyfagos. i 11 Heol Wellfield, Baglan, Port Talbot Castell-nedd. Gofynnwyd am yr arfarniad er mwyn sicrhau cydymffurfiaeth â deddfwriaeth Genedlaethol ac Ewropeaidd. Cynnig cynllunio yw ailddatblygu'r safle ar gyfer datblygiad preswyl.

Cynefin – ystyrir bod y safle o werth ecolegol isel gan ei fod yn ardd sydd wedi tyfu'n wyllt i raddau helaeth gyda rhywfaint o brysgwydd a mieri, sydd ond wedi datblygu'n ddiweddar.

Ystlumod sy'n Clwydo - Nid oes unrhyw adeiladau ar y safle ac ystyriwyd bod y coed terfyn yn rhy ifanc i fod wedi datblygu nodweddion addas ar gyfer ystlumod sy'n clwydo. gyda golwg ar ystlumod.

Adar yn Nythu - Mae'r safle'n darparu cyfleoedd nythu i adar o fewn y coed a'r prysgwydd ar ac o amgylch ymylon y safle. Gan fod adar sy'n nythu yn cael eu hamddiffyn yn gyfreithiol, dylai gweithrediadau datblygu fod yn ofalus i osgoi'r risg o ladd/anafu adar a'u nythod, yn enwedig yn ystod y tymor nythu (ystyrir yn gyffredinol ei fod rhwng diwedd Chwefror a diwedd Awst). Felly, dylid symud a/neu reoli cynefin nythu addas y tu allan i'r prif dymor nythu a lle nad yw hyn yn bosibl, rhaid cyflogi ecolegydd â chymwysterau addas i wirio am adar sy'n nythu cyn gwneud unrhyw waith ac i roi cyngor ar y ffordd fwyaf priodol i symud ymlaen.

Gwelliannau Ecolegol - Disgrifir gwelliannau i fioamrywiaeth yn Adran 4.

Ymddengys nad oes unrhyw faterion amlwg ac uniongyrchol eraill ar gyfer y datblygiad hwn o ran unrhyw rywogaethau eraill a warchodir o dan Ddeddf Bywyd Gwyllt a Chefn Gwlad 1981 (fel y'i diwygiwyd) a Rheoliadau Gwarchod Cynefinoedd a Rhywogaethau 2017 ac nid oes unrhyw arolygon pwrpasol pellach ar gyfer unrhyw rywogaethau eraill yn berthnasol. argymhellir. Fodd bynnag, os bydd unrhyw rywogaethau a warchodir yn Adran 2 yn cael eu canfod ar y safle yn ystod y gwaith, mae'n rhaid i'r holl waith ddod i ben ar unwaith, a rhaid ceisio cyngor ecolegydd cymwys.

Dylid nodi, os bydd mwy na phedwar mis ar hugain wedi mynd heibio rhwng y gwerthusiad hwn a'r arolwg o ddechrau unrhyw ddatblygiad, yna efallai y bydd angen cynnal arfarniad ac arolwg pellach ar adeg briodol i bennu statws unrhyw rywogaethau a warchodir a allai fod wedi cymryd rhan. preswyl i fyny yn y cyfamser.

1. INTRODUCTION

1.1 Commissioning Brief

In August 2023, Worcestershire Wildlife Consultancy was commissioned by Mr Andronikos Vassiliades of Darkin Architects, on behalf of their client to undertake a Preliminary Ecological Appraisal (PEA) and a baseline ecological enhancement plan for land adj. to 11 Wellfield Road, Baglan, Port Talbot Neath. The appraisal was requested in order to ensure compliance with National and European legislation. This document sets out to meet a pre-application request from Cyngor Castell-Neath Port Talbot/Neath Port Talbot Council's planning application Q2023/0098. The appraisal was requested in order to ensure compliance with National and European legislation.

1.2 Summary of the Proposed Development

It is our understanding that planning permission is being sought for a proposed construction of detached dwelling with double garage.

1.3 Site Description & Location

The site (approx. 0.078 Ha), is located on land adjacent to 11 Wellfield Road, Baglan, Neath Port Talbot SA12 8AB (NGR SS76029072). The site contains an area of former garden on a south-facing sloped bank that includes areas of overgrown amenity lawn, bramble scrub and some ruderals with the boundaries containing planted hedgerows and partial line of trees. There are no waterbodies on or adjacent to the site nor are there any buildings onsite. The site is situated on the corner of Wellfield Road with the adjacent residential properties alongside the proposed plot. The wider area contains the residential properties of the broader Pentyla-Baglan Road (A48) to the western, southern and eastern areas whilst the pastures and broadleaf wooded area of Dysgwylfa-Fawr and Mynydd Dinas to the northern flank.

By referring to historical Ordnance Survey maps, the site in 1880s, was a field adjacent to an old vicarage and Wellfield Villas.

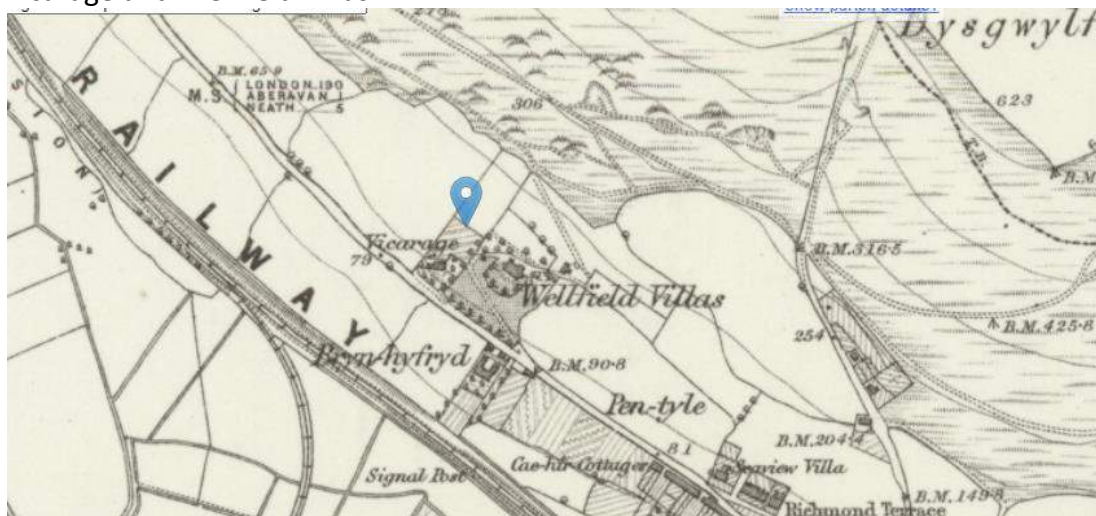


Figure 1: Site in the 1880s (source:

<https://maps.nls.uk/explore/#zoom=16.3&lat=51.60162&lon=-3.79243&layers=257&b=1&marker=51.60168,-3.79145>)

By using the historic function of Google Earth, the site can viewed from 2006 onwards, via aerial photographs:-

Historic aerial imagery

Imagery from Google Earth Pro (<https://www.google.com/earth/versions/>).

Notable changes

The site in 2006 to 2014 appeared to be regularly mown with only the bramble cover appearing in 2018.

2006:



2013:



2018:



1.4 Scope of the Appraisal and Survey

The ecological appraisal focussed on the following points:

- Determining the potential of the area of the proposed development work to support protected species, of which account must be taken prior to and during the planned works in accordance with the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 and the Protection of Badgers Act 1992.
- The site surveys focussed on establishing the actual presence of species of note (in this case bats with regards to all suitable buildings), which are considered to be of **principal importance** for the conservation of biodiversity, especially those given protection under British or European wildlife legislation as stated above.
- The appraisal also aimed to identify habitats and species recognised within the local Biodiversity Action Plan (BAP Habitats).
- The appraisal recommendations are also guided by the relevant legislation:

The Natural Environment and Rural Communities Act (NERC), 2006 states: “Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”.

Furthermore, the survey recommendations are guided by the following policies:

- The Welsh Assembly Government has recognised the important role for the planning system in conserving biodiversity in its planning policy guidance, “Planning Policy Wales Edition 6 – February 2014”. Here it states at paragraph 5.1.2 “The Welsh Government’s objectives for the conservation and improvement of the natural heritage are to:
 - Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats
 - Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment”
- Paragraph 5.2.3 states “The Welsh Government will ensure that its policies contribute to the conservation of the abundance and diversity of native wildlife and its habitats and will minimise the adverse effects on wildlife where conflict of interest is unavoidable”

Detailed advice on the importance of the planning system in conserving biological diversity is set out in Technical Advice Note 5: *Nature Conservation and Planning* (TAN5).

- The Environment (Wales) Act 2016 includes a duty on local authorities to regard biodiversity conservation as a material consideration within the planning process. Section 7 of the Environment (Wales) Act protects those species and habitats of principal importance for the purpose of conserving biodiversity in Wales.

1.5 Desk Study

A search for protected species and designated sites within 1km of the site was undertaken using the Multi Agency Geographic Information for the Countryside (MAGiC) website. Additional resources were perused on Neath Port Talbot Council's website.

1.6 Constraints

The comprehensiveness of any ecological appraisal and/or survey may be limited by the season in which the site visit(s) is(are) undertaken. To confirm the presence or absence of all protected species usually requires multiple visits at suitable times of the year. This report cannot therefore be considered to provide a comprehensive analysis of the bat interest of the site. However, it does provide a "snapshot" of the level of bat activity and usage on and across the site on the days when the surveys were undertaken and highlights areas where further survey work may be required.

2. METHODOLOGY

Joshua Evans of Worcestershire Wildlife Consultancy undertook the Preliminary Ecological Appraisal on 29th August 2023. At 08:30hrs the weather was dry and mild with approximately 90% cloud cover and an air temperature of 17.1° C.

Table 1: Methodology

Phase 1 habitat survey	The aim of the Phase 1 survey is to provide a description of the semi-natural vegetation of a particular site and is made in accordance with the JNCC Phase 1 Habitat Survey methodology (JNCC, 1990). Where necessary, the condition of the habitat is described and full plant lists collated to provide greater detail, which helps when identifying the conservation significance of a particular habitat. The appraisal also aims to identify invasive plants listed on Schedule 9 of the Wildlife & Countryside Act that could have implications for works on site. Where appropriate, maps are provided in other formats, such as annotated aerial photographs.
Badgers	The site is assessed for suitable habitats that may support badgers (<i>Meles meles</i>). Where relevant habitat occurs, evidence of badgers including setts, latrines, tracks, snuffle holes, padding or guard hairs is recorded.
Bats	The site is assessed for suitable habitats that may support bats. For example, buildings are assessed for holes in soffits, missing tiles and gaps in the masonry whilst trees are assessed for features such as cracks and holes.
Birds	The site is assessed for suitable habitats that may support birds in terms of feeding, nesting and roosting. Where relevant habitat occurs, evidence identifying the presence of birds including nests, droppings, pellets and feathers is recorded.
Dormice	The site is assessed for suitable habitats that may support dormice (<i>Muscardinus avellanarius</i>) including woodland and hedgerows. Where relevant habitat occurs evidence of dormice including nests and gnawed nuts is recorded.
Great crested newts	During the site visit the potential of the site to support great-crested newts (<i>Triturus cristatus</i>) is assessed; this includes looking for potential breeding sites such as ponds, disused swimming pools and other water-bodies. The appraisal also focuses on the potential for this species to find refuge in places such as log piles, rubble and compost heaps. Where still water-bodies occur, a Habitat Suitability Index (HSI) is calculated. This is a standard appraisal method developed specifically to evaluate the habitat suitability for great crested newts (Oldham <i>et al.</i> 2000). A series of factors must be considered. Each factor is assessed along suitability guidelines and allocated a value of between 0.1 (highly unsuitable) to 1.0 (highly suitable). The geometric mean of these values provides an overall suitability value for the site. Although this is no substitute for a dedicated survey, the suitability value informs the decision on whether to undertake a dedicated survey.
Otters	The area under appraisal is searched for suitable habitat along water-bodies, recording where appropriate, evidence pertaining to the presence of otters (<i>Lutra lutra</i>) in the form of holts, spraints, anal jelly, tracks and feeding remains.
Reptiles	The site is assessed for suitable habitats that may support reptiles. Slow-worms (<i>Anguis fragilis</i>) and common lizards (<i>Zootoca vivipara</i>) inhabit a variety of habitats, such as rough grassland, heathland and woodland edge where there are suitable opportunities for maintaining their body temperature and finding suitable prey. Grass snakes (<i>Natrix natrix</i>) are normally associated with water-bodies but they have a wide home range of up to 2km ² and can occur anywhere

	within that range, particularly in grassy sites as the common name implies. Where relevant habitat occurs, evidence identifying the presence of reptiles, particularly tracks and sloughed skin is recorded.
Water Voles	The area under appraisal is searched for suitable habitat along water-bodies, recording where appropriate, evidence pertaining to the presence of water voles (<i>Arvicola amphibius</i>) in the form of burrows, latrines, runs, footprints and distinctive “feeding lawns”.
White-clawed crayfish	The area under appraisal is searched for suitable habitats that may support white-clawed crayfish (<i>Austropotamobius pallipes</i>). This typically includes freshwater streams and rivers but may also include still water-bodies.

3. RESULTS, APPRAISAL & RECOMMENDATIONS

3.1 Desk study

There are no statutory sites of ecological significance within 2km of the site, albeit there a number within 5km including Crymlyn Bog & Pant y Sais National Nature Reserve, Crymlyn Bog Ramsar and Earlswood Road Cutting & Ferryboat Inn Quarries Site of Special Scientific Interest, which are taken into account the small scale size of the works and the 2km + distance, are considered to be sufficiently distant as to be not affecting the ecological integrity of these sites from the proposed works.

3.2 Protected/notable species and habitats

Table 2: Protected/notable species appraisal

Species	Habitats/features	Evidence	Likelihood of presence	Potential impact	Recommendations Further survey required? (Yes/No) / Avoidance / mitigation / enhancement measures
BADGERS	The site is sloped but no direct evidence was found on the site, especially along the boundaries and no tracks/latrines/snuffle holes and was thus considered to lack suitability for badgers to create a sett	No evidence of badger presence was found on the day of the appraisal.	Very low	No impact.	None. It is possible that badgers will use the front of the site for foraging. As badgers or other mammals could cross the site, it is recommended as a precaution during any building work that any trenches created should be covered when not in use and provided with a 45° escape ramp to ensure that they do not become trapped.
BATS	No buildings on site. There are no trees or shrubs in the main plot but there are boundary trees, which were considered to lack suitable features for roosting bats on account of their moderately young age and not having suitable barn nor damaged boughs and trunks.	No evidence	Negligible to very low for roosting bats in the trees Moderate for foraging bats	No impact	No surveys recommended. The boundary trees were considered to be a negligible to very low risk for roosting bats and likely to be retained. The proposed works may be accompanied by some degree of lighting, which could have negative effects on local bats. Lighting should not be directed onto any retained trees on the bankside habitats or, if applicable, any installed bat roosting features on any retained trees, as this is known to deter bats from using them. It is strongly recommended that any lighting to be incorporated in the site should be low-powered (i.e. lux level of 3 or less), downward-pointing and/or mounted at a low level (e.g. standard bollard height) to minimise the level of impact of lighting on bats. The best types of lighting to use are narrow spectrum lights with no UV content, warm white LED or low-pressure sodium. Ideally the

Species	Habitats/features	Evidence	Likelihood of presence	Potential impact	Recommendations Further survey required? (Yes/No) / Avoidance / mitigation / enhancement measures
	The area is considered to offer some suitability for locally foraging bats.				times that the lighting is operational should be limited to allow for some dark periods overnight. This may be possible through passive infrared sensors and/or controlling levels of lighting throughout some of the night-time period. The most current guidance (September 2018) produced between the Bat Conservation Trust and the Institute of Lighting Professionals should be adhered to and can be accessed via the following link: https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/.
BIRDS	There are good opportunities for birds to nest in the vegetation of the site.	The following birds were observed on site: lesser black-backed gull (<i>Larus fuscus</i>), dunnock (<i>Prunella modularis</i>), blackbird (<i>Turdus merula</i>) robin (<i>Erithacus rubecula</i>) and wren (<i>Troglodytes troglodytes</i>).	Present on and over the site.	High if birds are found to be nesting in areas where the proposed works are due to be carried out, if conducted within the bird nesting period.	All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended). It is therefore generally unlawful to intentionally kill or injure a bird, damage or destroy an occupied nest or take or destroy eggs other than in exceptional prescribed circumstances. Additional protection is given to species listed on Schedule 1 of the Act insofar as it is unlawful to disturb them during nest building, at the nest or when caring for dependent young. Therefore, development operations should take care to avoid the risk of harm to birds and their nests, especially during the nesting season (generally considered to be late February to late August). Any shrub/tree/vegetation clearance should be carried out outside the main nesting season and where this is not possible, a suitably qualified ecologist should be engaged to check for nesting birds and to provide advice on the most appropriate way to proceed. If birds are found to be nesting within the roof during the roof strip, work must cease immediately.

Species	Habitats/features	Evidence	Likelihood of presence	Potential impact	Recommendations Further survey required? (Yes/No) / Avoidance / mitigation / enhancement measures
					Retention of hedgerows and trees on site is strongly advised for nesting habitat and for the benefit of wider biodiversity. Enhancements could include the addition of artificial nesting features to either building (see Table 4 and Appendix 4).
DORMICE	None. Whilst there is woodland nearby to the site, there is poor connectivity to site and the author is aware of a paucity of records of dormice records in the Neath Port Talbot area.	None.	None.	None.	None.
GREAT CRESTED NEWTS	There are no ponds onsite and there are no ponds within 250m radius of the site.	No Evidence	Low. Research has shown that although great crested newts can disperse up to 500m from their breeding ponds, 95% are found within 63m of the	Negligible.	No surveys recommended.

Species	Habitats/features	Evidence	Likelihood of presence	Potential impact	Recommendations Further survey required? (Yes/No) / Avoidance / mitigation / enhancement measures
			pond ¹ . This means that they are more likely to utilise the immediately adjacent terrestrial habitats for foraging, shelter and probably hibernation. Great crested newts are therefore considered unlikely to be present near the site.		
OTTERS, WATER VOLES & WHITE-	There are no running watercourses on or immediately adjacent to the site.	None on site.	None.	None.	None.

¹ Jehle, R. Thiesmeier, B.& Foster, J. 2011. The Crested Newt. British Herpetological Society, London.

Species	Habitats/features	Evidence	Likelihood of presence	Potential impact	Recommendations Further survey required? (Yes/No) / Avoidance / mitigation / enhancement measures
CLAWED CRAYFISH					
REPTILES	The rough ruderal grassy area is considered to be generally unsuitable for reptiles as they lack established tussocks and other forms of shelter. By viewing the historic function of Google Earth, the was maintained between 2006 and 2014 but has only since then developed moderate bramble scrub cover, however the adjacent gardens of the neighbouring properties and field are still maintained and thus slow-worms in particular are considered to be a negligible to very low risk.	None	Very Low. Reptiles have low powers of dispersal and due to the grazing regime and lack of tussocky grasses, they are unlikely to be able to colonise from any nearby sites where they do occur.	None.	No surveys.

Table 3: Habitat/features appraisal

Habitat/Feature	Description	Local BAP ² habitat Y/N	Evaluation and potential impact	Recommendations Avoidance / mitigation / enhancement measures
Garden and ruderals	The rough area of garden grassland area has perennial ryegrass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), cock's foot (<i>Dactylis glomerata</i>), red fescue (<i>Festuca rubra</i>), false oat-grass (<i>Arrhenatherum elatius</i>), white clover (<i>Trifolium repens</i>), mouse-ear chickweed (<i>Cerastium fontanum</i>), tall melilot (<i>Melilotus altissimus</i>), colt's-foot (<i>Tussilago farfara</i>), great willowherb (<i>Epilobium hirsutum</i>), field forget-me-not (<i>Myosotis arvensis</i>), ribwort plantain (<i>Plantago lanceolata</i>), American willowherb (<i>Epilobium ciliatum</i>), dandelion (<i>Taraxacum officinale</i> agg), daisy (<i>Bellis perennis</i>) smooth sow-thistle (<i>Sonchus oleraceus</i>) and hedge mustard (<i>Sisymbrium officinale</i>). Bryophytes noted growing on a site included <i>Brachythecium albicans</i>, <i>Brachythecium rutabulum</i>, <i>Ceratodon purpureus</i>, <i>Hypnum cupressiforme</i> agg., <i>Pseudoscleropodium purum</i> and <i>Kindbergia praelonga</i>. There are large areas of bramble (<i>Rubus fruticosus</i> agg.) with occasional saplings of sycamore and hazel.	N	Very low for the former garden	No surveys. To encourage plant diversity, strips of wildflowers could be sown, and areas left free from grazing to provide longer patches of grass as refuges for wildlife.

² Biodiversity Action Plan

Habitat/Feature	Description	Local BAP ² habitat Y/N	Evaluation and potential impact	Recommendations Avoidance / mitigation / enhancement measures
Boundary Trees and Hedges	The southern boundary has a garden hedge consisting of garden privet (<i>Ligustrum ovalifolium</i>) whilst the remaining hedges, which include tall trees, have sycamore (<i>Acer pseudoplatanus</i>), grey willow (<i>Salix cinerea</i>), hazel (<i>Corylus avellana</i>), common hawthorn (<i>Crataegus monogyna</i>) along with common ivy (<i>Hedera helix</i>) and bramble.	N	Low	The periphery mature trees to be retained on the borders of the site must have tree protection fencing in accordance with BS 5837 'Trees in Relation to Construction' installed around them.

Table 4: Additional recommendations

Number	Additional recommendation
1	Nesting opportunities for house sparrows, swifts and house martins can be provided in the form of sparrow terraces, swift boxes and house martin cups on the exterior walls of a building. Barns, carports and open fronted porches are suitable locations for swallow cups. All these species have undergone a decline in recent years (Red List in the case of house sparrows, Amber List in the case of swifts, house martins and swallows). These nesting features should be installed under the eaves of a building at minimum heights of 2m and face in a north to south-east direction. In addition, hole-fronted and open-fronted bird boxes can be installed on medium-large trees at similar heights and directions to attract other species of birds. Examples are provided in the Ecological Enhancements Appendix below.
2	Roosting opportunities for local bats can be incorporated into any new building through the installation of bat boxes under the eaves either on the exterior walls (e.g. Schwegler 1WQ/1FF bat box or other suitable woodcrete bat box/tube) or fitted into the walls (Habibat 001 bat box) and the creation of raised ridge tiles. Bat boxes (e.g. Schwegler 2FN or other suitable woodcrete box) can also be installed on medium - large trees. Bat boxes should be installed at minimum heights of 2.5m, facing away from external illumination and should ideally face in a south-east or south-west orientation. Examples are provided in the Ecological Enhancements Appendix below. It is strongly recommended that any lighting to be incorporated in the site should be low-powered (i.e. lux level of 3 or less), downward-pointing and/or mounted at a low level (e.g. standard bollard height) to minimise the level of impact from lighting on bats. The best types of lighting for use are narrow spectrum lights with no UV content, warm white LED or low-pressure sodium.
3	The ecological value of the site can be enhanced through planting native species and/or those of value to wildlife, i.e. producing fruits, seeds, nuts or single-flowers. Leaving patches of unmown grass and tall herb as well as creating compost heaps/log piles creates valuable wildlife habitat, particularly for invertebrates, reptiles, amphibians and small mammals including hedgehogs ³ .

³ The State of Britain's Hedgehogs 2015, publicised at a special UK summit on hedgehogs: since 2000, records of the species have declined by half in rural areas and by a third in urban ones. Hedgehogs are also a species of 'Principal Importance' under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and therefore need to be taken into consideration by a public body when performing any of its functions with a view to conservation.

4 Biodiversity Habitat Enhancement

4.1 Rationale

In view of the proposed works, the existing habitat will be partially retained whilst some new habitats will be created and thus this should not be perceived as a negative effect as the existing habitats, are of relatively low ecological value. Although it is possible to create new habitats this will be governed by the need to integrate biodiversity with the scheme and it is necessary to be pragmatic rather than aspirational.

Space will inevitably be limited and it is better to concentrate on creating larger areas of greater value than to create a multitude of tiny fragments that have little purpose within the context of the site or the local area. At the same time, it should be possible to give the wider site some structural diversity while working within the confines of the development.

Additional landscape planting should consist of native species of a mixture similar to that of the local area and should also be of local provenance as far as possible. Where non-native exotic species are used, they should be species that have benefit for wildlife by providing nectar and/or fruits, nuts and seeds which provide food sources for insects, birds and small mammals as well as being aesthetically pleasing. Single flowering varieties should be used as these provide a greater source of nectar. An overall benefit will be connectivity for pollinating insects in line with the current pollinators project. Here small elements can contribute to the enhancement of the overall site, for example planting an area with native berry-bearing shrubs and bushes and climbing plants such as honeysuckle (*Lonicera periclymenum*). This planting could also include species that, while not necessarily native or truly wild, will encourage invertebrates by providing nectaring sources and food plants for larvae as well as being aesthetically pleasing. Details are included in Appendix 4.

The landscaping scheme should adhere to best horticultural practice, including the use of peat-free composts, mulches and soil conditioners.

4.2 Habitat Creation

With regard to the creation of new habitat it is possible to create areas of wildflower grassland and to integrate this into the landscaping. As the field is already partially grazed, a wildflower grassland may be difficult to create in the immediate grounds unless temporarily fenced off during the Spring period and mown late summer (no earlier than mid-July of any year inclusive) after the seeds have set. This is a relatively simple enhancement; it is of great benefit to a diversity of species and is attractive to humans. Areas of wildflower grassland should be created on the margins of the development.

As a consequence of the development works some topsoil will be removed and this will result in areas of subsoil being available. This will have a lower fertility level than

the topsoil and it can be used as a basis for the creation of wildflower grassland as higher fertility favours coarse grasses over flowering herbs. Wildflower grasslands should be created by depositing sub-soil from the development onto the areas for the wildflower meadows and then sowing an appropriate mix of species. Seeds should be spread by broadcasting them during the autumn months. A suitable range of species can be found in the Basic General Purpose Meadow Mixture EM1 from Emorsgate Seeds. Several mixes are commercially available and further information is provided in Appendix 4. Most of it will consist of perennial native species without grasses but if grasses are to be included then in order to produce a more diverse sward the seed mix should include less robust species such as fescues (*Festuca* spp.) and crested dog's-tail (*Cynosurus cristatus*) and must not include coarse species such as perennial rye-grass (*Lolium perenne*) or cock's-foot (*Dactylis glomerata*).

When established, the wildflower grassland will need little management apart from an annual cut no earlier than the end of July. The cut material should be removed as hay or for composting. Unlike permanent pasture, a regime of hay cutting will allow the grassland plants to flower and set seed in the late summer months, thereby increasing the likelihood of propagation. Mowing should take place during a dry period to prevent disturbance to the soft ground but also to prevent the deterioration of the herbage.

It will be necessary to monitor and control any invasive weeds by spot spraying and/or hand pulling. Hand pulling is the preferred method but if spraying is the chosen method, then the systemic herbicide used must be carefully selected and applied so that it does not affect anything other than the target species. The only herbicide that would be suitable here would be glyphosate since this becomes inert on contact with the soil and will only affect plants that have been spot treated. It is likely that within the near future glyphosate will no longer be approved and it will require an alternative herbicide.

As trees and shrubs will be planted where appropriate within the landscape design these should involve block-planting or small clumps, rather than isolated individual specimens, in order to provide shelter, foraging and breeding sites for birds and invertebrates.

Pedunculate oak (*Quercus robur*) and field maple (*Acer campestre*) are characteristic of the area and will be suitable for individual planting. Otherwise, ornamental forms of cherry (*Prunus avium/padus*) or rowan (*Sorbus aucuparia*) will be appropriate where larger trees are less suitable.

4.3 Enhancement

Whilst the onsite non-native hedge will be lost, there is a proposal to include a new native species hedge. The native hedgerow species mix should include the below. Please note that bramble (*Rubus fruticosus* agg.) is not considered to be a woody species within the Hedgerow Regulations 1997 and although very beneficial for foraging animals, it colonises easily and therefore it is recommended that this

species does not contribute to the number of woody species planted, although it can still be planted within the hedgerow. The hedgerow should aim to create a species-rich hedgerow consisting of at least 7 of the woody species listed below.

Common hawthorn (*Crataegus monogyna*)

Blackthorn (*Prunus spinosa*)

Field maple (*Acer campestre*)

Hazel (*Corylus avellana*)

Holly (*Ilex aquifolium*)

Dogwood (*Cornus sanguinea*)

Elder (*Sambucus nigra*)

Guelder rose (*Viburnum opulus*)

Privet (*Ligustrum vulgare*)

With regards to bat and bird boxes, the site would benefit from the addition of these placed on the existing suitable large trees in the vicinity. Ideally the bat boxes should face either south-west or south-east and no less than 2.5m high from ground level, preferably higher, i.e. 3 – 4m would be ideal. Bird boxes should ideally face north to east. In addition, it is best not to place the bat/bird box over or near a window or door as the residents will not be pleased to be walking on or cleaning up bird/bat droppings. Furthermore, in the case of the two proposed buildings on site, raised bat tiles (one for the house and one for the garage) can be incorporated as these are more discreet and less likely to be disturbed. **Please note that only traditional 1 FF bitumastic felt can be place under these feature, which can overly any breathable membrane; bats cannot use breathable membrane as it dangerous to them due to it rethreading.**

In this case **a total of 3 bat features** should be installed on site, the following are recommended:

- **One Vincent Pro bat box or similar (see Appendix 4) onto an adjacent tree in the hedge**
- **One raise ridge tile on the garage.**
- **One raise ridge tile on the house.**

The retained tree and one on the newly developed building would be ideal for the location of the bat boxes. Bat boxes should be installed at minimum heights of 2.5m, facing away from external illumination and should ideally face in a south-east or south-west orientation.

The new building would also benefit from house sparrow terraces and/or swift brick installed. Both of these species are associated with houses and having undergone a steep decline in numbers over recent years they are now listed as being of

conservation concern⁴ (Red List in the case of the house sparrow and Amber List for swifts). The inclusion of such nesting facilities would contribute towards slowing their decline and assist in their conservation as well as enhancing the biodiversity within the development and wider village.

With regards to bird boxes **a total of 3** should be installed on site depending on availability. The following are recommended:

- **2 – Schwegler 1SP Sparrow terrace or similar;**
- **1 -tree nest box (a hole fronted box for trees)**

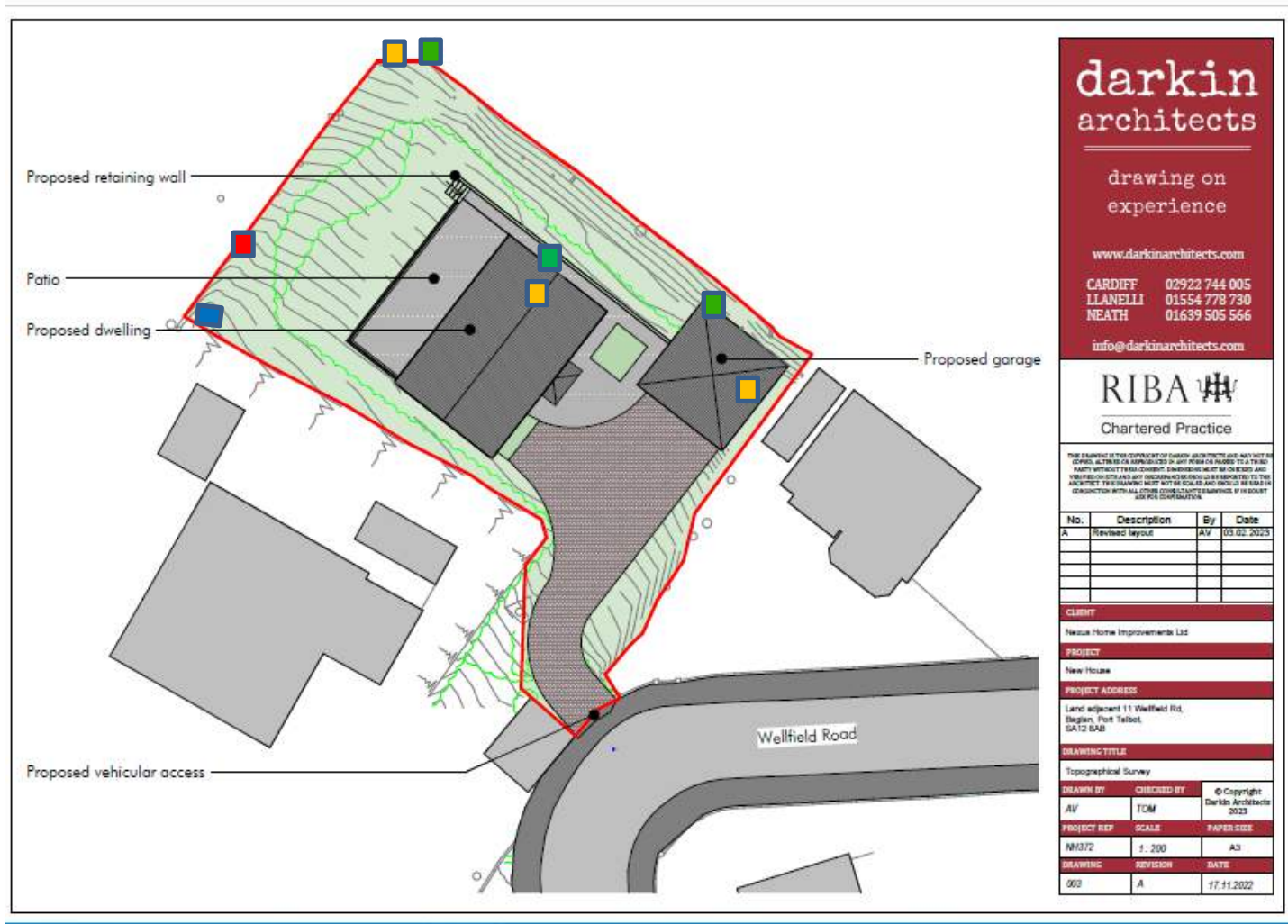
Table 5 – Development activities and timing

(NB: The following table is highly dependent on timings of the proposed works following agreement from Neath Port Talbot Council and is thus only a suggested schedule)

Time of year	Proposed action	Impact on bats and birds enhancement
October 2023 and October 2024	Erection of Vincent Pro bat box or similar and an open bird box on the retained trees (SS 76016 90740) prior to works commencing.	Provided to act an enhancement for both birds and bats
January 2024 and February 2025	Erection of raised bat tiles and a sparrow terrace on the new build and adjacent garage	Provided to act an enhancement for both birds and bats.
January 2024 and January 2025	Implementation a hedgehog box and insect hotel post development	Provided to act an enhancement for both insects and hedgehogs.

⁴ JNCC, BTO, RSPB 2015. Birds of Conservation Concern 2015. RSPB, Sandy.

Figure 1: Proposed Site plan with ecological enhancements

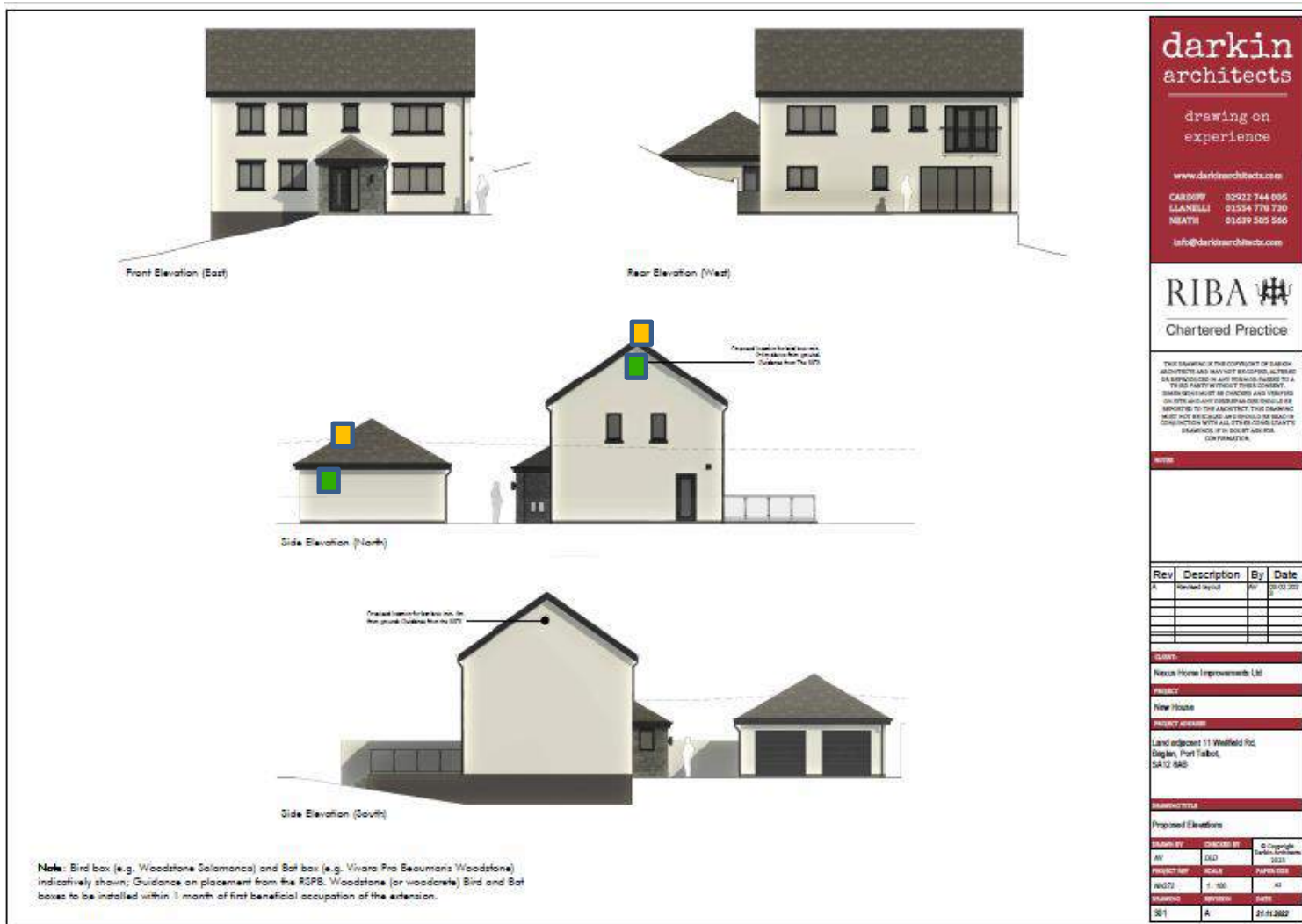


KEY

Green & orange rectangles on the site features indicate bird boxes/bat tiles & box respectively. The adjacent tree in the north west corner can support a bat and bird box each, with a raise bat tile on the roofs of the garage and house and a further bird box on the garage and house too.

Turquoise rectangles indicate hedgehog box. Red rectangles represent insect hotels.

Wildflower areas can be created around the edges of the site



5. CONCLUSIONS & RECOMMENDATIONS

Habitat – the site is considered to be of low ecological value since is largely overgrown garden with some ruderals and bramble scrub, that has only recently developed.

Roosting Bats - There are no buildings on site and the boundary trees were considered to be too young to have developed suitable features for roosting bats.. Therefore, based on the available evidence, there appear to be **no obvious and immediate implications** for the proposed development with regard to bats. The periphery mature trees to be retained on the periphery of the site must have tree protection fencing in accordance with BS 5837 'Trees in Relation to Construction' installed around them.

Nesting Birds - The site provides nesting opportunities for birds within the trees and scrub on and surrounding the edges of the site. As nesting birds are legally protected, development operations should take care to avoid the risk of killing/ injuring birds and their nests, especially during the nesting season (generally considered to be late February to late August). Therefore, **removal and/or management of suitable nesting habitat should be undertaken outside of the main nesting season and where this is not possible, a suitably qualified ecologist must be engaged to check for nesting birds prior to any works taking place** and to provide advice on the most appropriate way to proceed.

Ecological Enhancements – Biodiversity enhancements are described in Section 4.

There appear to be **no other obvious and immediate** issues for this development with regard to any other species protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 and no further dedicated surveys for any other species are recommended. However, in the highly unlikely event that any protected species listed in Section 2 are found on the site during the works then all works must cease immediately, and the advice of a suitably qualified ecologist must be sought.

It should be noted that if more than twenty-four months elapse between this appraisal and survey the commencement of any development then a further appraisal and survey may need to be undertaken at an appropriate time to determine the status of any protected species which may have taken up residence during the intervening period.

6. BIBLIOGRAPHY

Bat Conservation Trust. 2012. Bats and Buildings. Bats and the Built Environment Series. London.

Bright, P., Morris, P. & Mitchell-Jones, T. 2006. The Dormouse Conservation Handbook (2nd Ed.) English Nature.

British Trust for Ornithology website
<http://www.bto.org/about-birds/birdfacts>

Chanin, P. 2003. Monitoring the Otter *Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No. 10, English Nature, Peterborough.

Collins, J. (ed). 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition. Bat Conservation Trust.

England Field Unit, Nature Conservancy Council, 1990. Handbook for Phase 1 habitat survey- a technique for environmental audit. Joint Nature Conservancy Committee, Peterborough.

Gent, A. & Gibson, S. 1998. Herpetofauna Workers' Manual. JNCC, Peterborough

Hayes, C & Whitehurst, J. 2001. Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

JNCC, BTO, RSPB. 2015. Birds of Conservation Concern 2015. RSPB,

Matthews, F. & Chanin, P. (ed). (2016) The Water Vole Mitigation Handbook: Mammal Society Mitigation Guidance Series. Mammal Society, London.

Multi-Agency Geographical Information for the Countryside website <http://magic.defra.gov.uk>

Mitchell-Jones, A.J. 2004 Bat mitigation guidelines. English Nature, Peterborough.

Mitchell-Jones, A.J. and McLeish, A.P. 1999 (revised 2004). The Bat Workers Manual. Joint Nature Conservation Committee, Peterborough.

Neal, E. and Cheeseman, C. 1996. Badgers. Poyser Natural History, London.

Neath Port Talbot County Borough Council. 2014. Local Biodiversity Action Plan.
NPTCBC. <https://www.npt.gov.uk/5405>

Neath Port Talbot County Borough Council. 2021. Biodiversity Duty Plan.
NPTCBC. <https://beta.npt.gov.uk/leisure-parks-and-culture/countryside-and-wildlife/wildlife-law-and-advice/biodiversity-duty-plan/biodiversity-duty-plan-2020-2023/>

Oldham, R.S. *et al* 2000. Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*): The Herpetological Journal Vol. 10, No. 4. British Herpetological Society, London.

Smith, G.R.T., Learner, M.A., Slater, F.M. and Foster, J. 1996. Habitat features important for the conservation of the native crayfish *Austropotamobius pallipes* in Britain. Biological Conservation 75, 239–246.

Strachan, R, Moorhouse, T. & Gelling, M. 2011. Water Vole Conservation Handbook (Third Edition). Wildlife Conservation Research Unit, Oxford.

UK Biodiversity Framework <http://jncc.defra.gov.uk/page-6189>

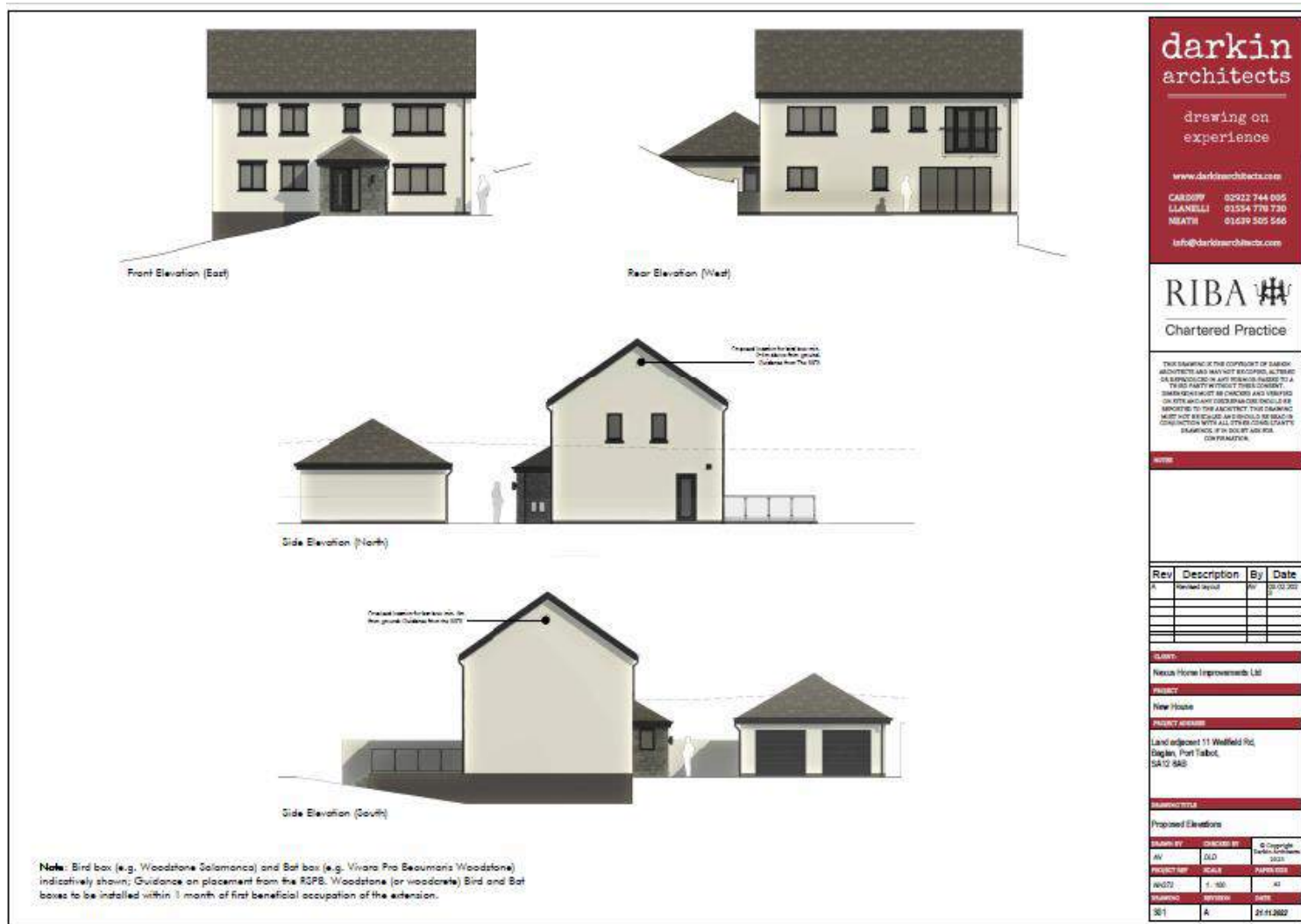
Appendix 1: Maps

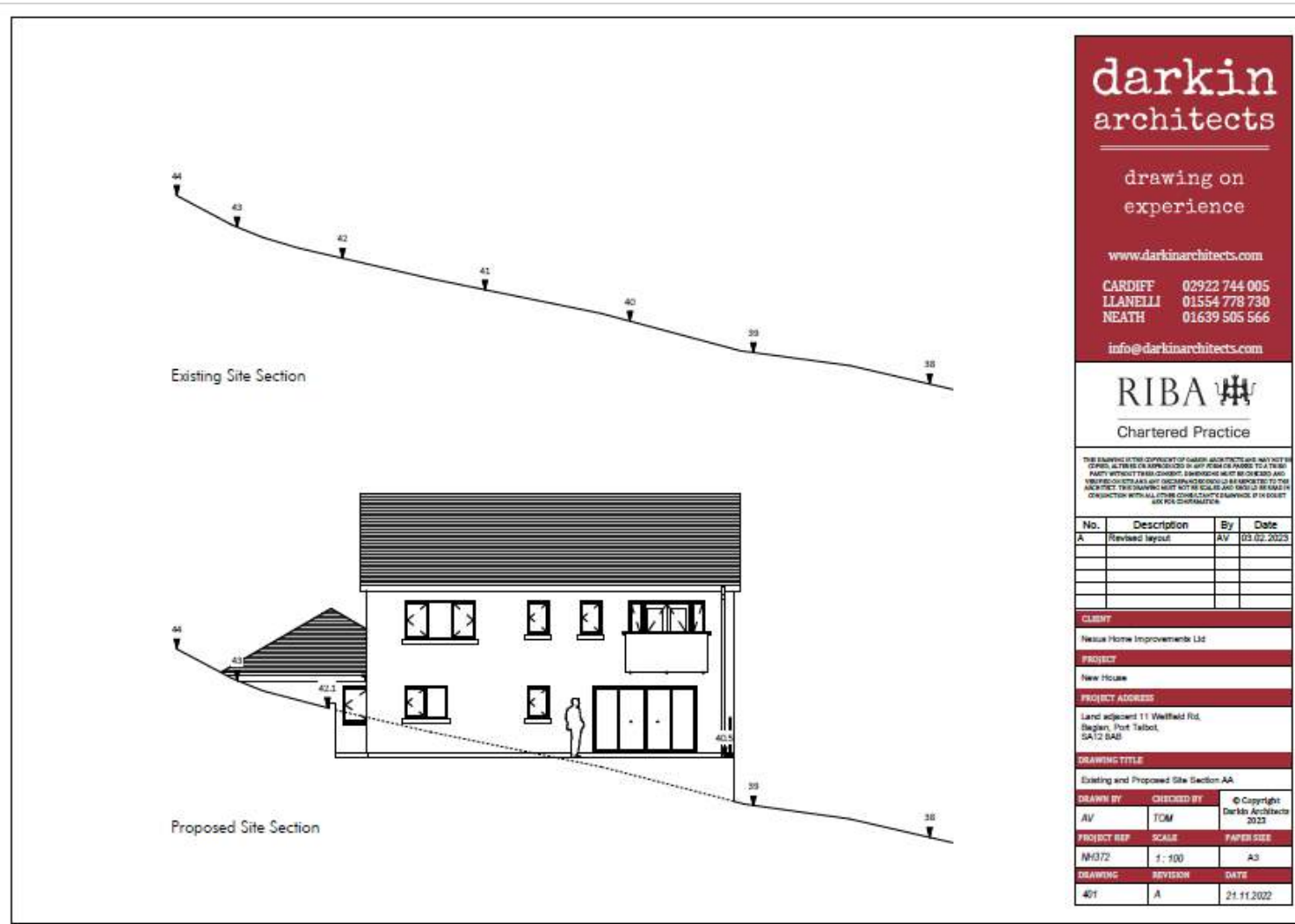




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No.	Description	By	Date
A	Revised layout	AV	03.02.2023

CLIENT			
Nesau Home Improvements Ltd			
PROJECT			
New House			
PROJECT ADDRESS			
Land adjacent 11 Wellfield Rd, Baglan, Port Talbot, SA12 8AB			
DRAWING TITLE			
Existing and Proposed Site Section AA			
DRAWN BY	CHECKED BY	© Copyright Darkin Architects 2023	
AV	TCM		
PROJECT REF	SCALE	PAPER SIZE	
NH372	1:100	A3	
DRAWING	REVISION	DATE	
401	A	21.11.2022	

Appendix 2: Photographs



Plate 1: View of the garden facing north-eastwards – note the bramble scrub



Plate 2: View of the hedgerow along the south-western boundary.



Plate 3: View of the garden's north-western habitats

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Plate 4: View of the northern boundary hedge



Plates 5: View of the northern end of the garden



Plates 6: View of the eastern tree line



Plate 7: View of the south-eastern section of the site.



Plate 8: View of the entrance area for the site.



Plate 9: View of entrance area from Wellfield Road

Appendix 3: Wildlife Legislation

Badgers

Under the ***Protection of Badgers Act 1992*** and the ***Wildlife Order (NI) 1985***, it is illegal to:

- wilfully kill, injure, take, possess or cruelly treat a badger – or attempt to do so
- intentionally or recklessly damage, destroy or obstruct access to a badger sett (whether or not there is a badger in it at the time)
- disturb a badger while it is occupying a sett
- sell, keep or mark a healthy badger or possess any dead badger or part thereof.

Bats

Under the ***Wildlife and Countryside Act 1981***, the ***Wildlife Order (NI) 1985*** and the ***Conservation of Habitats and Species Regulations 2017*** (and ***NI 1995***) it is illegal to:

- intentionally or deliberately kill, injure or capture bats
- intentionally, deliberately or recklessly* disturb bats
- intentionally, deliberately or recklessly* damage, destroy or obstruct any place used for shelter or protection, i.e. bat roosts (even if they are not currently occupied)
- possess, sell or transport a bat, or anything derived from it.

Dormice

Dormice and their habitat are fully protected under the ***Wildlife and Countryside Act 1981 (as amended)*** and the ***Conservation of Habitats and Species Regulations 2017***, making it illegal to:

- intentionally or deliberately kill, injure or capture dormice
- intentionally, deliberately or recklessly* disturb dormice
- intentionally, deliberately or recklessly* damage, destroy or obstruct breeding or resting sites or places used for shelter or protection (whether occupied or not)
- possess or transport a dormouse (or any part thereof) unless under licence
- sell or exchange dormice.

Otters

Otters and their habitat are fully protected under the ***Wildlife and Countryside Act 1981 (as amended)***, the ***Wildlife Order (NI) 1985*** and the ***Conservation of Habitats and Species Regulations 2017*** and ***(NI) 1995***. It is illegal to:

- intentionally or deliberately kill, injure or capture otters
- intentionally or recklessly* disturb otters
- intentionally or recklessly* damage, destroy or obstruct breeding or resting sites or places used for shelter or protection (holts, couches etc) – whether occupied or not
- possess or transport an otter (or any part thereof) unless under licence
- sell or exchange otters.

Water Vole

Water voles are protected under the ***Wildlife and Countryside Act 1981 (Amendment 1998)***, making it illegal to:

- intentionally or deliberately kill, injure or capture water voles
- intentionally or recklessly* disturb voles
- intentionally or recklessly* disturb, destroy or obstruct access to any place that water voles use for shelter or protection (whether occupied or not);
- possess or transport a water vole (or any part thereof) unless under licence
- sell or exchange water voles.

Birds

All wild birds (i.e. resident, visiting and introduced species) in the UK are protected by law under the ***Wildlife and Countryside (WCA) Act 1981 (as amended)***, the ***Wildlife (NI) Order 1985***, and the ***Wildlife and Countryside (Amendment (Scotland) Regulations 2001***, making it illegal to:

- kill, injure or take any wild bird
- take, damage or destroy the nest of any wild bird while it is being built or in use
- take or destroy the eggs of any wild bird
- possess or control (e.g. for exhibition or sale) any wild bird or egg unless obtained legally.

Birds that receive special protection

Species listed in ***Schedule 1*** of the ***WCA 1981*** and the ***Wildlife Order (NI) 1985***, such as the barn owl and peregrine falcon, receive special protection. In addition to the above legislation, it is also illegal to *intentionally or recklessly** disturb any bird listed on ***Schedule 1*** while it is nest-building, or at or near a nest containing eggs or young, or to disturb any of its dependent young. Disturbance could occur, for example, through noise caused by construction works in close proximity to the nest. * The term “recklessly” applies in England and Wales following the ***CRoW Act 2000***.

White-clawed crayfish

Under the ***Wildlife and Countryside Act 1981 (as amended)*** it is illegal to *intentionally take (i.e. capture), sell, barter or exchange* white-clawed crayfish.

Great crested newt

Great crested newts and their habitat are *fully protected* under the ***Wildlife and Countryside Act 1981 (as amended)***, and ***Conservation of Habitats and Species Regulations 2017***. It is illegal to:

- intentionally or deliberately capture, kill or injure great crested newts
- intentionally, deliberately or recklessly* damage, destroy or obstruct access to any place used for shelter or protection, including resting or breeding places (occupied or not)
- deliberately, intentionally or recklessly* disturb great crested newts when in a place of shelter
- sell, barter, exchange or transport or offer for sale great crested newts or parts of them. The legislation covers all life stages: eggs, larvae, juveniles and adults.

Widespread Amphibians

In England, Scotland and Wales the common frog, common toad, smooth newt and palmate newt are all protected against sale, trade etc under the ***Wildlife and Countryside Act 1981 (as amended)***.

Widespread reptiles

All native British reptiles are protected against intentional killing and injury under the ***Wildlife and Countryside Act 1981 (as amended)*** and the ***Wildlife (NI) Order 1985***. **In England, Scotland and Wales**, slow-worm, common lizard, adder and grass snake are also protected against killing, injury and sale, barter or exchange, but their habitats or places of shelter are not specifically protected.

Invertebrates

Certain invertebrate species are covered by the ***Wildlife and Countryside Act (WCA) 1981 (as amended)*** and the ***Wildlife (NI) Order 1985 (as amended)*** and given full protection against killing and injury, damage and/or destruction of their place of shelter, or taking. Other species are protected against sale only. For those species receiving *full protection*, it is illegal to:

- intentionally kill, injure or capture
- intentionally or recklessly* disturb
- intentionally or recklessly* damage, destroy or obstruct places of shelter or protection, including breeding sites (occupied or not)
- possess or transport an animal (or any part thereof) unless under licence
- sell or exchange animals.

* The term “recklessly” was added as an amendment to the ***Wildlife and Countryside Act 1981*** as a result of the ***CRoW Act 2000*** – this applies to England and Wales only.

Plants

Plants are protected by the law. The ***Wildlife and Countryside Act 1981 (as amended)*** and the ***Wildlife (NI) Order 1985*** make it an offence for any person who is not “authorised” to intentionally uproot any wild plant. An “authorised” person can be the owner or occupier of the land on which the action is taken, or anybody authorised by them; or any person authorised in writing by the local authority for the area within which the action is taken. In addition, the ***Wildlife and Countryside Act 1981 (as amended)*** also includes, within ***Schedule 8***, in the order of 60 plant species that it is illegal for any person to intentionally pick, uproot or destroy. It also makes it an offence to offer wild bluebell (*Hyacinthoides non-scripta*) bulbs for sale.

The Hedgerow Regulations 1997 (Environment Act 1995)

Under the Hedgerows Regulations it is against the law to remove most countryside hedges without first getting the permission of the local district council. These Regulations were introduced to offer protection to 'Important Hedgerows', as defined by the Regulations, in response to concern at the rapid loss of hedgerows in England and Wales. Various criteria specified within the regulations are used to identify important hedgerows for wildlife, landscape or historical reasons.

Appendix 4: Ecological Enhancements

BAT ROOSTING FEATURES



Schwegler 1FF bat box



Vincent Pro bat box



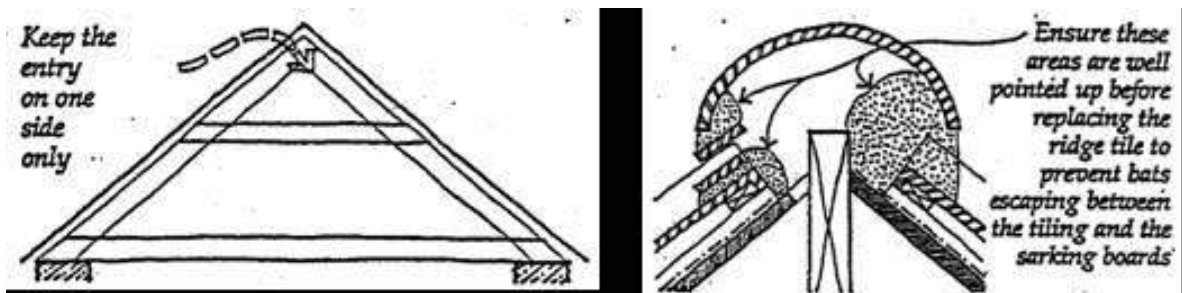
Schwegler 1WQ Summer & Winter bat box



Schwegler 1FD



Habibat 001 Bat Box – integral bat box, fitted into wall



Diagrammatic view of ridge tile and cross section through ridge tile showing access point (taken from Scottish Natural Heritage 1996). Bitumastic lining must be used

near/on the ridge beam to ensure bats can only have contact with this type of membrane to avoid any possible entanglement with a breathable membrane.



Schwegler 2FN bat box for installation on trees

BIRD BOXES



Various swift box designs



House sparrow terrace box



House martin terrace box



Hole-fronted bird box (for trees)



Open-fronted bird box (for trees)



Swallow cup



Hole fronted bird box (for buildings)



An example of a homemade hedgehog house, it can be used either for hibernation or summer use if near a regular food source.



Bee Hotels



Another example of a solitary bee hotel



A multi-purpose insect hotel

Planting Choices for Wildlife



Many wildlife species benefit greatly from considerate planting choices that still meet our practical and aesthetic needs. Plants and trees provide food for wildlife as well as places to nest and rest. Vegetation providing a variety of these functions creates an environment more beneficial for wildlife.

Non native species

Native species provide the best habitat for UK wildlife but there are also many non-native species, which are single flowering and/or provide fruits/nuts/seeds that can be used as food sources for insects, birds and small mammals. When using these non-native species in planting schemes, care should be taken to avoid invasive species such as Cotoneaster and Rhododendron. This is especially important when sites are adjacent to open countryside particularly nature reserves.



Fire thorn *Pyracantha coccinea*

Uses of Wildlife Planting

Wildlife value can be easily incorporated into visually pleasing and useful green areas and amenity spaces, such as borders, grass verges and tree screens.

Attractive Borders: Well selected decorative borders can be valuable for many insects and birds. Native plants can be mixed with single flowering ornamental species to add aesthetic interest and increase the flowering period of a planting scheme.

Shrubs and hedges: Native spiky species like blackthorn and hawthorn are effective barriers when used in hedges. They also provide an attractive feature at all times of year especially when in blossom and fruit. Bushy areas of foliage provide useful nesting and feeding areas for birds and small mammals, as well as foraging/commuting corridors for bats.

Grasses mixes and verges: Leaving uncut areas of suitable grasses provides great wildlife value and is economical to manage. Diverse grassy areas and verges also create an attractive human environment with different flowers and colours. There are a range of native grass and flower mixes for various soil types available on the market.



Wild flower grass mix



Species Selection

There are wildlife friendly species suitable for all situations, from fields, verges, shady corners or small gardens. Listed below are native wildlife friendly plant species organised by type and suitability for different locations.

Large Trees

Ash *Fraxinus excelsior*
Beech *Fagus sylvatica*
English Elm *Ulmus procera*
Oak *Quercus robur* or *Q. petraea*
Small-leaved lime *Tilia cordata*
White willow *Salix alba*
Wild cherry *Prunus avium*



White willow

Medium/small trees

Alder *Alnus glutinosa*
Aspen *Populus tremula*
Crab apple *Malus sylvestris*
Field maple *Acer campestre*
Holly *Ilex aquifolium*
Rowan *Sorbus aucuparia*
Silver birch *Betula pendula*
Yew *Taxus baccata*



Tussocky grassland

Native shrubs

Blackthorn *Prunus spinosa*
Dogwood *Cornus sanguinea*
Elder *Sambucus nigra*
Guelder rose *Viburnum opulus*
Hawthorn *Crataegus monogyna*
Hazel *Corylus avellana*



Blackthorn

Plants for shady areas

Archangel *Lamium galeobdolon*
Betony *Stachys officinalis*
Bluebell *Hyacinthoides non-scriptus*
Bugle *Ajuga reptans*
Foxglove *Digitalis purpurea*
Ground ivy *Glechoma hederacea*
Lily of the valley *Convallaria majalis*
Lords-and-ladies/cuckoopint *Arum maculatum*
Nettle-leaved bellflower *Campanula trachelium*
Primrose *Primula vulgaris*
Sweet violet *Viola odorata*
Wild daffodil *Narcissus pseudonarcissus*

Plants for marshy areas & pond edges

Bugle *Ajuga reptans*
Hemp agrimony *Eupatorium cannabinum*
Marsh marigold *Caltha palustris*
Marsh woundwort *Stachys palustris*
Meadowsweet *Filipendula ulmaria*
Purple loosestrife *Lythrum salicaria*
Ragged robin *Lychnis flos-cuculi*
Water avens *Geum rivale*
Water forget-me-not *Myosotis scorpioides*
Water mint *Mentha aquatica*
Water violet *Hottonia palustris*
Yellow flag *Iris pseudacorus*

**Beneficial cultivated plants
(generally non-natives)**

Grecian windflower *Anemone blanda*
Angelica *Angelica archangelica*
Aubretia *Aubretia deltoidea*
California poppy *Eschscholtzia californica*
Candytuft *Iberis sempervirens*
Christmas rose *Helleborus niger*
Cosmos *Cosmos bipinnatus*
Evening primrose *Oenothera biennis*
Fleabane *Erigeron spp.*
Forget-me-not *Myosotis spp.*
French marigold *Tagetes patula*
Globe thistle *Echinops ritro*
Grape hyacinth *Muscari botryodes*
Hollyhock *Althaea rosea*
Honesty *Lunaria rediviva*
Ice plant *Sedum spectabile*
Lenten rose *Helleborus orientalis*
Tree mallow *Lavatera spp.*
Michaelmas daisy *Aster nova-belgii*
Mint *Mentha x rotundifolia*
Perennial cornflower *Centaurea montana*
Perennial sunflower *Helianthus decapetalus*
Phlox *Phlox paniculata*
Poached-egg plant *Limnathes douglasii*
Red valerian *Centranthus ruber*
Snapdragon *Antirrhinum majus*
Spring crocus *Crocus chrysanthus* and hybrids
Sweet alyssum *Lobularia maritima*
Sweet bergamot *Monarda didyma*
Sweet William *Dianthus barbatus*
Tobacco plant *Nicotiana affinis*
Wallflower *Cheiranthus cheiri*
Alpine rock-cress *Arabis alpina*
Winter aconite *Eranthis hyemalis*
Yellow alyssum *Alyssum saxatile*

Native wildflowers for borders

Agrimony *Agrimonia eupatoria*
Betony *Stachys officinalis*
Bluebell *Hyacinthoides non-scriptus*
Chicory *Cichorium intybus*
Chives *Allium schoenoprasum*
Common poppy *Papaver rhoeas*
Corncockle *Agrostemma githago*
Cornflower *Centaurea cyanus*
Corn marigold *Chrysanthemum segetum*
Cowslip *Primula veris*
Cuckooflower *Cardamine pratensis*
Dame's-violet *Hesperis matronalis*
Devil's-bit scabious *Succisa pratensis*
Field scabious *Knautia arvensis*
Foxglove *Digitalis purpurea*
Goldenrod *Solidago virgaurea*
Great mullein *Verbascum thapsus*
Greater knapweed *Centaurea scabiosa*
Harebell *Campanula rotundifolia*
Herb-robert *Geranium robertianum*
Lady's bedstraw *Galium verum*
Marjoram *Origanum vulgare*
Meadow cranesbill *Geranium pratense*
Common mallow *Malva sylvestris*
Oxeye daisy *Leucanthemum vulgare*
Primrose *Primula vulgaris*
Red campion *Silene dioica*
Snowdrop *Galanthus nivalis*
Spiked speedwell *Veronica spicata*
Tansy *Tanacetum vulgare*
Teasel *Dipsacus fullonum*
Toadflax *Linaria vulgaris*
White campion *Silene alba*
Wild thyme *Thymus drucei*
Yellow loosestrife *Lysimachia vulgaris*



Marjoram



Cornflower



Perennial sunflower

Appendix 5: Ecological Experience

Joshua Evans BSc (Hons) MCIEEM – Consultancy Manager & Principal Ecologist

Joshua joined the team in 2008, previously working as an independent consultant, prior to that he worked for the National Trust and Forestry Commission as an ecological surveyor. For the last 26 years he has worked in both the conservation and consultancy sector. Many of these years were in woodland conservation and management. He is an experienced ecologist with particular expertise in terrestrial and aquatic invertebrates, amphibians, reptiles, small mammals, riparian mammals and bats and holds Natural England (NE) and Natural Resources Wales licences for bats, dormice, great crested newts, white-clawed crayfish and barn owls. He is also an experienced botanist with National Vegetation Classification skills, the recent UK Habitat Classification System and an experienced bryologist. In addition, he has experience in biodiversity net gains and offsetting and being involved in range of conservation and developmental management plans including heritage projects and habitat restoration.

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Worcestershire Wildlife Consultancy provides an independent professional ecological service, encompassing a broad range of ecological knowledge and skills. While maintaining a local focus within the Midlands, we also operate throughout the UK.

We offer a competitive pragmatic solution based environmental service to the business and development sector, local authorities, public utilities, Natural England and non-governmental organizations (NGOs), as well as individual clients.

Worcestershire Wildlife Consultancy (WWC) has been the consultancy for Worcestershire Wildlife Trust since 1988, providing a wealth of experience to the environmental and ecological sector. All the profits of the ecological Consultancy are donated to Worcestershire Wildlife Trust and used to support its charitable work throughout the County.

Worcestershire Wildlife Consultancy has wide-ranging ecological and environmental expertise and a team of specialist associates allowing us to offer a comprehensive list of ecological services:

- Phase 1 Habitat Surveys
- Protected Species Surveys
- Bat Surveys
- Great Crested Newt Surveys
- Reptile Surveys
- Badger Surveys
- Nesting Bird Surveys
- Breeding Bird Surveys
- Barn Owl surveys
- Otter & Water Vole Surveys
- Dormouse Surveys
- Invertebrate surveys
- Small Mammal Surveys
- Botanical Surveys (incl. NVC – National Vegetation Survey)
- Hedgerow Surveys
- Invasive Weed Surveys
- Protected Species Licence Applications (incl. Bat Low Impact Class licence)
- Ecological Clerk of Works
- Mitigation Advice & Implementation
- Monitoring – Botanical & Wildlife
- BREEAM Assessments (incl. Code for Sustainable Homes)
- Ecological Planning Advice
- GIS Analysis
- Pond Surveys
- River Corridor Surveys
- Habitat Management Plans
- Habitat Creation/Restoration Advice & Implementation
- Arboricultural Surveys
- Training/CPD

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