



Biodiversity Enhancement Scheme

**Land off Samuels Road, Cwmllynfell,
Neath Port Talbot, SA9 2GT**

January 2024

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Summary

I & G Ecological Consulting Ltd were commissioned to produce a Biodiversity Enhancement Scheme (BES) in connection with a planning application for the construction of a single dwelling with separate garage / workshop.

The BES is to include key impacts and mitigation measures to comply with the general principals set out in *Policy 9 of Future Wales (2040)*.

The site is approximately 0.1ha. The natural habitats on site consist of poor semi-improved grassland, marshy grassland, hedge-bank and ditch.

1. INTRODUCTION

1.1.1 I & G Ecological Consulting Ltd were commissioned to produce a Biodiversity Enhancement Scheme in relation to a planning application for a single dwelling and detached garage with associated infrastructure.

1.1.2 This report is to satisfy requirements for Biodiversity Enhancement and to ensure no detrimental impact on local ecology.

1.1.3 The Preliminary Ecological Assessment Report (I&G Ecological Consulting Ltd Jan 2024) assessed the site as poor semi-improved grassland with areas of marshy grassland.

See Fig. 1 for location and Fig. 3 for habitats.

1.1.4 This report presents a Biodiversity Enhancement Scheme to provide habitat and forage for the following:

- Nesting Birds
- Bats
- Hedgehogs
- Invertebrates
- Reptiles

1.1.5 The site is located in a semi-rural setting off Samuels Road, Cwmllynfell. The site is surrounded by dwellings and rough pasture with small woodlands. The East Pit Coal Workings are approximately 500m to the west, and to the south lies the Afon Llynfell (0.48m) and to the east is an un-named tributary (0.23m).



Figure 1. Location of the site. Central Grid Ref: - SN 74348 12910

2. SCOPE FOR ENHANCEMENT

- 2.1 Site Location Plan shows the location of the proposed development outlined in red, See Fig. 2.

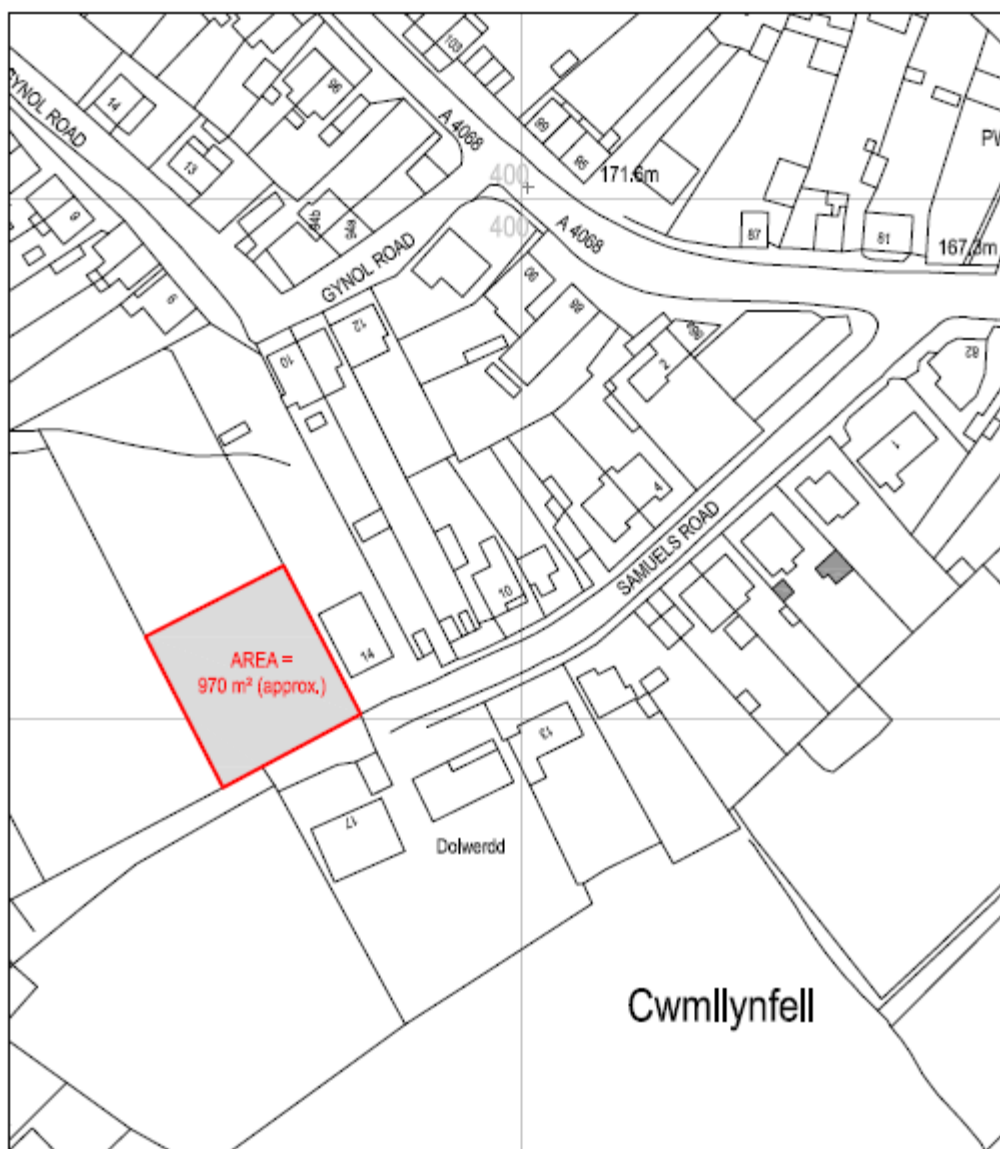


Figure 2. Proposed Development Footprint (red), from location plan supplied by Architects: Cwm Planning & Design

2.2. Habitats within and adjacent to the site can be seen at Fig. 3 below.



Figure 3. Aerial image of site showing habitat at Site: poor semi-improved/marshy grassland, hedges, trees. Habitats surrounding site: rough grazing, marshy grassland, woodlands(C) Apple Maps

3. ENHANCEMENTS FOR SPECIES (see ENHANCEMENT PLAN AT APPENDIX 1)

- 3.1** The current site layout utilises much of the current habitat. However, the new dwelling and associated garden has scope for small areas of additional planting and hibernacula siting.
- 3.1.2** Additional native wildflower and tree/shrub planting will benefit birds, providing food, nesting and shelter. Such planting will also benefit a range of other animal groups such as invertebrates, reptiles and small mammals.
- 3.1.3** No additional site visit has been made in relation to this BES report and all recommendations have been made based upon desk-based resources, including the Preliminary Ecological Assessment Report (I&G Ecological Consulting Ltd Jan 2024), Architectural Plans and online maps.

3.2 Nesting Birds

- 3.2.1 Provision for bird nesting can be achieved by incorporating integral boxes for species such as Swifts, Swallows, and Martins which could be using the open agricultural land. See Appendix 2 for suggested designs and products. Please see Appendix 5 for timing of works to avoid the bird nesting season.

3.2.2 Proposed Enhancement Provision:

Recommendation 1:

2 x [Swift Nest Cups](#) to be sited on the north-east gable end. The Nest Cups should be located high upon the gable wall of the building, ideally at 5 metres. Where possible, install in locations that are unlikely to receive large amounts of direct sunlight during the hottest times of the day, ideal places include below the overhang of the verge and barge board. See Appendix 2 for product examples and Appendix 1 for siting suggestion.

- 3.2.3 The above example Swift Nest Cup from RSPB has the following product details: Handcrafted in the UK, this swift nest box is made from FSC® certified timber. Overall measurements are 44cm wide, 21.7cm tall (at the back), 12cm tall (at the front) and 20.2cm deep at the deepest point. Weight is approximately 3.5kg. (Information from RSPB.org.uk)
- 3.2.4 Positioning of bird boxes will be based on advice from on-site ecologist and supplier support (E.g., WildCare.co.uk, RSPB, NHBS.com or another specialist provider).
- 3.2.5 Annual maintenance (e.g., cleaning out, checking attachment is secure) where necessary, depending on design, will be undertaken by site occupant, outside of the bird breeding season.
- 3.2.6 Management of any existing trees will be minimal and only as necessary to maintain the health of trees and prevent unacceptable encroachment onto property/public areas, where it may present a safety risk. All such management will be undertaken outside of the bird breeding season (1st March to 31st August).

3.3 Bats

- 3.3.1 Bats may utilise the site for foraging and roosting. Additional capacity can be provided by incorporating suitable artificial roosts/Bat Boxes within/on new buildings and on trees within land ownership, at a minimum height of two meters, and without obstruction (clear flight line to front of box). The lighting scheme shall demonstrate that dark corridors for bat foraging/commuting will be maintained and that the access points to bat boxes remain unilluminated. Any site lighting will be kept to a minimum and be low level, down facing lights. If any external artificial light at night is to be used, it must conform to the following guidance: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/> Please see Appendix 4 for timing of works to avoid the bat hibernation season.

3.3.2 Proposed Enhancement Provision:

Recommendation 1:

1 x [integral bat box](#) to the new dwelling if specifications are suitable.

Alternatively

1 x [Ecostyrocrite Bat Boxes](#) (two-crevice type) to be affixed to the side (south west) elevation of new property. To be affixed in a sheltered, elevated (2–7m and ideally 4m) position away from artificial light and potential predation, and ideally not above any windows or doors. (See Appendix 2 for examples, and Appendix 1 for siting).

- 3.3.3 If it is evident that the boxes are in use by bats, they must not be disturbed and only moved/cleaned under the supervision of or by a licensed bat ecologist.

3.4 Hedgehogs

- 3.4.1 Any boundary structures will be of a style that will allow Hedgehogs free access throughout the site, ensuring they can benefit from habitat and forage resources found both on and off site, e.g., surrounding gardens, open habitats, hedge-banks and ponds.

3.4.2 Proposed Enhancement Provision:

Recommendation 1:

All property/field boundaries, will allow free movement of animals, particularly Hedgehogs. Any such boundaries should have sufficient ground-level gaps to allow commuting to the surrounding habitat. It is noted from the Proposed Site Plans that close-board fencing is to be used at boundaries. Hedging is recommended in the PEA (I&G 2024), however, should any fencing be erected, then gaps should be provided within these boundary treatments, periodically. Gaps to be approximately 13cm x 13cm, and maintained to ensure no protrusions exist.

Recommendation 2:

If available space can be identified within the curtilage of land ownership, such as the rear of the garden, then it is recommended that a purpose-built [hedgehog refuge](#) can be installed in a secluded/undisturbed location within the site. Simple designs using bricks can be constructed or purpose-made wooden boxes are readily available. See Appendix 3 for construction design and ready-made examples, and Appendix 1 for suggested location.

3.5 Invertebrates (pollinator provision)

3.5.1 Grassland

The PEA Report (I&G Jan 2024) states *“The permanent loss of grassland within the site boundary cannot be fully offset by on-site mitigation, compensation and enhancement measures. It is recommended that off-site options should be explored.”*

However, in addition to any off-site options, resources on-site can be enhanced by additional planting of native flowers, trees and shrubs to benefit invertebrates. See Appendix 6 for recommended species and management.

3.5.2 Proposed Enhancement Provision:

Recommendation 1: Planting of native wildflowers

- Native, **organic** bulbs and native plug plants to be planted within the grassland associated with the dwelling, if practicable. If no suitable grassland area, then plant in tubs and position in a sheltered, south facing location within the grounds of the property.
- Management of wildflower planting will depend on the species/mix used. Advice for species choice, planting location and management can be sought from local suppliers such as [Grown in Wales/Shipton Bulbs](#). And <https://celticwildflowers.co.uk/>
- See Appendix 6 for recommended species and management.

Recommendation 2: Planting of shrubs

- Planting of flowering shrubs to any suitable borders will provide resource for invertebrates. If shrubs also produce berries, these will provide resource for some species of birds.
- Shrubs to be managed according to advice from supplier or other reputable resource, to ensure maximum flowering or fruit bearing through-out the life-span of the plant.
- The species of shrub does not have to be native, but it must not be classed as an Invasive Non-Native (for example certain forms of Cotoneaster).

Recommendation 3: 1 x Insect Refuge

Siting - wall or post mounted, in a sheltered position away from human activity. See Appendix 1 for suggested location, and Appendix 2 for product example.

Recommendation 4: Planting of Trees

As per PEA Report, a hedge-bank and ditch should be created along the site's northern and western boundaries. The banks planted to form a hedgerow as above, or managed as a more open habitat with occasional small native trees such as Birch and Rowan.

The bank should be retained except for a short length for access purposes. The bank should be either planted with a range of native species to form a dense hedgerow, or managed through periodic cut and removal of vegetation to encourage the development of a species rich habitat. The planting should include flower & berry bearing species to benefit invertebrates/pollinators, birds and small mammals. Species should include Alder Buckthorn, Wayfaring tree, Guelder Rose in addition to Hazel and Thorn species. See Appendix 6 for species and suppliers.

3.6 Reptiles and Amphibians

The PEA Report (I&G Jan 2024) states *"The creation of a suitable pond/wetland habitat to provide a SUDS system for the site in conjunction with boundary ditches and banks will provide an enhanced habitat for amphibians and reptiles."*

Recommendation 1

- Creation of 1 number reptile and amphibian refugia/hibernacula (log, rock and turf pile). See Appendix 4 for design and Appendix 1 for location. Materials such as stone, brash and logs can be used, so long as this material is 'clean', i.e. devoid of invasive non-native species.
- A minimum of 2m vegetated (unmanaged grassland) buffer zone is recommended, and within this the amphibian and reptile refugia/hibernacula can be placed. (see Appendix 1).

Recommendation 2

- The creation of a suitable pond/wetland habitat to provide a SUDS system for the site which will be beneficial to amphibians.

APPENDIX 1

Recommended Enhancements Plans

Symbols representing the Artificial Refugia, trees, and shrubs show approximate locations. Symbol representing Wildflower planting indicates general area to be planted rather than specific individual 'patches' of planting. For key, see below. Please note this is a generic Key and not all symbols may be present on the Enhancement Plan.

Provision for Nesting Birds: Swallow Nest Cups to NE elevation

Provision for Bats: If integral provision not practicable; 2 x crevice style boxes fitted externally to SW Elevation of dwelling. The final position of Bat and Bird Boxes will be agreed with the advice of I&G Ecological Consulting Ltd.

Provision for Invertebrates: Planting of native, organic bulbs, native organic plug plants, and shrubs (non-invasive), 1 x Insect Hotel

Hedgehogs: hibernacula sited in undisturbed location. Suitable gaps to all boundary features, excepting those facing onto road

	Swift Nest Cup
	Integrated / externally mounted bat box
	Hedgehog Shelter Boundary Access for Hedgehogs
	Insect Refuge
	Small-hole fronted nest box
	Open-fronted nest box
	Reptile/amphibian Hibernacula
	Native hedgerow trees/shrubs
	Native organic bulbs, plug plants, and under-storey planting

KEY to PLAN



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Hedgehog Hibernacula sited in an undisturbed, vegetated area with access to surrounding and neighbouring habitats. **Gaps 13cm x 13cm** with no sharp protrusions, maintained to each boundary, except the roadside boundary.

1 x Amphibian hibernacula sited within the SUDS area (tbc)

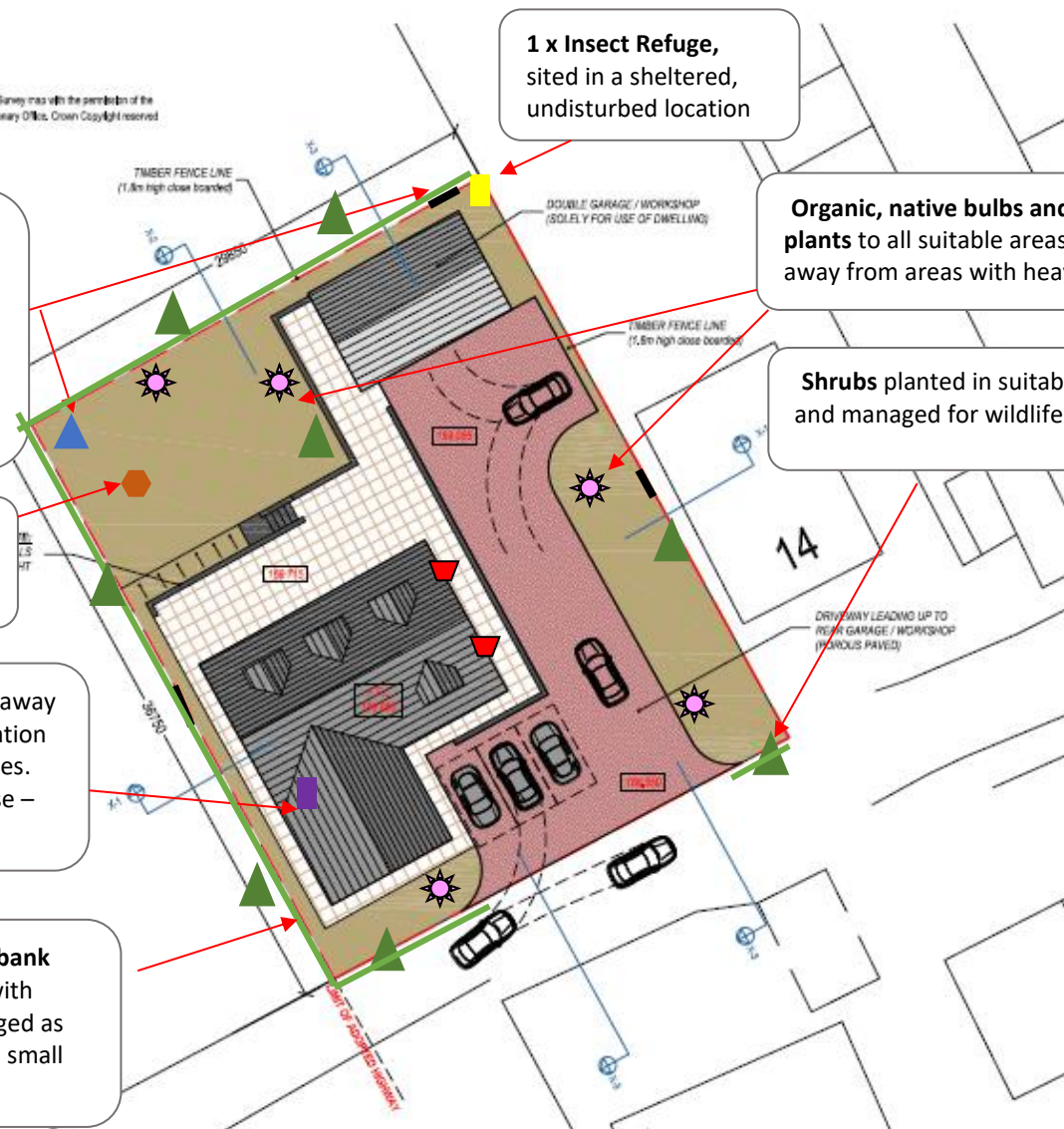
1 x Self-cleaning Bat Box sited away from artificial light, on SW elevation with clear flight lines to entrances. **Preferably integrated**, otherwise – externally mounted.

N & W boundaries –hedge-bank and ditch created, planted with native tree species, or managed as open habitat with occasional small tree species

1 x Insect Refuge, sited in a sheltered, undisturbed location

Organic, native bulbs and plug plants to all suitable areas: sunlight, away from areas with heavy foot fall .

Shrubs planted in suitable locations and managed for wildlife resource.



Client	Mr & Mrs. Knight Samuels Road Cwmtyrnant SA8 2GT		
Project Name	PROPOSED NEW DWELLING (with separate Garage / Workshop)		
General Notes	This is a preliminary plan and should not be used for construction purposes. It is intended for use only for planning purposes.		
Drawn By	PLANNING		
Check By	PROPOSED SITE PLAN		
Drawn By	CPW/004	Checked By	C
Date	20/01/2023	Revised	20/01/2023
Scale	1:100	Page No.	01
 Cwm Planning & Design Ltd. (Civil, Structural & Architectural)			

APPENDIX 2

Artificial Bird Nesting products

Below: Example of an externally mounted [Swift Nest Box](#), from RSPB



Handcrafted in the UK, this swift nest box is made from FSC® certified timber.

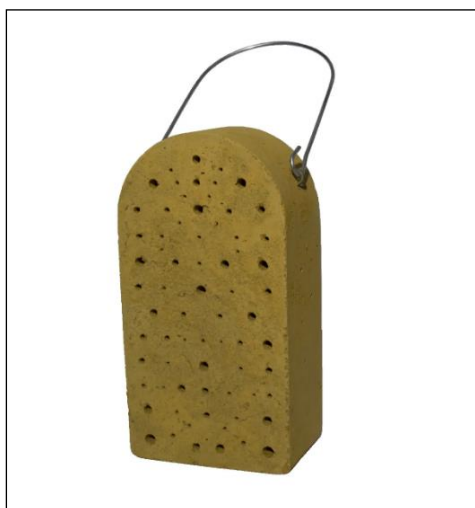
Overall measurements are 44cm wide, 21.7cm tall (at the back), 12cm tall (at the front) and 20.2cm deep at the deepest point.

Weight is approximately 3.5kg.

Swift nest cups – other examples can be found at <https://www.swift-conservation.org/Shopping!.htm>

Further siting advice can be found at [Where To Put A Bird Box | Nestboxes - The RSPB](#) or BTO.org.

Artificial Insect Refugia



[Schwegler Insect Nesting Aid](#) – can be affixed to established tree or a post.

For further information about invertebrates and how you can help them, see <https://www.buglife.org.uk/>

Free-standing Insect Hotels are also available

Artificial Bat Roost



Examples of [integral boxes](#)

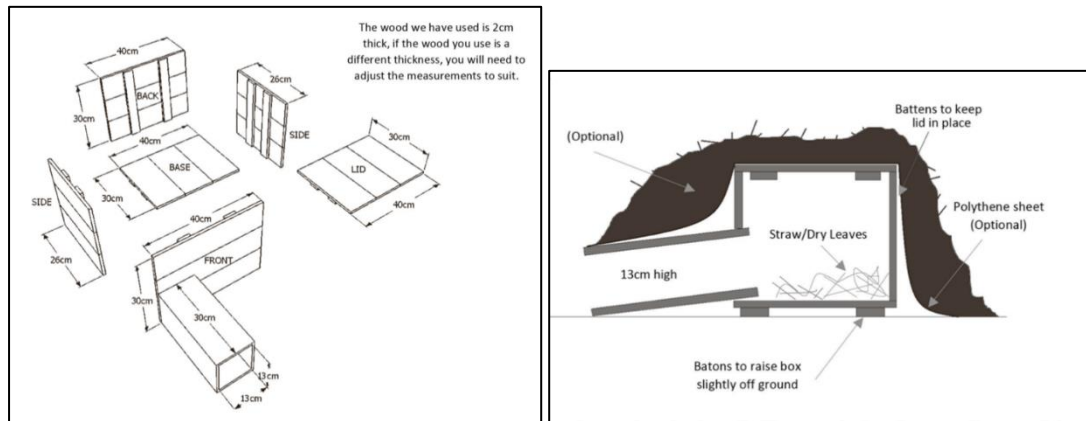


Left: Externally mounted design example:
single crevice ecostyrocrete box

APPENDIX 3

Hedgehog Hibernaculum/Shelter design

<https://www.britishhedgehogs.org.uk/hedgehog-homes/>

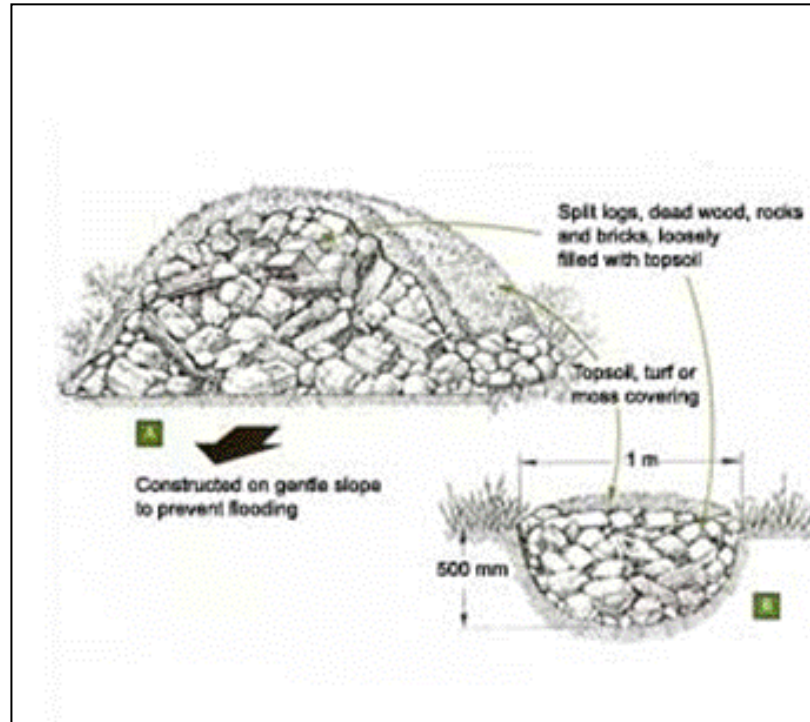


Brick built Hedgehog home - <https://wildlifegadgetman.com/project-wildpatch/how-to-guides/make-a-hedgehog-home-using-bricks/>



APPENDIX 4

Reptiles Hibernacula Design



An example of a suitable hibernaculum for the use of hibernating reptiles/amphibians to be employed within the grassland buffer zone. (illustration from Great Crested Newt Conservation Handbook, available from Froglife www.froglife.org)

APPENDIX 5

TIMING OF ENHANCEMENT ACTIONS

Table 1. Timing of ecological works commonly undertaken, to ensure minimal impact to biodiversity

Action	J	F	M	A	M	J	J	A	S	O	N	D
Hedgerow/scrub management (avoiding birds/dormice)												
Habitat manipulation (reptiles)												
Grassland clearance (reptiles, Dormice)												
Translocation of trees												
Planting of new hedgerow shrubs and trees												
Erection of bat and bird boxes, creation of reptile and hedgehog refugia												
New wildflower seeding/planting												

APPENDIX 6

Planting List and Management Guide

Native Trees, which have limited final height, will include:

Native Trees and Shrub	Latin Name	Plant size (cm)
Hawthorn	<i>Crataegus monogyna</i>	60-90
Holly	<i>Ilex aquifolium</i>	>50 1L pot
Field maple	<i>Acer campestre</i>	60-90
Hazel	<i>Corylus avellana</i>	60-90
Guelder rose	<i>Viburnum oculus</i>	60-90
Blackthorn	<i>Prunus spinosa</i>	60-90
Alder Buckthorn	<i>Frangula Alnus</i>	60-90
Wayfaring Tree	<i>Viburnum lantana</i>	60-90
Climbers		
Wild honeysuckle	<i>Lonicera periclymenum</i>	
Dog rose	<i>Rosa canina</i>	

All hedging will be:

- planted between 1 November and 31 March.
- at least 2-year-old, bare-root transplants of local provenance. Coeden Fach Tree Nursery in Bishopston, are suggested suppliers.
- For larger gaps in boundaries, planted in a double staggered row 40cm apart with a minimum of 5 plants per metre and planted in groups of at least 3 of the same species apart from climbers which should be planted singly.
- planted at least 1 metre within boundary to allow for growth.
- protected with non-plastic, biodegradable spiral rabbit guards and supported with canes.
- protected from competitive weed growth with non-plastic mulch-matting, at least 0.5 metres coverage around each plant. A 1.5m wide strip of matting is proposed and plants slit-planted through the matting. The matting will be secured with mulch mat pins at every 0.3m.
- In the long term, it is envisaged that all the boundary hedges will be managed to a minimum of 2.5m in height and at least 2m wide.

Trees should be sourced responsibly so as not to introduce pests or diseases. See <https://www.woodlandtrust.org.uk/plant-trees/uk-sourced-and-grown/>.

Species should be advised by supplier/landscape architect, depending on soil type, topography and other growing factors such as shade levels etc. Recommended supplier – Woodland Trust. Planting location and spacing will depend on the species selected, and the

maturity of those plants. Whips will require tree guards until they are mature enough to withstand attack from rabbits, deer etc. Larger trees may require supporting stakes and protective wire guards initially. Trees should be planted in areas where there is little foot-fall, to avoid compaction of root systems, and far enough away from taller established trees to ensure adequate and even growth. Trees should be maintained according to supplier guidance and will ensure berries and hips are left to mature, to provide food for birds. All maintenance will be timed to avoid disturbance to wildlife (See Appendix 4 for timings). Shrubs should be shaped and maintained, as appropriate for species.

Organic Bulbs and Native Plug Plants

Bulbs must be organic and Native Plug Plants of local provenance. The specific species as advised by supplier/landscape architect, depending on soil type, topography and other growing factors such as shade levels etc. A range of species should be planted to provide nectar throughout the year. Recommended suppliers – [Grown in Wales/Shipton Bulbs](#). And <https://celticwildflowers.co.uk/> Specific planting and maintenance advice can be sought from supplier.

Species to include native bluebell, snowdrops, crocus (spring and autumn), Tenby Daffodil, native primrose. If space allows, any additional suitable (native/non-native, not Invasive) perennials which provide nectar at varying times of the year.

Further Information

Wildflowers/Bulbs

See <https://www.rhs.org.uk/plants/types/bulbs/growing-guide>

Native Trees and Shrubs

<https://www.rhs.org.uk/plants/types/trees/native-tree-shrubs>

<https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/british-trees/>