

Net Biodiversity Benefit Plan

March 2023

Cae Ffynnon,
Llan-y-Pwll
Holt
Wrexham
LL13 9SD

National Grid Ref: SJ37005186



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Net Biodiversity Benefit Plan

Document Title	Net Biodiversity Benefit Plan
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Supporting Doc	Preliminary Ecological Appraisal (Tyrer Ecological Consultants Ltd, 2023).

Document Context

As part of a planning application at Cae Ffynnon in Llan-y-Pwll, Wrexham (termed as 'the Site' and/or 'application site' in this report), Tyrer Ecological Consultants Ltd were commissioned to design a Net Biodiversity Benefit Plan (NBBP), to accompany a Preliminary Ecological Appraisal (PEA) report following a site visit in March 2023.

Both this NBBP and the PEA were commissioned by Blueprint Architectural Services; proposals are for the erection of a new stables block (see **Figure 1**).

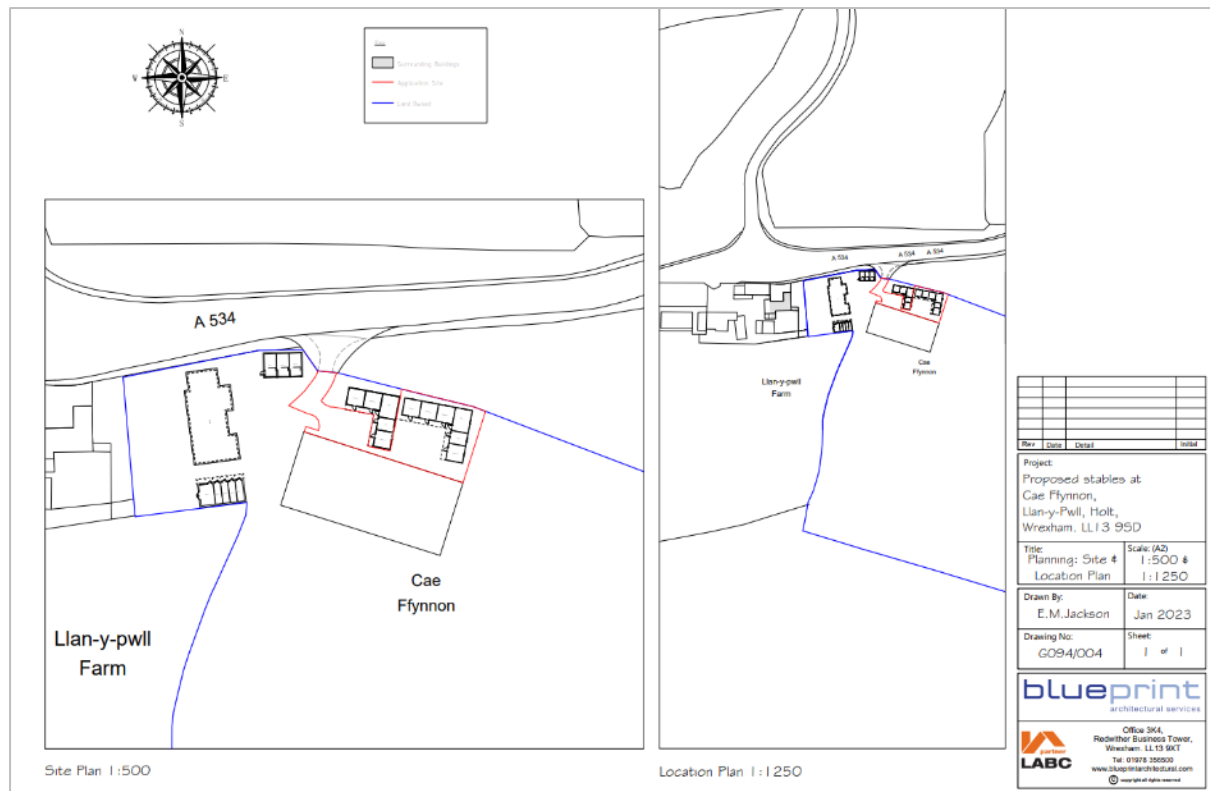


Figure 1 – Site & Location Plan (Drawing No: G094/004)

Wales - Net Biodiversity Benefit (NBB)

The net-benefits for biodiversity approach by Welsh Government has the same intent as England who have adopted a metric-based approach – ultimately to deliver an overall improvement in biodiversity - but Wales does not utilise a metric. Instead, it puts the emphasis on proactive consideration of biodiversity and wider ecosystem benefits within a placemaking context early in the design process. The aim is that the planning system will encourage the use of high calibre ecological expertise and early discussions with planning teams to design developments on a case-by-case basis that positively impact ecosystem resilience. There is no mandatory length of time that management is required for in Wales.

Broadly speaking the aim is to generate a better outcome for the site than if it was left undeveloped. Failing to provide such a benefit is a valid reason for planning permission refusal.

Every planning application in Wales regardless of size must not only mitigate any negative impacts of the development, but also have a positive benefit for biodiversity which will be in place for the lifetime of the development.

Proposed Plan

The proposals are minor, low scale and low magnitude and will only affect hardstanding (~0.034 hectares), with access already in place from Sandy Lane and the areas to be used by working contractors during the construction phase, already developed land / hardstanding. There will therefore be no loss of any habitats of value, though there is a grassy bund along the north boundary (25 metres long) which will be retained.

Adjacent habitats include a menage and there is a similar grassy bund along its southern boundary (38 metres long) which the landowner is happy to commit to the Biodiversity Benefit Plan.

The idea proposed is to plant a native mixed species hedge that include Cypress trees atop the grassy bund south of the menage, creating a new linear habitat and to manage it favourably into the long term. In addition, to mitigate loss of low value shelter opportunity areas currently provided by bulky construction aggregates left lying around the hardstanding/yard, to be cleared as part of the site preparation works, a purpose-built amphibian hibernaculum will be created in the wider curtilage of the 10 acre site to the east of the application site.

See **Figure 2** for visual aid. Instructions are provided below.



Figure 2 – Location of new mixed sp. hedgerow planting & new hibernacula creation

General enhancement measures (Optional) have also been provided in **Appendix I**.

Mixed species hedge creation

Species to plant

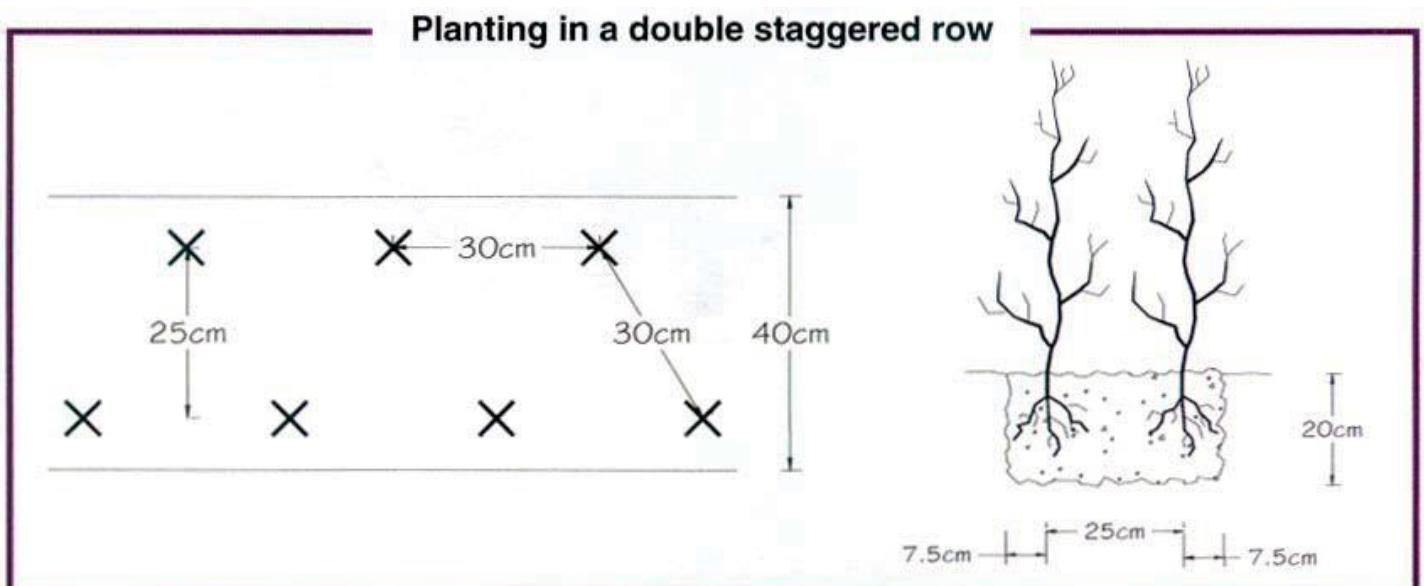
- 20% Holly (*Ilex aquifolium*),
- 30% Hawthorn (*Crataegus monogyna*),
- 30% Blackthorn (*Prunus spinosa*),
- 20% Cypress (*Cupressus*).

Preparation

- The best time for planting is late autumn, after mid-November, although anytime between October and March is acceptable, provided the ground is not frozen or flooded.
- Create a 1m wide, weed free strip either by ploughing, digging or in limited cases, treating with a systemic herbicide.
- Ensure the bare roots of the plants do not dry out before planting.

Planting

- Plants should be sourced locally and supplied in accordance with the Horticultural Trade Association's National Plant specification and be sourced from a nursery that is a Member of the Horticultural Trades Association Nursery Certification Scheme.
- Plant in trenches large enough to take full spread of roots (20cm depth x 40cm width). Back fill with a previously prepared mixture of topsoil excavated from the pit, together with suitable compost and additional topsoil as required.
- Plant in a double staggered row approximately 30cm apart (see Image below).
- Set out plants evenly using the plan below as a guide, 6 plants per m.
- The base of the hedge should be mulched with a 50-75mm layer of composted bark to stop weed growth and retain moisture in the soil.
- Where necessary, protect plants from damage and grazing by using protective tubes or spiral guards.



Maintenance

- Water the hedge for the first summer or any dry period in the 1st 12 months.
- Maintain weed control for at least 2 seasons.

- Replace any stock that dies within the first year.
- To encourage wildlife, trim the hedgerow no more than every 2nd year. This allows the shrubs and trees to produce more flowers, nuts and berries.
- Never trim the hedgerow between the beginning of March and the end of August when it would be harmful to invertebrates and nesting birds. The ideal time to trim the hedgerow is between January and February.

Creation of a new purpose built hibernacula

Hibernacula are underground chambers that amphibians and reptiles use throughout the winter to protect themselves from the cold. Creating a hibernaculum will provide a safe space for amphibians and reptiles to hibernate over winter, as well as a spot for solitary bees to soak up the sun and for birds to relax. These habitats can be integrated into a wide variety newly created or enhanced habitats and attract herps to new areas.

You will need:

- A spade
- Logs and branches
- Rocks and bricks
- 2-3 drainpipe cut-offs or cement pipes (if using plastic drainpipes, roughen the insides with sandpaper, so that they are not too slippery for animals to climb)
- Turf or meadow flower seeds (optional)

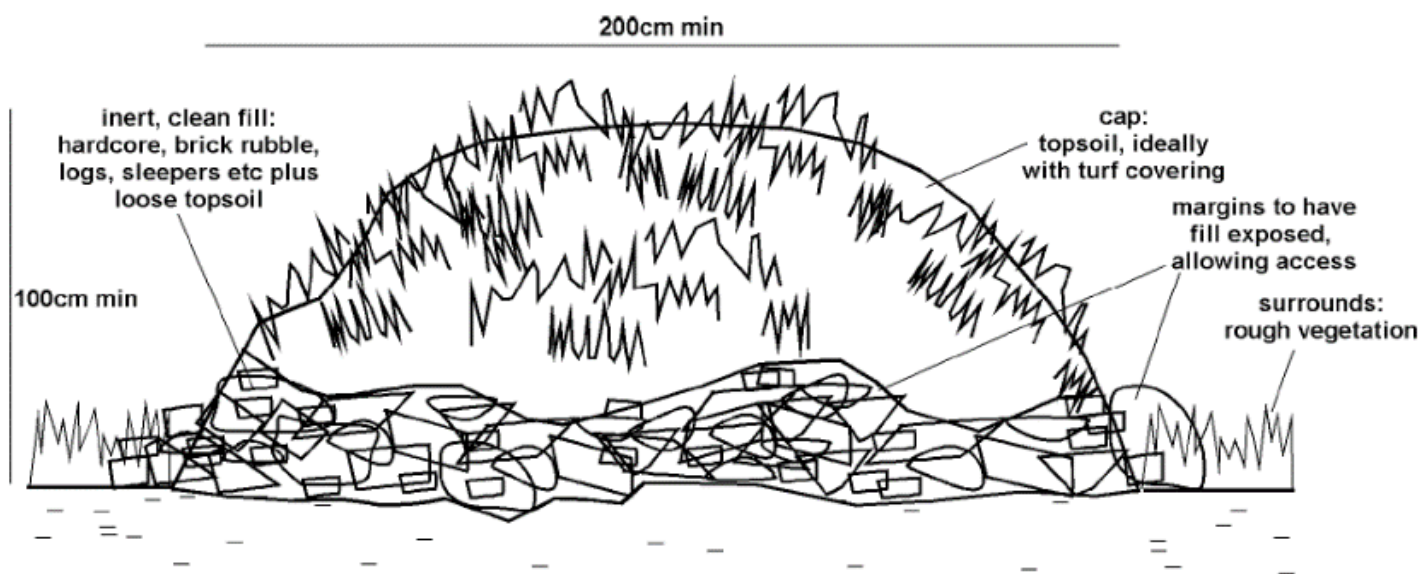
How to make a hibernaculum yourself:

- In a sunny spot, dig a hole about 50cm deep and 1.5 metres across.
- Fill with logs, branches, bricks and rocks, leaving plenty of gaps in between.
- Insert entrance tubes (drainpipes) at ground level into the hole.
- Cover the pile with soil (to about 50cm high).
- Plant meadow seeds or long grasses over the mound to create a feast for summer pollinators.

To construct a hibernaculum to industry standard:

- in desired areas, remove the turf from the footprint of the hibernaculum and set aside.
- On well-drained soil excavate to a depth of approximately 500 mm and set aside spoil (this is unnecessary on poorly drained soils).
- Fill the footprint or pit with core material. Materials likely to retain moisture are preferable, such as cut timber, brash and grubbed up tree roots. Other material such as inert hardcore, bricks, rocks, and building rubble may also be used. Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to reduce the risk of collapse.
- Pack the larger spaces within the core materials with wood chippings, loose topsoil or spoil.
- Cover the hibernaculum with the turves removed from the footprint.
- Take care not to create structures that might attract rodents, such as piles of rubble with many entrance holes. There has been no rigorous investigation of the optimum size of hibernacula, but larger hibernacula are probably more useful than small constructions because they contain a variety of different microhabitats and are more likely to maintain stable conditions.
- A suggested minimum size is 4.0 m long by 2.0 m wide by 1.0 m deep. 2.0 x 2.0 x 1.0 metres (length x width x height) as a minimum.

Illustrative aid for hibernaculum:



Above ground



Below Ground

Conclusions

Tyrer Ecological Consultants Ltd can confirm that the contents of this document have been formulated following a detailed study of the Site and consideration of multiple options before finalising the Net Biodiversity Benefit Plan based on the scale of impacts, applying proportionality, consideration of ecological function, practicality and difficulty of delivery and general appropriateness given the nature of the proposals.

The information contained in this document has been presented using best practice industry knowledge and is benchmarked by the long-standing experience of the Ecologists affiliated with the company.

Completed by Mr. M. Pritchard ACIEEM (March 2023)

M. Pritchard

Senior Ecologist at Tyrer Ecological Consultants Ltd

Appendix I – Optional Enhancement

Enhancement for Bats



- Beaumaris woodstone bat box

This bat box is made entirely from Woodstone, a robust material comprising concrete and wood fibres. The Beaumaris box has a single narrow cavity which makes it suitable for crevice roosting bats such as the Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Brandt's bat and Whiskered bat. The interior of the box has a rough surface for bats to cling to and the front of the box features a subtle but attractive imprint of a bat in flight.

Suitable for attaching to external walls and available in two sizes: the Midi and the Maxi.

For more information see www.nhbs.com/beaumaris-woodstone-bat-box.



- Cardinal bat box

The Cardinal Bat Box incorporates three separate chambers with laddered entrance holes to each direction.

Nesting Birds

House sparrow

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

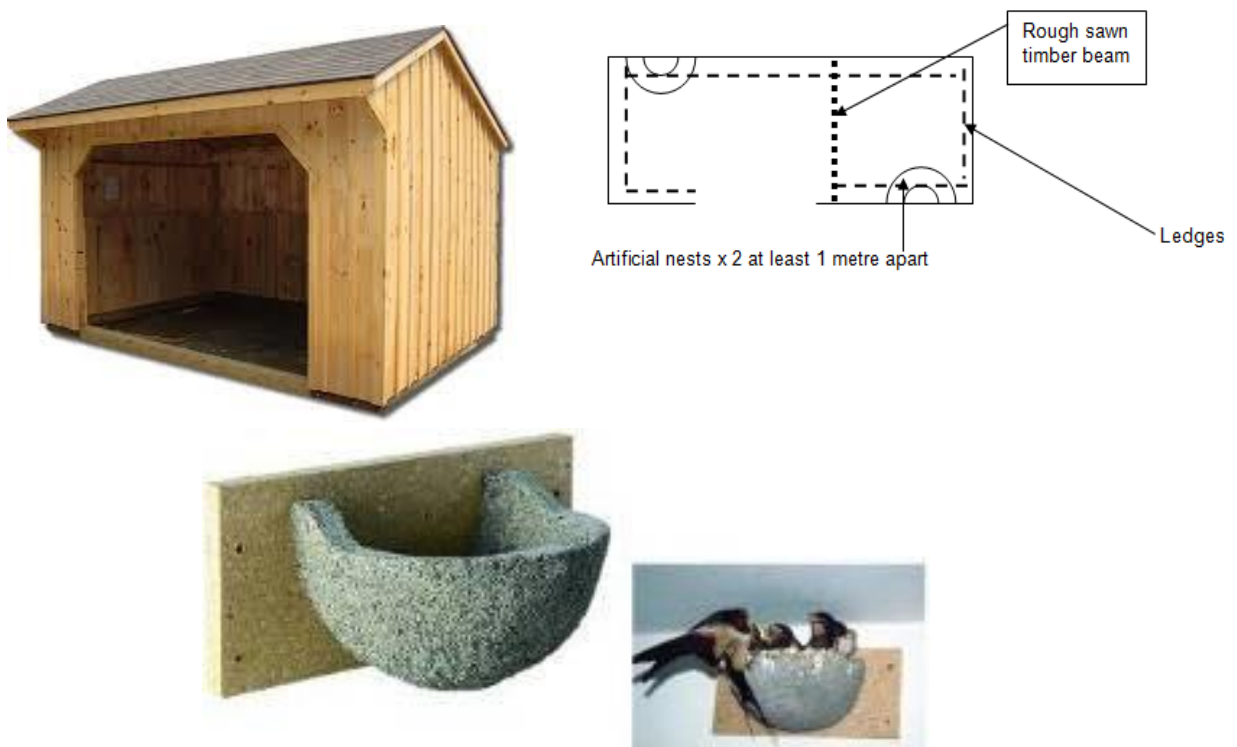
The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of buildings.

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



Swallows

Creation of an open type shed (pitched or flat roof) as shown below would replicate conditions of nest sites at the site and offer swallows a means of nesting following summer migration.



- Artificial swallow nest cups can be purchased online and placed inside.

Specification

- Sheds can be cited in most areas of the site that allow swallows to fly inside/outside freely,
- Recommended minimum of 6.0' x 8.0' x 3.0' metres (length x width x height),
- Two Swallow cups to be spaced compensate for two cups lost, and so on.

Enhancement for Invertebrates

- Custom Invertebrate hotels



e.g.

E.g. - www.amazon.co.uk/Large-Wooden-Insect-Hotel-House/

Alternatively, bug hotels can be created easily using raw materials on site.



Custom insect hotel using existing materials on site

- National Trust Bee Log

<https://shop.nationaltrust.org.uk/national-trust-bee-log-wicken-fen-collection>



- Bee Bricks

Each Bee Brick contains cavities in which solitary bees can lay their eggs before sealing the entrance with mud and chewed-up vegetation. The offspring will emerge the following spring and the cycle will begin again. Each cavity goes part way into the brick, which is solid at the back. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used. Available in a choice of four colours: white grey, dark grey, yellow and red.

