DARWIN ECOLOGY
integrating nature conservation

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Ecological Impact Assessment

Stenak
Goongumpus
St Day,
TR16 5JL

October 2023

Darwin Ecology Ltd
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QUALITY CONTROL		
The information which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.		
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This report remains valid for 12 months from date of issue.

Survey data are valid for 12-18 months from the date the survey was undertaken.

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living creatures are capable of migration and whilst protected species may not have been located during the survey duration, their presence may be found on site at a later date.

The views and opinions contained within the document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental

1. EXECUTIVE SUMMARY

1.1. Darwin Ecology Ltd was commissioned by Laurence Associates to undertake a Preliminary Ecological Appraisal (PEA) at Stenak, Goongumpus, St Day, TR16 5JL, OS Grid Reference SW 74188 42656. The survey was required to inform a planning application for the proposed construction of a two bedroom dwelling within the existing garden of Stenak house.

1.2. A previous Preliminary Ecological Appraisal was carried out by Darwin Ecology in February 2022. Habitats comprised well managed improved grassland, scrub including buddleija shrubs and hardstanding. The site was bounded by scattered trees and a Cornish hedge.

1.3. During the update PEA/ PRA in 2023, no significant changes to the habitat or buildings onsite were noted.

1.4. A garage was present on site due to be demolished and rebuilt as part of the proposal. The building was inspected for its suitability for roosting bats and birds and was found to offer **Negligible** suitability. No further bat surveys are required.

1.5. The habitats within the site are common and widespread within the local area. The proposals will only result in a small loss of improved grassland and buddleja shrubs to facilitate the development.

1.6. The removal of the improved grassland has a very low potential to negatively impact upon common amphibians and reptiles. Avoidance measures comprise keeping grassland habitat maintained to a short length to reduce suitability for reptiles prior to works.

1.7. Clearance of any scrub/vegetation suitable for nesting birds should take place outside nesting bird season. Alternatively a nesting bird check will be carried out prior to clearance to avoid impacts to nesting birds.

1.8. General reasonable avoidance measures are recommended during construction to safeguard animals passing through the site.

1.9. There is opportunity for enhancement within the application site to include the creation of bird and bat boxes, areas of rough grassland, hibernacula for reptiles, hedgehog houses and invertebrate hotels.

2. INTRODUCTION AND BACKGROUND

2.1. Darwin Ecology Ltd was commissioned by Laurence Associates to undertake a Preliminary Ecological Appraisal (PEA) at Stenak, Goongumpus, St Day, TR16 5JL, OS Grid Reference SW 74188 42656. The survey was required to inform a planning application for the proposed construction of a 2 bedroom dwelling within the existing garden of Stenak house.

2.2. The surveys and report follow the Chartered Institute for Ecological and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (2017), which sets out the approach for PEAs to provide a rapid assessment of the ecological features present, or potentially present, within a site and its surrounding area.

2.3. Darwin Ecology issued a report for following a site visit in 2022 (PRA Report - Stenack, Darwin Ecology 2022). An update site visit has subsequently been carried out in October 2023 by darwin Ecology, which did not find any significant changes to the site. This report has therefore been provided as an up to date assessment of the site.

2.4. Proposed plans for the site are provided in **Appendix 1**.

Site Overview

2.5. The site is situated to the south of the A30 and approximately 1.3 km east of Carharrack.

2.6. The site itself is comprised of mown improved grassland with scattered trees which is currently used as garden. The site is bound by a species-poor Cornish hedge, which is largely covered by common ivy *Hedera helix* and bramble *Rubus fruticosus agg.* (**Figure 1**).

2.7. The immediate area comprises an access track with semi-improved grassland and scrub to the east and neighbouring gardens to the west. Beyond the site are further semi-improved grassland fields, arable fields and dense scrub habitat.

2.8. The wider landscape comprises arable fields to the west, solar farms to the north, semi-improved and improved grassland to the east and residential and arable fields to the south (**Figure 2**).

Figure 1: Site location within the local landscape (Copyright Google Earth Maps, 2022)

Figure 2: Site location within the wider landscape (Copyright Google Earth Maps, 2022)

3. LEGISLATION & POLICY

General Wildlife Legislation

3.1. Wildlife in the United Kingdom (UK) is protected through European and national legislation, supported by national and local policy and guidance. Development can contribute to conservation and enhancement goals outlined by these various legislation and policy by retaining and protecting the most valuable ecological features within a site and incorporating enhancements to provide biodiversity net gain.

3.2. This section provides a brief summary of the principle legalisation and policy that triggers the requirement for PEA in the UK. The presence of protected species within a site are a material consideration during the planning process. PEAs (and any necessary further assessments) provide an ecological baseline for a site and evaluation of the potential impact of proposals.

3.3. It is the responsibility of those involved with development works to ensure that the relevant legislation is complied with at every stage of a project. Such legislation applies even in the absence of related planning conditions or projects outside the scope of the usual planning process (i.e. permitted development projects or projects requiring Listed Building Consent only).

Relevant Legislation

3.4. The principal pieces of legislation relating to wildlife and of relevance to this report are:

1. *EU Habitats Directive (1992);*
2. *EU Birds Directive (1979);*
3. *Conservation of Habitats and Species (Amendment) Regulations 2017;*
4. *The Wildlife and Countryside Act 1981 (as amended);*
5. *The Natural Environment and Rural Communities Act 2006;* and
6. *The Protection of Badgers Act 1992* (extended under *The Hunting Act 2004*).

3.5. The above legislation aims to protect sites and species and give detailed descriptions of exactly how these features are protected and what actions would constitute an offence.

National Planning Policy

3.1. The *National Planning Policy Framework (2021)* aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

3.2. Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications.

3.3. Planning policies and decisions should contribute to and enhance the natural and local environment by:

> *174 a)* Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
>
> *174 b)* Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
>
> *174 d)* Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
>
> *175)* Plans should: distinguish between the hierarchy of international, national and local designated sites; allocate land with the lease environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries;
>
> *176)* Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and Broads. The scale and extent of development within all these designated areas should be limited, while development within their settings should be sensitively located and designed to avoid or minimize adverse impacts on the designated area.

3.4. Specific policies regarding habitats and biodiversity comprise:

> *179)* To protect and enhance biodiversity and geodiversity, plans should:
>
> > *a)* identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and

> *b)* promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.

180) When determining planning applications, local planning authorities should apply the following principles:

> *a)* if significant harm to biodiversity resulting from a development cannot be avoid (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
>
> *b)* development on land within or outside of Sites of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the feature of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
>
> *c)* development resulting in the loss r deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
>
> *d)* development whose primary objective is to conserved or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around development should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

3.5. *Circular 06/05: Biodiversity and Geological Conservation* provides guidance on the application of the law relating to planning and nature conservation and complements the *National Planning Policy Framework*.

3.6. *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* provides the *UK Biodiversity Action Plan* and country level biodiversity strategies for England, based on the list of habitats and species listed on *Section 41* of the *Natural Environment and Rural Communities Act 2006*. These are considered the habitats and species of principal importance requiring conservation action.

Local Planning Policy

3.7. The local planning policy for the site is the New Local Plan for Cornwall with relevant policies comprising:

Policy 22: For residential development and student and tourist accommodation, mitigation measures for recreational impacts on European Sites will be required where development is proposed within the identified zones of influence around those European Sites that are vulnerable to adverse recreational impacts. Residential development, and student and tourist accommodation within these zones of influence will be required to provide for appropriate management, mitigation and monitoring on Site, and/ or financial contributions towards off-Site mitigation and management. This will need to be agreed upon and secured prior to the approval of the development.

Policy 23:

Comprises of a number of measures for development proposals.

- Development should conserve, protect and where possible enhance biodiversity and geodiversity interests and soils commensurate with their status and give appropriate weight to their importance (3).

- All development must ensure that the importance of habitats and designated Sites are taken into account and consider opportunities for the creation of a local and county-wide biodiversity network of wildlife corridors which link County Wildlife Sites and other areas of biodiversity importance (3);
- The highest level of protection will be given to potential and existing Special Protection Areas, candidate and existing Special Areas of Conservation and listed or proposed RAMSAR Sites (3a).
- Development proposals within or outside an SSSI or Marine Conservation Zone which would be likely to adversely affect the Site (either individually or in combination with other developments) will not be permitted unless the benefits of the development, at this Site, clearly outweigh both the adverse impacts on the Site and any adverse impacts on the wider network of SSSI and Marine Conservation Zones (3b).
- Development likely to adversely affect locally designated Sites, their features or their function as part of the ecological network, including County Wildlife Sites, Local Geological Sites and Sites supporting Biodiversity Action Plan habitats and species, will only be permitted where the need and benefits of the development clearly outweigh the loss and the coherence of the local ecological network is maintained (3c).
- Adverse impacts on European and UK protected species and Biodiversity Action Plan habitats and species must be avoided wherever possible (i) subject to the legal tests

afforded to them, where applicable (ii) otherwise, unless the need for and benefits clearly outweigh the loss (3d).

- Development must avoid the loss or deterioration of ancient woodland and veteran trees, unless the need for, or benefits of, development on that Site clearly outweigh the loss (3e).
- Development should avoid adverse impact on existing features as a first principle and enable net gains by designing landscape and biodiversity features and enhancements, and opportunities for geological conservation alongside new development. Where adverse impacts are unavoidable they must be adequately and proportionately mitigated. If full mitigation cannot be provided, compensation will be required as a last resort (4).

Local Biodiversity Action Plan

3.8. The local biodiversity action plan relevant to the site is Cornwall Biodiversity Action Plan. It aims to set out a long-term strategy for biodiversity conservation within Cornwall and provide a series of objectives and actions for achieving successful conservation of habitats and species across the county.

3.9. The Cornwall Biodiversity Action Plan (BAP) has been developed since 1996 by the Cornwall Biodiversity Initiative (CBI). The first two volumes published in 1996 identified priorities for conservation and provided action plans for the Cornish priority habitats and species. Subsequent updates published in 2004 and 2011 were produced to enable local conservation work to contribute to UK BAP targets and in response to updated UK BAP lists of priority habitats and species, the UK strategic biodiversity framework and the Lawton Review.

- The targeted habitat and species action plans highlight the UK BAP priority habitats and species that occur in Cornwall and are comprised of 25 habitats and 127 Species Action Plans, written by local experts. The priority habitats of importance in Cornwall include many coastal habitat types, woodland, Cornish hedges and heathland. Priority species identified include six bat species, 41 bird species and many more invertebrate species, plant species and marine species.

- The CBI works in partnership with a number of organisations to:

- Incorporate the principles for conservation of priority species and habitats into strategic planning and influence the Core Strategy for Cornwall.
- Develop planning policies which will help deliver enhancement and protect biodiversity and geodiversity for the benefit of local communities.

4. METHODOLOGY

Desk Study

4.1. A desk study was undertaken for designated sites, protected or notable species, and habitat records within a 2 km radius of the site. The following resources were consulted:

- The MagicMap website provided information regarding statutory designated sites of nature consideration interest within 2 km of the site, details of European Protected Species (EPS) license issued for bats within 2 km, and details of EPS licences for dormice within 1 km of the site;
- A search of the Cornwall Council Planning Portal for relevant planning applications within the last two years was conducted to find any relevant reporting within the local area; and
- Google Maps and the Ordnance Survey (OS) leisure map were used to view aerial photographs and maps to assess the ecological context of the site within the wider landscape.

Extended Phase 1 Habitat Survey

4.2. Ecologist Genevieve Labram conducted a walkover survey on 20th January 2022 and Assistant Ecologist Elen Peel conducted an update walkover survey on 24th October 2023.

4.3. The PEA survey assessed habitats present within the application red line boundary for their potential to support protected species, including:

- Bats;
- Common amphibians;
- Reptiles;
- Dormice *Muscardinus avellanarius*;
- Otters *Lutra lutra* and water voles *Arvicola amphibious*;
- Other terrestrial mammals, including hedgehogs *Erinaceus europaeus* and badgers *Meles meles*;
- Breeding birds; and
- Invertebrates.

4.4. The site was also searched for non-native, invasive plant species, with particular care to search for the most commonly occurring and problematic species, such as Japanese knotweed *Fallopia japonica*, Indian balsam *Impatiens grandiflora* and giant hogweed *Heracleum mentegasianum*.

Limitations

4.5. Ecological surveys are limited by factors that affect the presence of plants and animals such as the time of the year, weather, migration patterns. The updated survey was undertaken in October and therefore represents a valid sample of ecological evidence present on that date/season.

4.6. The absence of desk study records is not relied upon to determine absence of a particular species or habitat. Often, the absence of records is a result of under-recording within the given areas. As the report covers an area of existing garden, and considering the scale of the proposed a full desk study was not required.

4.7. No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site's ecological importance in it's condition at the time of survey has been made.

Quality Assurance

4.8. The surveys and assessments have been overseen by and the report checked and verified by a member of CIEEM, whom is bound by its code of professional conduct. All surveys and assessments have been undertaken with reference to the recommendations given in the British Standard BS 42020, and as stated within specialist guidance, as appropriate.

5. SURVEY RESULTS

Desk Study

Statutory and non-statutory Designated Sites

5.1. There is a single statutory site designated for biological (rather than geological) interest within a 2 km radius of the site at Stenak, comprising of West Cornwall Bryophytes Site of Scientific Interest (SSSI). The SSSI is located immediately north of the site boundary.

5.2. There are no non-statutory designed sites within a 1 km radius of the site.

Table 1: Statutory designated sites within a 2 km radius of the site.

Designated Sites	Name and Designation Type	Reason for Designation	Approximate Distance from Site
Within Site Boundaries	There are no sites designated for biodiversity within the site boundaries		
Within 2 km of Site	West Cornwall Bryophytes SSSI	This site is special for its population of rare and scarce bryophytes (mosses and liverworts) which are adapted to growing on copper-rich substrates.	5 m north of site.

SSSI Impact Risk Zone

5.3. The site lies within a SSSI Impact Risk Zone for the above SSSI site. All planning applications must notify the local planning authority expect householder. Therefore, consultation with the Local Planning Authority will be required for this project.

SAC Zone of Influence

5.4. The site lies within two SAC (Special Area of Conservation) zones of influence, Penhale Dunes SAC and Fal and Helford SAC. Therefore a Habitat Regulations Screening Assessment will be required.

Cornwall Council Planning Portal

5.5. The Cornwall Council Planning portal was checked for any applications within a 1km radius with relevant ecological reports. No applications with ecology reports were found and no previous ecological report has been carried out within the site.

Priority Habitats and Ancient Woodland

5.6. There are multiple areas of priority deciduous woodland within 1km of the site, the closest being 330 m north of site.

5.7. Further priority habitats within 1 km of the site include Calaminarian grassland, lowland heathland, and “Open Mosaic Habitats on Previously Developed Land”.

5.8. There are no areas of ancient woodland within 1 km of the application site.

Extended Phase 1 Habitat Survey

Habitats

5.9. The site comprises short improved grassland bounded by scattered trees and species poor Cornish hedges with areas scrub, bare ground and hardstanding. Descriptions of these habitats are below and the location of the habitats is shown in **Figure 3**: Habitat Map, and photos are provided below.

Improved Grassland

5.10. Improved grassland is the dominant habitat within the site. The existing garden was cut short at <5 cm tall and is regularly maintained. Species present at the time of survey include perennial ryegrass *Lolium perenne* (dominant), with occasional broad-leaved dock *Rumex obtusifolius,* cocks foot *Dactylis glomerata*, dandelion *Taraxacum officinale agg*., daisy *Bellis perennis*, Herb Robert *Geranium robertianum* and white clover *Trifolium repens*,.

5.11. The amenity grassland is of **Site Value.**

5.12. The proposals will primarily impact this habitat, however are also due to retain large sections in the northern aspect.

Cornish hedges

5.13. The northern and eastern boundaries of the site was species-poor Cornish hedge. Species include bramble *Rubus fruticosus agg*., blackthorn *Prunus spinosa,* gorse *Ulex europaeus,* hawthorn *Crataegus monogyna*, with occasional elder *Sambucus* nigra. Other species include cleavers *Galium aparine,* common nettle *Utica dioica,* fern sp., harts tongue fern *Asplenium scolopendrium,* ivy *Hedera helix* and red campion *Silene dioica.*

5.14. Cornish hedges are of **County value** and are a Local Biodiversity Action Plan (LBAP) habitat.

5.15. The proposals will retain all hedges as part of this application.

Scattered trees

5.16. Approximately 10 scattered semi-mature trees have been planted along the boundary of the site within the grassland. Species include a mixture of native trees such as alder *Alnus glutinosa*, hazel *Corylus avellana*, willows *Salix sp.*, hawthorn and blackthorns.

5.17. Scattered trees are of **Site Value** and will be retained as part of the proposals**.**

Scrub

5.18. Small areas of scrub vegetation were present within the site.

5.19. Buddleja *Buddleja davidii* lined the access path, whilst bramble, common nettle *Urtica dioica*, and alexanders *Smyrnium olusatrum* surrounded the Cornish hedge and garage.

5.20. A stand of *Rhododendron* sp. was noted near the eastern boundary.

Hardstanding

5.21. The eastern and southern boundary of the site comprised of a hardstanding access track, composed of loose gravel.

Preliminary Roost Assessment

5.22. Three structures were present on site and due to be impacted by the proposed development, composing of a garage, and two garden sheds.

5.23. The garage

The garage was a double entrance structure that is currently used for storage. The garage was constructed from concrete with a metal frame and corrugated fibre-reinforced concrete board roof. The roof has some clear plastic sections and with the addition of windows, there was high levels of light internally.

5.24. Gaps in the metal frame and roof were filled with expanding foam, restricting access for bats or birds.

5.25. No suitable crevice features were recorded in the garage.

5.26. The sheds

Two sheds are present on the site comprising of single skinned interlaced timber cladding and bitumen felt roof. The smaller shed was in a state of significant disrepair.

5.27. Both sheds offered no suitability for roosting bats and no further consideration for roosting bats is required for the site.

Site Photographs

Image 1: Short improved grassland

Image 2: Cornish hedge on northern boundary

Image 3: Access path to the east of site, and buddlejia

Image 4: Stand of rhododendron (target note 2)

Image 5: Log pile (target note 1)

Image 6: Shed

Image 7: Fallen down shed

Image 8: Internal of garage

Image 9: Internal of garage

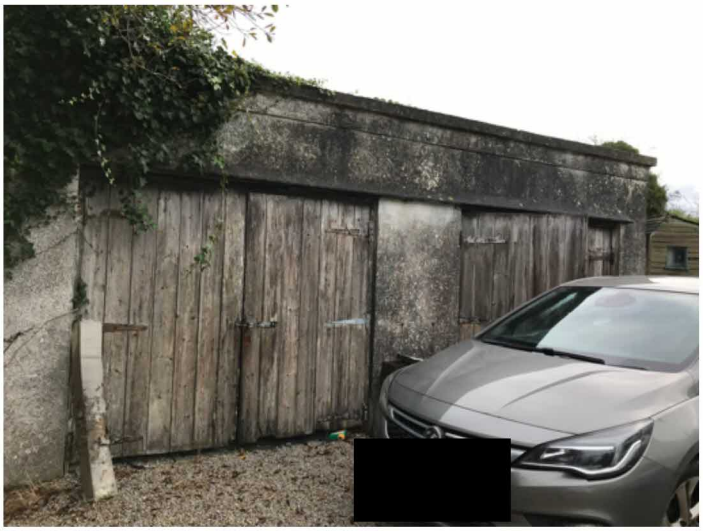

Image 9: External of garage

Image 9: Access path to site

***NOTE Areas are indicative and are not shown to exact scale.**

Site Boundary

Cornish Hedge

Target Notes

Improved Grassland

Scrub (Buddleja)

Scrub (Bramble)

Building

Hardstanding

Tree

Location of proposed

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Figure 3: Habitat Map

Date: 24/10/2023

Protected Species

Bats

5.28. There are no EPS licences for bats within a 2 km radius of the site.

5.29. The Cornish hedges, trees and areas of scrub provide suitable foraging and commuting habitat for bats. The proposals will retain the Cornish hedge and trees, with some areas of scrub being removed.

5.30. The proposals are not considered to have an impact on bats however any additional lighting, has potential to disturb foraging bats.

Common Amphibians

5.31. No observations of common amphibians were made during the survey.

5.32. The site does not contain any water bodies suitable to support amphibians. The nearest pond is approximately 550 m south east of site and the nearest stream is 900 m north of site, these are separated from the site by roads.

5.33. The grassland onsite is regularly mown short which is suboptimal for amphibians, however, the Cornish hedges, scrub and wood pile provide some limited suitability for hibernating and foraging.

5.34. The loss of grassland is will result in a negligible impact to amphibians.

5.35. The loss of some scrub habitats has the potential to harm/injure/kill reptiles if present on site. Additionally, there is some potential for disturbance of amphibians during the site clearance stage.

Reptiles

5.36. The grassland onsite is regularly mown short which is suboptimal for reptiles, however, the retained Cornish hedges and scrub provide some limited suitability for hibernating, foraging and basking reptiles.

5.37. The loss of some scrub habitats has the potential to harm/injure/kill reptiles if present on site. Additionally, as with amphibians, there is some potential for disturbance of reptiles during the site clearance stage.

Dormice

5.38. There are no EPS licences for dormice within a 2 km radius of the site.

5.39. No incidental evidence of dormouse field signs (e.g. dormouse opened hazel nuts or nests) were observed onsite during the survey.

5.40. The Cornish hedges provides sub-optimal habitat for dormice within the site. There is no direct link from these hedges to deciduous woodlands, however, areas of dense scrub habitat lie beyond the north of the site which could offer some potential habitat for dormice.

5.41. The Cornish hedges are due to be retained so no impacts to dormice are anticipated.

Badgers

5.42. No evidence of badger *Meles meles* e.g. badger hairs, latrines, snuffle marks, or sett entrances were recorded on site.

5.43. The arable and grassland fields surrounding the site would be suitable for foraging badger and setts and badger may occasionally venture onto the site to forage. Thus, badger may be impacted during the works.

Hedgehogs

5.44. No evidence of hedgehog was observed during the survey.

5.45. The site provides suitable habitat for hedgehogs in the form of improved grassland and Cornish hedges for hibernation.

5.46. There will be no loss of hibernation habitat for hedgehogs as a result of this development, and some grassland will be retained for foraging, therefore, no impacts on hedgehogs are anticipated.

Otters and water voles

5.47. There are no waterbodies within the site or immediate area.

5.48. the nearest stream is 900 m north of site, which is separated from the site by roads.

5.49. Due to lack of suitable habitat it is unlikely that otter and water voles are present and are not considered further.

Breeding Birds

5.50. The Cornish hedges, small areas of scrub (especially the scrub associated with the garage) provide suitable nesting habitat for common species.

5.51. The clearance of the scrub on site would have potential to disturb nesting birds.

Invertebrates

5.52. The site is likely to support common assemblage of invertebrates.

6. DISCUSSION AND RECOMMENDATIONS

Sensitive Receptors/Ecological Important Features

6.1. The following habitats and species have been evaluated as being subject to potential adverse effects in the absence of mitigation:

- Common amphibians
- Reptiles
- Birds
- Badger

Mitigation Hierarchy

6.2. Where the proposals have the potential to have a significant adverse effect on features of nature conservation or priority protected species, recommendations for avoidance, mitigation or compensation are required and should follow the mitigation hierarchy as follows:

- **Avoidance:** can significant harm to wildlife species and habitats be avoided through locating an alternative site or change in design that is less harmful to habitats and species?
- **Mitigation:** where significant harm cannot be wholly or partially avoided, can it be minimised by design or by the use of effective mitigation measures that can be secured by, for example conditions or planning obligations?
- **Compensation:** where despite whatever mitigation would be effective, there would still be a significant effect, as a last resort, can this be properly compensated for by measures to provide for an equivalent value of biodiversity?

Designated Sites, Priority Habitats and Ancient Woodland

6.3. Considering the small scale of the proposals, there are no anticipated direct effects on designated sites within a 2 km radius of the site however, during construction care must be taken to avoid impacts to the nearby SSSI such as avoiding runoff and dust pollutants. A Construction Management plan may therefore be required.

6.4. Further, the location of the site within the two SAC impact zones will require a Habitat Regulations Screening Assessment (HRA) to be conducted.

Habitats on Site

Status of Habitats on Site

6.5. Habitats within the application site are common and widespread within the area. Overall the habitats are of low intrinsic value.

6.6. Habitats within the application site have the following intrinsic values; the hardstanding habitat has negligible intrinsic value, improved grassland has low intrinsic value, scrub, Cornish hedges and scattered trees have a higher intrinsic value in the context of the site

Potential Impacts

6.7. The proposals include the construction of a two bedroom dwelling within the existing garden of Stenak house, which will include the removal of the improved grassland, garage, sheds and a small section of scrub.

6.8. Considering the scale of the site, this is anticipated to have a **low impact** on the intrinsic value of the habitats within the wider area, and habitats of higher value such as the Cornish hedges and mature trees and are due to be retained and enhanced.

Reptiles and Amphibians

Status on Site

6.9. The site holds some suitability for these species groups.

Potential Impacts

6.10. The majority of suitable reptile habitat within the site will be retained, namely the base of the Cornish hedges.

Mitigation

6.11. As the area proposed for the building is small in comparison to the site, it is recommended that the vegetation is maintained at a height of 5 cm or less over winter to deter reptiles and amphibians from this area.

6.12. A hand clearance of the wood pile and fallen down shed will need to take place, we would recommend this taken place under supervision of an ecologist.

6.13. Provided the above mitigation is followed in addition to the precautionary measures described below for mammals, there are no anticipated impacts to this species group.

6.14. Enhancements to the site should include wildflower planting and areas of rough grassland will would enhance the site for reptiles.

Badgers

Status on Site

6.15. The arable and grassland fields surrounding the site would be suitable for foraging terrestrial mammals such as badger which may occasionally venture onto the site to forage. No badger evidence was observed at the site or on the boundaries of the site.

Potential Impacts

6.16. The proposals are not anticipated to significantly reduce available habitat for terrestrial mammals, however there is a risk of harm to animals passing through the site during construction and precautionary methods should be put in place.

Mitigation

6.17. It is recommended that should any excavations be left open during the construction phase, a mammal ramp is installed in said excavations to facilitate the escape of any mammals falling into the excavations. This can be as simple as placing a wooden board acting as a ramp in the hole. Alternatively, excavation holes can be covered overnight to prevent mammals from falling in.

6.18. **Birds**

Status on Site

6.19. Several trees and scrub on site provide suitable nesting and foraging habitat for common birds.

Potential Impacts

6.20. The clearance of scrub has potential to impact nesting birds

Mitigation

6.21. When vegetation is being removed, the applicant should take action to ensure that vegetation or site clearance are timed to avoid the bird nesting season of early March to August inclusive. If this is not possible, the site should be inspected for active nests by an ecologist within 24 hours of any clearance works. If any active nests are found they should be left undisturbed with a buffer zone around them, until it can be confirmed by an ecologist that the nest is no longer in use.

7. ENHANCEMENT RECOMMENDATIONS

7.1. National planning policy states that all developments should seek to enhance onsite biodiversity whether impacts on protected species are recorded or not. Incorporating enhancement features into new or renovated buildings, and landscaping proposals, should be carefully considered. These features can be simple and inexpensive, please see below for specific recommendations.

Bats

7.2. A single integrated bat box is recommended such as Green and Blue integrated bat block (or similar) to be installed in the new building. Integrated boxes should be placed at a height of at least 4 m, away from artificial lighting, on an eastern, southern or western aspect, avoiding positions above windows. Further details on the installation of integrated bat features are available in the appendix.

Birds

7.3. We would recommend the installation for a universal nest brick to be integrated into the new building, if this is not possible an alternative would be a tree mount bird box like Vivara Pro Seville 32 Woodstone nest box or Vivara Pro Barcelona open woodstone.

Grassland Management

7.4. The easiest and most appropriate way to maintain and enhance the ecological value of the site is via appropriate management practices.

7.5. Rough grassland buffers at the base of the Cornish hedges approximately 0.5m wide should be left to grow long and over-sown with wildflower seed. These areas should have reduced management, and mown 2-4 times a year to reduce the dominant grasses and to allow the wildflower seeds to germinate.

Reptile and Amphibian Habitat

7.6. To provide new resting and hibernating habitat for reptile and amphibians, small deadwood piles or hibernaculum features can be incorporated at appropriate areas of the site. For instance rock and log piles at the base of the Cornish hedge on the eastern boundary would provide a good location for these as they provide the additional shelter for reptiles and have good access to the surrounding scrub when basking and foraging.

Hedgehog Habitat

7.7. Appropriate hedgehog features, including specifically designed hedgehog houses, can be created at suitable locations within the site.

Invertebrate Features

7.8. There is potential to include some invertebrate hotels with the site (Refer to Appendix 2 for further details). The inclusion of the rough grassland and wildflowers will enhance the site for invertebrates.

Wildlife Beneficial Landscaping Scheme

7.9. Any future landscape planting should seek to enhance biodiversity, improve connectivity to the surrounding habitats and provide food and shelter for a wide range of wildlife. All amenity planting and formally landscaped areas should be designed using a variety of plant species beneficial for wildlife. These do not necessarily have to be native but should be chosen for their ability to provide nectar or fruit and should be non-invasive species. There are a number of specialist seed mixes available specific to certain soil types, growing conditions and designed to benefit different groups of species such as bees or butterflies and moths.

7.10. All habitats should be managed in a suitable way to encourage a wide variety of insects and other wildlife to use the site.

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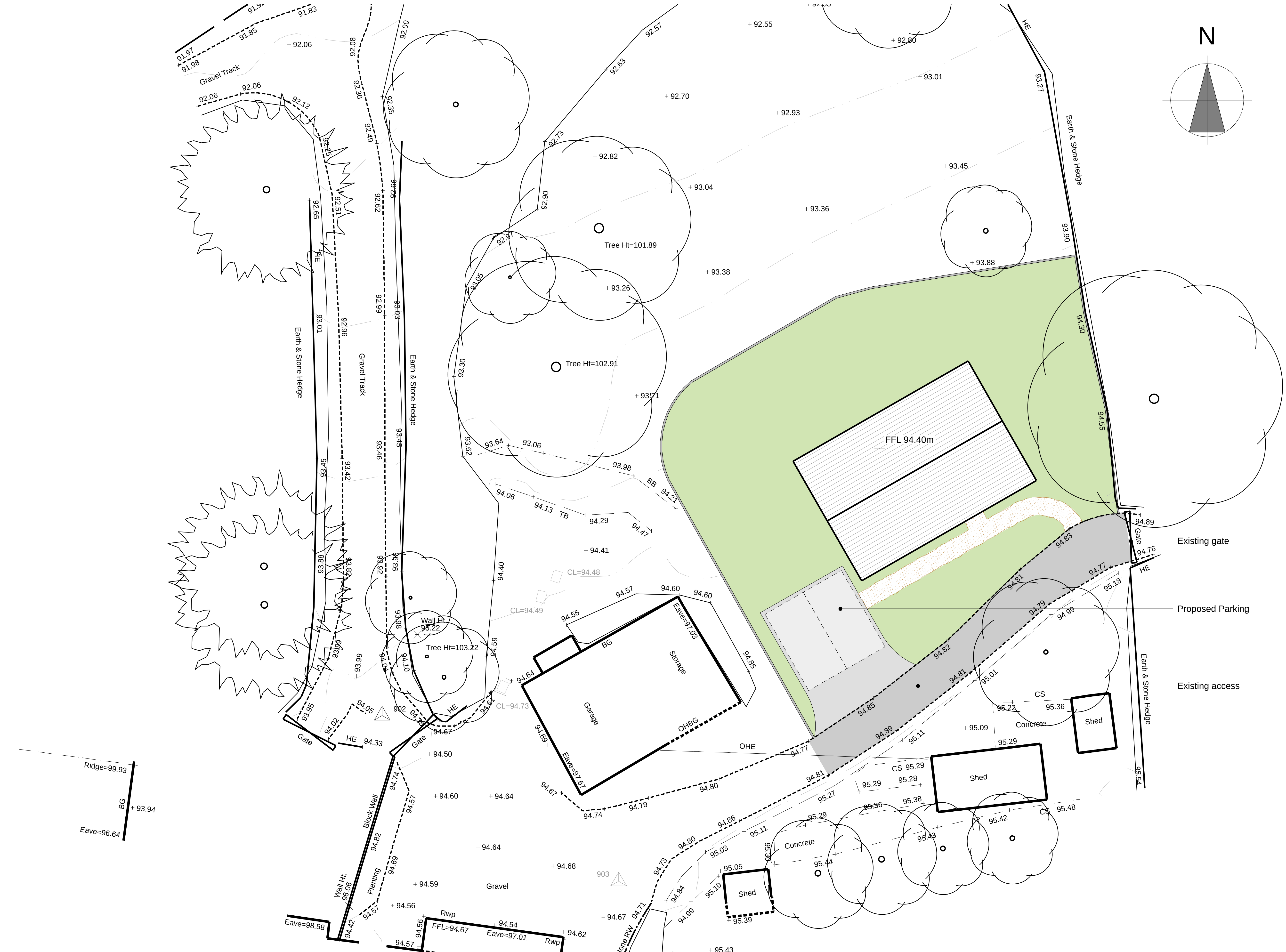
APPENDICES



INDICATIVE SITE PLAN
1:200

0 1m 5m 10m

Notes:

Rev.	Description	Drawn	Date
A	Revised Outline Plan	LH	10/01/2022

la

planning | architecture | landscape

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Project Title:
CONSTRUCTION OF DWELLING

Project Address:
STENAK, GOONGUMPAS
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Client:
MS L FORD

Drawing Title:
INDICATIVE SITE PLAN

Scale: 1:200@A3	Drawn: LH
Date: 01/2022	Checked: NG
Drawing No: 21257-SK-00-04	Rev: A

PRELIMINARY

APPENDIX 2 - PROTECTED SPECIES LEGISLATION

Bats

In England and Wales, all bat species and their roosts are legally protected under the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010). You will be committing a criminal offence if you:

- Deliberately capture, injure or kill a bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat
- Intentionally or recklessly obstruct access to a bat roost

Barbastelle, Bechstein's, greater horseshoe, lesser horseshoe, brown long-eared, soprano pipistrelle, and noctule bats are all priority species under the UK Biodiversity Action Plan (UK BAP) and have also been adopted as species of principal importance in England under Section 41 of the NERC Act 2006.

Badgers

Badgers and their setts are afforded strict protection under the Protection of Badgers Act 1992. This Act consolidates past badger legislation and, in addition to protecting the badger itself, makes it an offence to damage, destroy or obstruct badger setts. Badgers are also protected under Schedule 6 of the Wildlife and Countryside Act 1981 (as amended), and listed under Appendix III of the Bern Convention, as a species that is in need of protection but may be hunted in exceptional instances. Only badger setts that are currently in use are covered by wildlife legislation.

Birds

All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy the nest or its eggs.

Some bird species, such as the barn owl *Tyto alba*, are listed in Schedule 1 of the 1981 Act and receive further protection, making it an offence to intentionally or recklessly disturb these birds whilst building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

The NERC Act (2006) inserts a new schedule into the Wildlife and Countryside Act (1981) to protect the nests of some bird species that regularly re-use their nests, even when the nests are not in use. This protection currently applies to golden eagle, white-tailed eagle and osprey.

Reptiles

All British reptiles are listed under schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are therefore protected from intentional killing or injury. This is largely as a consequence of a national decline in numbers associated with habitat loss.

Two scarcer native British reptiles (smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis*), are afforded 'full' protection. This legislation makes it an offence to intentionally or recklessly kill, injure, disturb, take, possess or sell these species (in all life stages). It is also illegal to damage, destroy or obstruct access to places they use for breeding, resting, shelter and protection.

All species of reptile are priority species in the UKBAP and have been adopted as Species of Principal Importance under Section 41 of the NERC Act (2006) in England (Section 42 in Wales).

Amphibians

Great crested newts (GCN's) *Triturus cristatus* and their habitats are fully protected by the Conservation of Habitats and Species Regulations (2010) and partially protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to kill, injure or capture GCN's, their young or eggs, or destroy / damage their ponds or places of shelter used for breeding or protection. The great crested newt is also a Priority species in the UK Biodiversity Action Plan (UKBAP), and had been adopted as a Species of Principle Importance in England under Section 41 of the NERC Act 2006.

The natterjack toad *Epidalea calamita* is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2010 making it a European Protected Species. The natterjack toad is also a priority species under the UK Biodiversity Action Plan.

The pool frog *Rana lessonae* is protected under the Conservation (Natural Habitats &C.) Regulations 1994 (as amended). As a European protected species the deliberate capturing, disturbing, injuring or killing of this species is prohibited, as is damage or destruction of its breeding sites or resting places. The pool frog is also a priority species under the UK Biodiversity Action Plan due to a 100% decline over 25 years (1980-2005).

Common toads *Bufo bufo* are also designated UKBAP species due to a serious decline of populations across large areas of southern, eastern and central England, thought to be mainly due to changes in habitat management, mortalities on the roads, and climate change.

Dormice

Common dormice *Muscardinus avellanarius* and their habitats are fully protected by both the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations (2010). This legislation makes it an offence to kill, injure, disturb or capture dormice, or destroy or obstruct their resting or breeding places.

The dormouse is also a priority species under the UK Biodiversity Action Plan and has been adopted as a species of Principal Importance in England under Section 41 of the NERC Act 2006 (section 42 in Wales) and so is protected from any adverse effects as a result of development.

Otters

Otters *Lutra lutra* are protected by both the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. This legislation makes it is illegal to; deliberately or recklessly kill, injure or capture an otter, deliberately or recklessly disturb or harass an otter, damage, destroy or obstruct access to a breeding site or resting place of an otter.

The otter is also a UK BAP Priority Species and has been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006 (Section 42 in Wales) and the Conservation (Scotland) Act in Scotland.

Water Voles

Water voles *Arvicola terrestris* are fully protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to kill or injure water voles, and to damage, destroy or obstruct access to places used for protection or shelter, and to disturb water voles whilst they occupy such a place.

The water vole is also a Priority species in the UK Biodiversity Action Plan, and had been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006.

White-clawed Crayfish

The white-clawed crayfish *Austropotamobius pallipes* is protected under the Wildlife and Countryside Act 1981 (as amended), making it a criminal offence to; intentionally or recklessly kill or injure a white-clawed crayfish, or sell or attempt to sell any part of this species. The Habitats Regulations (2010) provide further protection through the declaration of Special Areas of Conservation (SAC). This protection aims to prevent commercial harvesting of white-clawed crayfish and prohibits their capture without a licence.

The white-clawed crayfish is also a Priority species in the UK Biodiversity Action Plan (BAP), and has been adopted as a Species of Principal Importance in England under Section 41 of the NERC Act 2006.

Hedgehogs

Hedgehogs are UK Biodiversity Action Plan (BAP) species, and therefore must be taken into consideration as part of development planning. A recent report (Wembridge, 2011) shows that hedgehog numbers have declined by 25% in the last ten years.

APPENDIX 3 - SURVEY AND REPORTING LIMITATIONS AND EXCEPTIONS

This report and its survey results should be considered in conjunction with the terms and conditions proposed and scope of works agreed between Darwin Ecology Ltd and the client.

This report has been produced in the context of the proposals stated in the Introduction & Background section of this report (Section 2) and should not be used in any other context.

Darwin Ecology Ltd have endeavoured to identify the likely presence / absence of protected species wherever possible on site, where this falls within the agreed scope of works. Current standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility can be accepted where these methodologies fail to identify all species or significant species on site.

Extended Phase 1 and Preliminary Ecological survey techniques provide a preliminary assessment of the likelihood of protected species occurring on the development site, based on the suitability of the habitats and any field signs found during the site visit. A Phase 1 survey should not be taken as providing a full and definitive survey of any protected species group.

Extended Phase 1 and Preliminary Ecological Appraisals represent a snapshot of conditions at the time of survey and are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Surveys should therefore not be considered a comprehensive list of all plant species or as conclusive proof that certain protected species are not present or will not be present in the future.

Where the presence/absence of a certain species is in question our ecologists must apply a precautionary approach until further survey data can be sought to better inform the decision.

Darwin Ecology Ltd will advise on the optimum survey season for a particular habitat or protected species prior to undertaking the survey work. Darwin Ecology Ltd cannot accept responsibility for the accuracy of surveys undertaken outside this period.

The potential impacts, mitigation and enhancement sections of the report provide an overview and is for guidance only. This section should not be solely relied upon, but should be considered in the context of the whole report.

Interpretations of survey results and recommendations outlined in the report represent our professional opinions, expressed in accordance with recognised industry practices and current legislation at the time of reporting. The results of survey work undertaken by Darwin Ecology Ltd are representative at the time of surveying.

Where the client had supplied us with data from previous reports, it has been assumed that this information is valid. No responsibility can be accepted by Darwin Ecology Ltd for inaccuracies within any previous data supplied.

Amendments to this report after its submission may be necessary in light of new, relevant information and / or legislation. This report should be referred to us for re-assessment if any such amendments are necessary or after the expiry of one year from the date of the report.

THE IMPACT OF LIGHTING ON BATS

Bats & Lighting

Bats favour a dark environment for both roos3ng and foraging as they are adapted to low-light condi3ons. Ar3ficial ligh3ng will disturb bats if the ligh3ng covers roost access points, flight paths or foraging habitats.

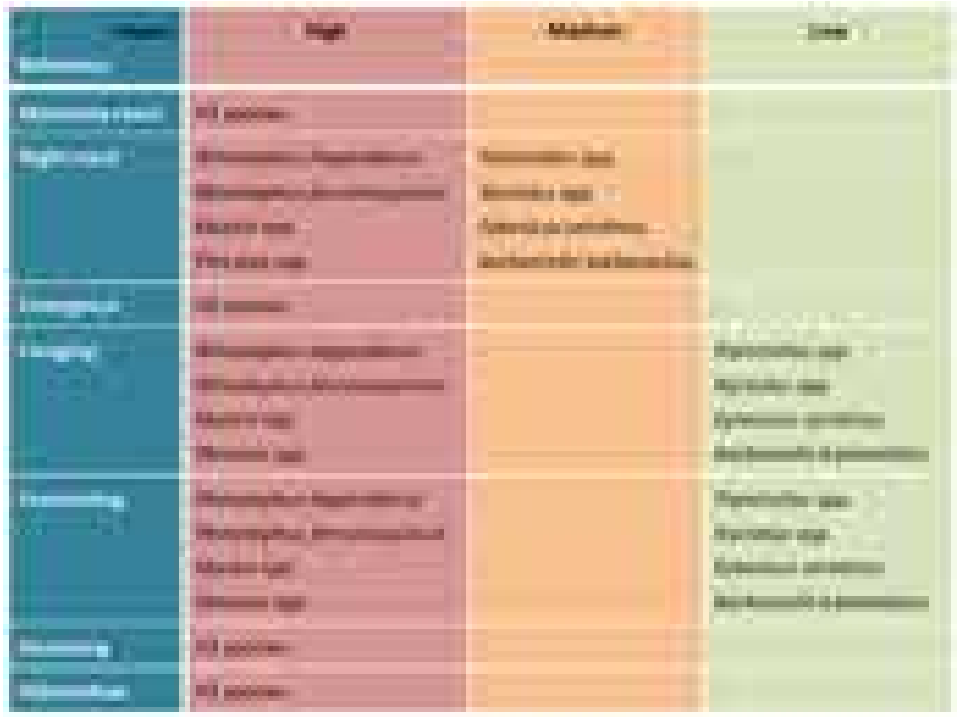
The main peak of nocturnal insect abundance occurs at dusk and a delay in emergence results in a lower foraging rate for bats.

Ar3ficial ligh3ng creates a 'vacuum effect' for nocturnal insects. During the night nocturnal insects use the light of the moon* to navigate. However, ar3ficial ligh3ng and even sky glow above ci3es obscures the natural moonlight as it is closer and radiates light in mul3ple direc3ons.

Some species of bats have been recorded foraging around street lights such as Pipistrelle species and Nyctalus species. However, species that are less tolerant of ar3ficial light are at a disadvantage when foraging as insects are drawn away from these species usual foraging grounds into the zones of ar3ficial light.

Ligh3ng must be considered in context to any development as increased ligh3ng may cause roost abandonment, reduced reproduc3ve success, and reduced foraging. Mi3ga3on to reduce the impacts of ligh3ng for bats is therefore of great importance in bat conserva3on.

Table 1: Summary of predicted impact of lighting for each species/genus



*For more information see Warrant, E., and Dacke, M. (2016) Visual Navigation in Nocturnal insects. *Physiology*, 31, 182-196.

Sources of light that can disturb bats include; light spill via windows, s floodlighting, car headlights, roadside lighting, security lighting, aes lighting of waterways, and aesthetic illumination of buildings. Glare will affect bats over greater distance than the target area directly illuminated.

Avoidance is the most effective method, but if this is not possible the following measures should be considered.

What lighting should I use?

- Low pressure sodium lights or 'warm' LEDs
- Wavelength above 540nm
- Colour temperature below 2700K
- Shielded lights that prevent light spill above a 70 degree angle
- Passive infrared (PIR) motion sensors

What to avoid:

- Lighting roost entrances, flightpaths, and foraging or commuting routes
- Reflective surfaces beneath lighting
- High level lights
- Non-directional lighting

Lighting should be considered at an early stage allowing impacts to be minimised through the design of the site.

Key Points

- Keep lighting intensity to the minimum level required
- Limit the times that lights are on to provide some dark periods (e.g. switching installations off between midnight and 5am)
- Dim lighting according to demand
- As an alternative to lighting pathways use paving materials that reflect moonlight
- Low level lighting allows darkness to be retained within higher vegetation
- Set dark habitat buffers - lighting should always be a minimum of 25m from vegetated margins and 40m from waterbodies
- Incorporate dark corridors within the site
- Compensate for the loss of dark areas by enhancing other dark areas
- Consider building design - install internal lighting away from windows

Bat Conservation Trust guidance note 08/18 'Bats and artificial lighting in the UK & http://www.cost-lonne.eu/recommendations/

Bats & Lighting

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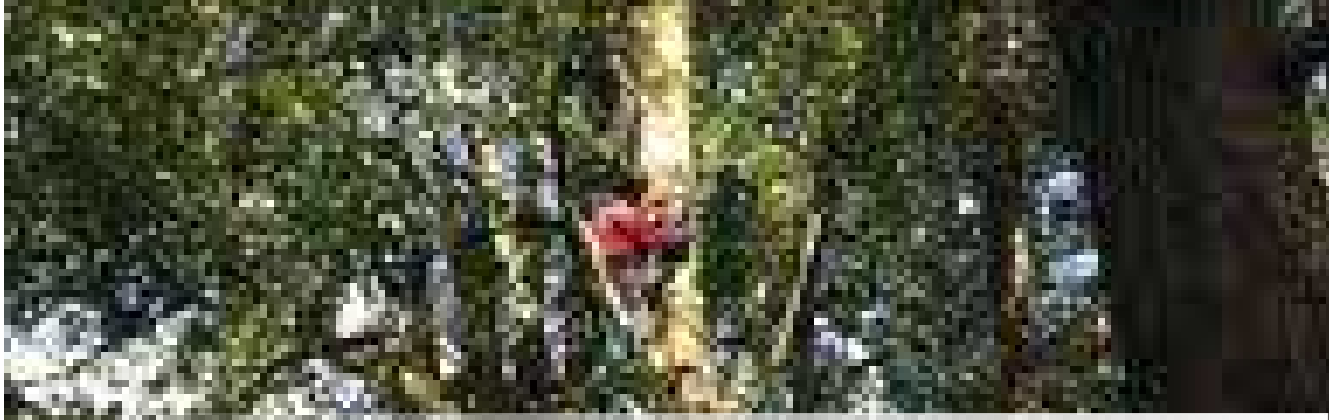
External Bat Boxes



TYPES OF BAT BOXES

Schwegler 2F Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall

Schwegler 1FD Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall
- Small entrance hole discourages birds from using the box

Vincent Pro Bat Box

- Manufactured from timber and recycled plastic
- The front and the top of the box is black, which helps heat absorption
- Suitable for a range of species including pipistrelle species, Myotis species, and brown long-eared bats.
- No maintenance required

Schwegler 2FN

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle species, Myotis species, serotine, brown long-eared, noctule and Leisler's bats
- Dual entrance
- Birds and dormice have also been found using this box
- A newer model is now available, Schwegler 3FN, designed with smaller entrance holes which discourage birds and dormice

External Bat Boxes

Schwegler 1FS Large Colony Box

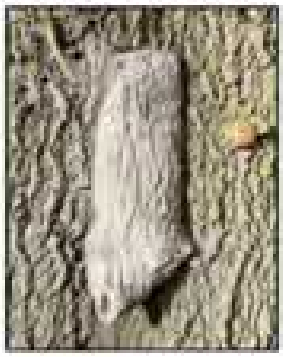
- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of bats including pipistrelle species, Myotis species, Noctule, and brown long-eared bats
- Three grooved inner wooden panels are connected to the front panel, which are ideal for bats to cling to.
- Accommodates large summer colonies

Schwegler 1FF Colony Box

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of crevice dwelling bats including pipistrelle species, barbastelle, noctule, and brown long-eared bats
- Rough wooden surface for bats to cling onto and climb

Greenwoods Ecohabitats Small Hollow Bat Box

- Manufactured from long-lasting ecostyrocrete
- Lifetime - 20-25 years
- Suitable for a range of bats preferring a cavity space, including pipistrelle species, myotis species, noctule, and brown long-eared bats
- Suitable for hibernating bats

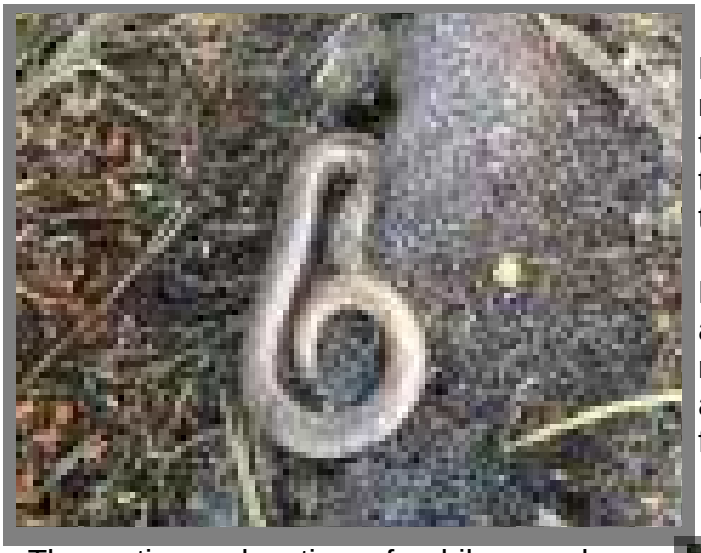


Bark Boxes Large Twin Crevice Bat Box

- Suitable for range of bat species providing roosting opportunities similar to naturally formed tree roosts.
- Thermal mass suitable for spring and autumn roosts.
- Natural and discreet appearance for hanging on trees.
- No maintenance required.
- Made from over 50% recycled materials./

Hibernacula

Creation and design

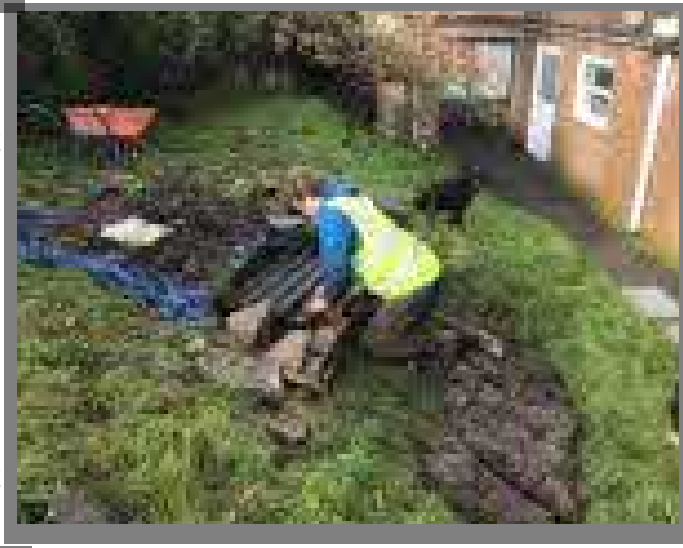


Hibernacula offer sheltering opportunities for reptile and amphibian species, providing them with essential frost-free habitat in which to hibernate during the winter and to provide temporary shelter in the summer.

Hibernacula can be both naturally-occurring and artificial, and can be constructed of a range of materials. Our ecologists can advise on the best locations and materials for the placement of artificial hibernacula.

The optimum locations for hibernacula are oriented east to west on south-facing slopes within freely-draining soils. It is imperative that the hibernacula are exposed to direct sunlight for the majority of the day to ensure maximum thermal capacity.

It is also important that hibernacula are created within a mosaic of habitat types for example open areas of grassland adjacent to sheltered areas of scrub / hedgerow. This ensures excellent basking areas are available adjacent to well connected habitat and areas of shelter.



Hibernacula can range from underground chambers to sheltered areas at ground level, akin to refugia.

By digging a shallow pit and filling it with materials such as rocks and logs, a chamber can be created which contains several gaps for access and shelter. No access pipes are necessary.

When the chamber and access has been constructed, soil can be piled on top of the hibernacula to seal it. Plant wildflower seeds on top to further benefit local biodiversity!

Provisions for Hedgehogs

Hedgehogs

Hedgehogs are listed as a Priority Species Conservation Action under the UK Biodivers Action Plan, and protected from harm in the U under Schedule 6 of the Wildlife and Countryside Act 1981.

Under the NERC Act 2006, the hedgeh categorised as a 'Species of Principa Importance' for biodiversity. Evidence sugges that the number of hedgehogs present within th UK has been in decline since 1995 (Peoples Trust for Endangered Species PTES)

To ensure that hedgehogs are continually able to forage within or commute through gardens areas of suitable habitat wildlife gaps should be installed within any fence lines or walls. Thes should measure 13cm x 13cm, which will allov hedgehogs to move through, but will be small for pets and can be created easily.

Features such as brash piles can be crea easily using arisings from your garden / s which will provide foraging resources a suitable nesting habitat.

Precautions should be undertaken during construction works to protect hedgehogs fro harm including installing barrier fencing, covering trenches or excavations overni installing a ramp in any excavations that cannot be covered and checking all excavati trenches before proceeding with the works th following day.

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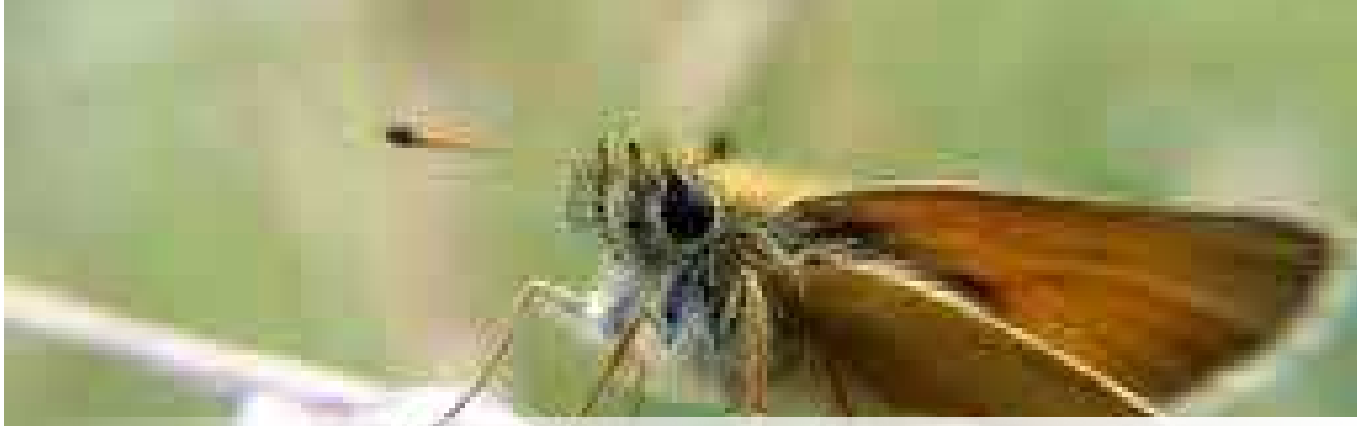

Designing Landscaping for Invertebrates

Invertebrates

Woodland pockets including standing deadwood and log piles can provide benefits for saproxylic invertebrates and woodland floor species, as well as providing an additional resource for pollinators through incorporation of a variety of wild flowers.


Image: C. Nash


Image: C. Nash

Creation of **ephemeral wet areas** can have substantial benefits, as many species associated with brownfield sites are dependent upon sources of standing water, within which predatory species such as fish are not present or able to persist.

Sand bank pocket features in landscaping can provide benefits for ground-nesting bees, wasps and other thermophilic insects by providing nesting, hunting and basking opportunities in proximity to foraging habitat.


Image: C. Nash


Image: C. Nash

Inclusion of r**ubble, metal (via sculptures if desirable) and ornamental planting** can benefit ground beetles that rest under rocks and species that require basking areas. Ornamental planting can also be beneficial for pollinators providing they are not double flowered and produce pollen and nectar.

These features do not need to be large, with mosaics of smaller but frequent features within landscaping likely to provide the most value for invertebrates.

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