

Ecological Enhancement Strategy

Project	Byanda, Hassocks
Document Reference	200120-ED-08
Client	Frontier Estates
Date	09/12/2022
Author	Charlie Torr, Assistant Ecologist
Reviewer	Brooke Waites ACIEEM, Senior Ecologist Simon Thomas MCIEEM, Director of Ecology

Summary:

To maximise the biodiversity value of the proposed development, the following features are to be included within the design. This document includes further details.

Wildlife boxes

Log piles

Planting of native trees/shrubs

Wildflower meadow

Pond creation

Location of the proposed ecological enhancements are shown on the landscape plans.

Purpose of this document

This Ecological Enhancement Strategy outlines the ways in which the proposed development at Byanda, Hassocks will seek to enhance the biodiversity value of the site and the surrounding area.

Mid Sussex District Plan 2014 Policy DP38: *Biodiversity* states that development should “Contribute and take opportunities to improve, enhance, manage and restore biodiversity and green infrastructure, so that there is a net gain in biodiversity, including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments.”

Mid Sussex District Plan 2014 Policy DP37: *Trees, Woodland and Hedgerows* states that development should “take opportunities to plant new trees, woodland and hedgerows within

the new development to enhance on-site green infrastructure and increase resilience to the effects of climate change.”

Opportunities for Ecological Enhancement

Due to the nature of the site and the proposed development (demolition of existing on-site buildings and the construction of a residential care home with associated parking, access and landscaping) various opportunities for ecological enhancement within the site are available. As such, the following opportunities for ecological enhancement have been identified:

- Bat boxes (Incorporated into the building and mounted on mature trees)
- Insect hotels
- Swift boxes
- Log piles
- Hedgehog domes
- Planting of native trees and shrubs
- Wildflower meadow
- Wildlife pond

The ecological enhancements detailed in this document are intended to maximise the ecology of the site itself and link to habitats and species likely to be found within the surrounding area. Locations of the proposed ecological enhancement are shown on the landscape plans.

The following considerations and references have driven the design process:

- Mid Sussex District Plan 2014
- Great Crested Newt Conservation Handbook, Froglife 2001
- Swift Bricks: The ‘Universal’ Nest Brick, Swifts Local Network 2019
- RHS Plants for Pollinators
- ARC Amphibian Habitat Management Handbook 2011

Wildlife boxes, and other enhancements

The wildlife boxes below have been chosen specifically to benefit species that are found in the local area. The locations of boxes have been chosen to meet the requirements of the species concerned and maximise the chances of successful occupation. To maximise the lifespan of the boxes and minimise visual impact, models which are to be fitted to the building are designed to be incorporated into the masonry of new buildings during construction rather than fitted externally. External models are also included to be fitted to existing mature trees on-site. All boxes are available at www.nhbs.com or direct from manufacturers.

Bat box

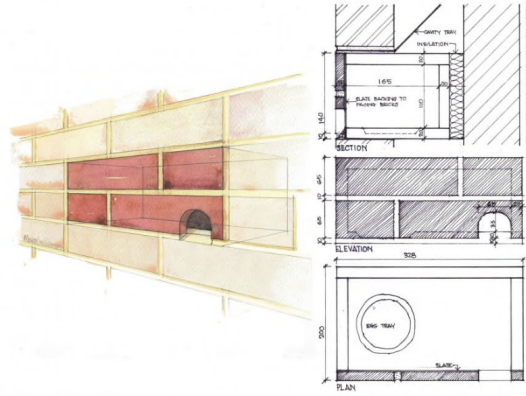
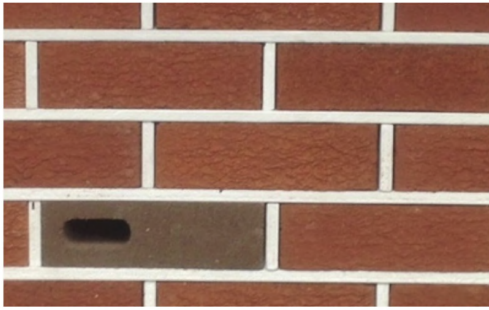
Six of the following models of bat box (or a suitable equivalent) are to be included in the development. **Four** will be incorporated into the structure of the new building and **two** will be fitted to existing mature trees. The location of incorporated boxes will be close to the north-west, south-west, north-east and south-east corners of the proposed building. External boxes will be fitted to mature trees located in the south-east corner of the site. Boxes will be located away from artificial lighting as far as possible. These boxes are designed specifically to accommodate *Pipistrelle* species of bat, which are the most common species in sub-urban locations.

Recommended bat box models:	
Ibstock Enclosed Bat Box 'C' (incorporated)	Or) Ibstock Enclosed Bat Box 'B' (incorporated)
	 Large Bespoke 215 x 290 mm

Miramare Woodstone Bat Box (external)	Or) Schwegler 2FN
	
Location: (Incorporated) north-west, south-west, north-east and south-east corners of new building (External) fitted to mature trees located in south-east corner of site	

Swift box

Swifts are an iconic urban/suburban bird species typically using buildings as nesting places. This species is listed as a Red Species of conservation concern in the UK due to population declines. The inclusion of swift bricks will also provide a new potential nesting site for a variety of bird species. Swift bricks have been proposed as a 'universal' nest brick, as evidence suggests that swift bricks could also provide nesting opportunities for other small birds (e.g., house sparrows, tits, starlings). **Eight** (total) of any of the following three models of swift nest box will be incorporated into the structure of the new building. Boxes will be incorporated in clusters of four as swifts and house sparrows nest communally. The locations will be on the south-west and south-east corners of the proposed building. The boxes should be installed a minimum of 5 m above ground, with a clear flight path to the entrance and out of prevailing winds and strong sunlight.

Swift box:	
lbstock Eco-habitat for Swifts	Or) Swift Box – Smooth Brick
	
Or) Vivara Pro Cambridge Brick Faced Swift Nest Box	
	
Location: South-west and south-east corners of proposed building	

Hedgehog boxes/domes

The habitats within the proposed development, including open lawns, woodland areas, and residential gardens, will provide many foraging opportunities for hedgehogs (*Erinaceus europaeus*). There is growing evidence of a considerable decline in hedgehog numbers in recent years, with around a third of the national population lost since 2000. To contribute to halting this decline, **two** of the following hedgehog nest boxes/dome models are to be installed in the south-east corner of the site amongst the proposed native tree and shrub planting.

Hedgehog dome/boxes:	
HH7 Hedgehog/Mammal House	Or) Hedgehog Nest Box
	
Location: South-east corner of the site	

Invertebrate Boxes

In order to provide additional habitat for invertebrates to shelter, over-winter or nest in, **three** invertebrate boxes will be installed as follows. A mix of the models below are recommended:

- Insect tower: 650 mm high x 210 mm wide
- Bug mansion: 300 mm high x 120 mm wide

Invertebrate boxes will be located one in the north-west and south-west corner of the site amongst the proposed structural planting, and one near the southern boundary adjacent to the wildflower meadow installed on poles at approximately 1 metre above ground level.

Invertebrate boxes:	
Insect Tower (CJ Wildlife)	Bug Mansion
	
Invertebrate boxes are available on NHBS.com Alternative similar models may be agreed with the ecologist.	

Log Piles

Three log piles will be added to enhance the site for a range of species. Log piles have the potential to support a number of hibernating reptiles and amphibians, as well as support diverse populations of invertebrates. The log piles should be set within vegetation so that there is cover immediately surrounding, or adjacent to the log pile. Log piles located in sheltered areas can prevent regular temperature fluctuations and encourage a stable environment for invertebrates, whereas log piles placed in sunny areas will provide basking and egg-laying opportunities for reptiles.

The log piles will be created in accordance with the suggested minimum size recommended in ARC Amphibian Habitat Management Handbook (2011), “4m long x 2m wide x 1m deep”.

One log pile will be located in the south-west corner of the site adjacent to the proposed pond (see below), and two will be located in the south-east corner of the site amongst proposed native tree and shrub planting. If tree removal is taking place, the proposed log piles can be created using the felled branches from native trees within the site. Existing log piles, dead wood and brash located within the surrounding habitat within the site, will be retained in situ or relocated within the site.

Planting of native trees/shrubs

Trees can provide optimal habitat a variety of species, including invertebrates, bats, and birds. Additional trees shall be planted throughout the site predominantly around the eastern, southern, and western boundaries. Tree planting will predominantly include locally native woody species or species with a known attraction or benefit to local ecology, with species bearing nectar, berries, fruit, and nuts providing food for birds, small mammals and invertebrates. Planting will also provide a natural screening/buffer. Tree species will comprise; *Cornus* 'Eddie's white wonder', tulip tree (*Liriodendron tulipifera*), *Prunus* 'sunset boulevard', *Malus domestica* 'Cox's orange pippin', European beech (*Fagus sylvatica*), English oak (*Quercus robur*), Holm oak (*Quercus ilex*). Please see the landscape plan for full details.

The planting scheme will also incorporate flowering and evergreen shrubs and plants on the eastern and northern boundaries of the site, providing food for birds, small mammals, and invertebrates. Species will include; *Weigela* 'Florida variegata', Rosemary (*Rosmarinus officinalis*), Armand clematis (*Clematis armandii*), *Rosa* 'Climbing Iceberg', English lavender (*Lavandula angustifolia*). Other recommended species include; guelder rose (*Viburnum opulus*), common wayfaring tree (*Viburnum lanata*), Japanese quince (*Chaenomeles speciosa*), sweet box (*Sarcococca hookeriana humilis*), cornelian cherry (*Cornus mas*), magic berry (*Symphoricarpos doorenbosii*).

Wildflower meadow habitat

A wildflower meadow will support a wide variety of plant species including native species or species with a known attraction or benefit to local ecology. These areas will provide an improved foraging opportunity for many species such as invertebrates, birds, and bats.

Wildflower species will include those listed within the RHS 'Perfect for Pollinators Wildflower List' such as yarrow (*Achillea millefolium*), cowslip (*Primula veris*), birdsfoot trefoil (*Lotus corniculatus*), red fescue (*Festuca rubra*) and common bent (*Agrostis capillaris*). The wildflower meadow will be located on the southern boundary of the site.

Pond creation

A wildlife pond will be created towards the south-west corner of the site, included within the wildflower meadow (see above). This pond will replace two existing ponds which are due to be lost as part of the proposed development. Ponds create a significant habitat enhancement for a wide range of wildlife including plants, invertebrates, amphibians, reptiles, bats, and birds. Ponds also help with flood water retention. The following guidance should be followed when designing the pond (Natural England 2001). These characteristics are favoured by amphibians such as great crested newts:

- Varied depth (up to 4 m deep).
- No fish may be added to the pond.
- Low density of wildfowl.
- Occasional drying out is acceptable as long as it holds water one summer in every three.
- Substantial cover of native submerged and marginal vegetation.
- Good populations of invertebrates and other amphibians.

Spoil arising from the pond creation can be mixed with other materials such as rubble to provide uncompacted mounds and banks for shelter and hibernation sites. The pond should be enhanced through the planting of native, locally indigenous plant species of varied structures. Proposed marginal pond planting may comprise species with known benefit to wildlife which are listed within the RHS 'Perfect for Pollinators Wildflower List'. Species include water mint (*Mentha aquatica*), brooklime (*Veronica beccabunga*), arrowhead (*Sagittaria sagitifolia*), and lesser reedmace (*Typha angustifolia*). Bulrush may become harmful to amphibians if it becomes invasive, as this may result in pond drying. Removal of bulrushes at intervals is required if it covers more than 20% of the pond area.



TIM MOYA ASSOCIATES

arboriculture ecology landscape innovation

The Barn, FeltimoresPark, Chalk Lane, Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk | www.timmoyaassociates.co.uk

Tim Moya Associates is a trading name of Tim Moya Tree Services Ltd. Company Reg No. 3028475