**"Providing Common-sense Solutions for Sustainable Development"**

Paul Keeling BSc (Hons) MCIEEM, (Director/Principal Ecologist), Park Hall Farm, Brookhouse Road, Cheadle, Staffordshire Moorlands, ST10 2NJ, M: 07838 377 612 (direct line), E: paul@evolutionecology.co.uk, www.evolutionecology.co.uk

# Sytch Road, Brown Edge

## Ecological Protection and Enhancement Overview Report

**December 2018**

## Executive Summary

An ecological protection and enhancement plan/report has been requested by Mr. Gez Willard (Agent), for the proposed development of houses on the land off of Sytch Road, Brown Edge, Staffordshire (OS Grid Reference: SJ 90759 53255).

This report has incorporated feedback from various parties including; Evolution Ecology Ltd, Absolute Ecology LLP, and Staffordshire Wildlife Trust (Emails sent to the LPA). Additionally, the level of detail in this report also marries up to the client's current progress of obtaining planning consent for the site (Outline Panning).

The development/landscape proposals for the land off Sytch Road are to build residential dwellings on the site.

This report will need to be assessed alongside the following ecology site assessment reports/plans (please see appendices) –

1. **Habitat Survey Reports –** Evolution Ecology Ltd and Absolute Ecology LLP.

2. **Bat Transect Survey Report** - Evolution Ecology Ltd.

3. **Reptile and Terrestrial Amphibian Presence / Absence Report –** Evolution Ecology Ltd

In conclusion, the incorporation of the management prescriptions detailed in this report will provide additional ecological features at the site, for a variety of fauna and flora species. This will be implemented in the form of significant planting of trees and shrubs, the creation of a pond, protection measures to retain the marshland area, and a section of tall ruderal habitat proposed.

The creation of a **pond** will improve the foraging and breeding opportunities for amphibians and reptile species in the area.

The installation of bat and bird boxes and the general planting of **trees and shrubs** across the site will increase breeding and foraging opportunities for bats and birds.

## Contents

## 1. Background

An ecological protection and enhancement plan have been requested by Mr. Gez Willard (Agent), for the proposed development of houses on the land off Sytch Road, Brown Edge, Stoke–On-Trent, Staffordshire (OS Grid Reference: SJ 90759 53255).

This report has incorporated feedback from various parties including; Evolution Ecology Ltd, Absolute Ecology LLP, and the Staffordshire Wildlife Trust (Emails sent to the LPA). Additionally, the level of detail in this report also marries up to the client's current progress of obtaining planning consent for the site (Outline Panning).

The development proposals for the land off of Sytch Road are to build residential dwellings on the site.

This report will need to be assessed alongside the following ecology site assessment reports/plans (please see appendices) –

1. Habitat Survey Reports – Absolute Ecology LLP and Evolution Ecology Ltd. These reports include data about the habitats at the site.

2. Bat Transect Survey Report - Evolution Ecology Ltd.

3. Reptile and Terrestrial Amphibian Presence/Absence Report – Evolution Ecology Ltd.

## 1.1 Site Location

The site is situated in the village of Brown Edge, Staffordshire. The proposed development site consists of various habitats; tall ruderal, marshy grassland, scattered trees, and a small stream bordering the eastern boundary.

Additionally, residential/commercial properties, gardens/yards, amenity grassland and hard-standing ground all dominate the immediate adjacent land in all directions. Within the wider landscape, habitats such as housing estates, parkland, heathland, woodland, pastureland, arable land and water bodies (in the form of rivers, streams, and ponds) are all present. These habitats present some potential foraging/sheltering and roosting opportunities for a number of bat species.

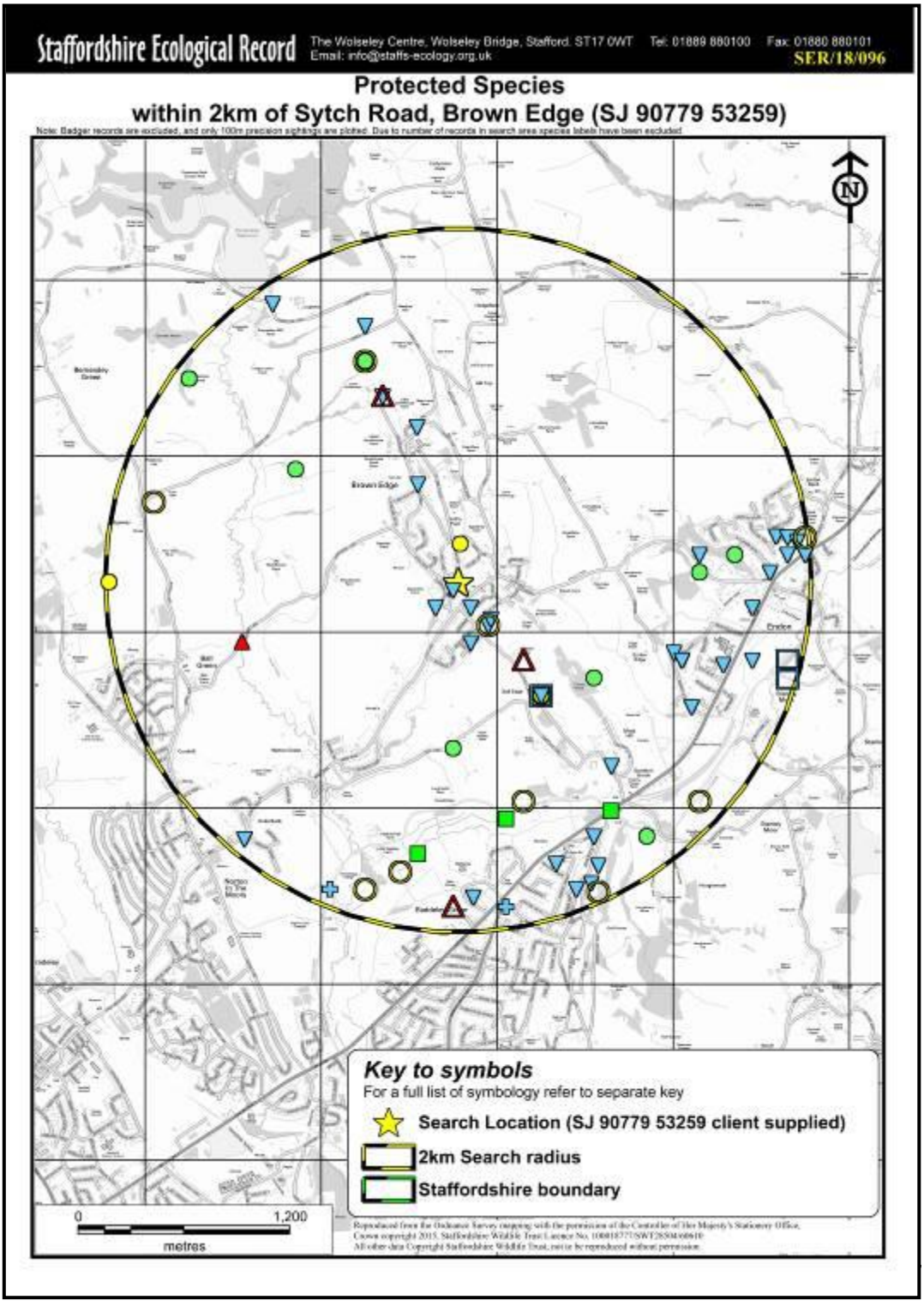
**Figure 1:** An aerial photograph showing the approximate boundary of the proposed development site (outlined in red), in context to its surrounding area.

**Figure 2:** A plan (provided by Absolute Ecology LLP) showing the habitats present on the site.


This habitat plan is from Absolute Ecology's Preliminary Ecological Appraisal Report, dated October 2016.

## 1.2 Designated Sites

**Figure 3:** An ecological data search map (supplied by SER) which illustrates all of the designated sites and protected species records within a 2km search radius of the site of interest.



# 2 Habitats/Species Survey Results

## 2.1 Habitat Assessment Results

The site is approximately 0.88ha in size and consists of a mixture of tall ruderal and marshland habitats.

The majority of the site, around 90%, is comprised of 'tall ruderal' habitat, and contains the following plant species –

- Rosebay Willow Herb (UK Conservation Status - Common),
- Bramble (UK Conservation Status -Common),
- Stinging Nettle, (UK Conservation Status -Common),
- Japanese Knotweed, (UK Conservation Status - Invasive, non-native species),
- Wild Raspberry, (UK Conservation Status – Believed to be Common),
- Broad-Leafed Dock, (UK Conservation Status -Common),
- Meadow Buttercups, (UK Conservation Status -Common),
- Soft Rush, (UK Conservation Status -Common),
- Common Hawthorn, (UK Conservation Status -Common),
- Cow Parsley, (UK Conservation Status -Common),
- Marsh Thistle, (UK Conservation Status -Common),
- Common Mouse Ear, (UK Conservation Status – Common),
- Hogweed, (UK Conservation Status -Common),
- Common Ragwort, (UK Conservation Status -Common),
- Wood Forget-Me-Nots, (UK Conservation Status -Common),
- Bush Vetch, (UK Conservation Status -Common),
- Creeping Thistle, (UK Conservation Status -Common),
- Scaly Male Fern, (UK Conservation Status -Common),
- Meadow Foxtail, (UK Conservation Status -Common),
- Cuckooflower, (UK Conservation Status -Common),
- Elderberry, (UK Conservation Status -Common),
- Common Ash, (UK Conservation Status -Common),
- Willow, (UK Conservation Status -Common),
- Sycamore, (UK Conservation Status - Introduced, non-native species),
- Teasel, (UK Conservation Status -Common),
- Daisy, (UK Conservation Status -Common),

- Yellow Gorse, (UK Conservation Status -Common),
- Ribwort Plantain, (UK Conservation Status -Common),
- Holly, (UK Conservation Status -Common),
- Elder, (UK Conservation Status -Common),
- Buddleia, (UK Conservation Status -Introduced, but naturalised species.),
- Silver birch, (UK Conservation Status -Common),
- Goat Willow, (UK Conservation Status -Common),
- Crack Willow, (UK Conservation Status -Common),
- European Gorse, (UK Conservation Status -Common),
- Creeping Buttercup, (UK Conservation Status -Common),
- Ground Elder, (UK Conservation Status -Invasive, non-native species.),
- Hedge Bindweed, (UK Conservation Status -Common),
- Creeping Bent, (UK Conservation Status -Common),
- Common Bent (UK Conservation Status -Common),
- Rough- Stemmed Meadow Grass (UK Conservation Status-Common).

This collection contains over 40 species of flora that shows a good example of a collection of commonly found species. No flora species that were identified on the site, are protected under the 'Protected Plants: Wildlife and Countryside Act 1981 (schedule 8)'.

The cluster of Japanese Knotweed is located on the north-western section of the site (target note 2). Please see the following link for further details on how to deal with Japanese knotweed.

Link - https://www.gov.uk/search?q=japanese+knotweed.

In this same location is a dry-stone wall (target note 3) that creates the north facing boundry of the site.

The remaining 10% of the site is 'Marshland Habitat', which contains the following;

- Marsh Marigold (UK Conservation Status -Common),
- Soft Rushes (UK Conservation Status -Common),
- Greater Tussock Sedges, (UK Conservation Status -Common),
- Marsh Thistle, (UK Conservation Status -Common),
- Michaelmas-Daisy, (UK Conservation Status – Common - probable garden escape/introduction),
- Lady Fern, (UK Conservation Status -Common),
- Moss, (UK Conservation Status -Common),
- Pendulous Sedge, (UK Conservation Status -Commo),
- Rosebay Willowherb, (UK Conservation Status -Common),
- Teasel, (UK Conservation Status – Common - probable garden escape/introduction),
- Hairy Willowherb, (UK Conservation Status -Common),
- Imperforate St John's Wort, (UK Conservation Status -Common),
- Yellow Flag, (UK Conservation Status -Common),
- Articulate Rush, (UK Conservation Status -Common),
- Hard Rush, (UK Conservation Status -Common),
- Duckweed, (UK Conservation Status -Common),
- Greater Bird's-foot Trefoil, (UK Conservation Status -Common),
- Gypsywort, (UK Conservation Status -Common),
- American Skunk Cabbage, (UK Conservation Status – Non-native),
- Spearmint, (UK Conservation Status –probable garden escape/introduction),
- Marsh Cinquefoil, (UK Conservation Status -Common),
- Creeping Buttercup, (UK Conservation Status -Common),
- Common Sorrel, (UK Conservation Status -Common),
- Sallow, (UK Conservation Status -Common),
- Ragwort, (UK Conservation Status -Common),
- Devil's-bit Scabious, (UK Conservation Status -Common),
- Stinging Nettle, (UK Conservation Status -Common,
- Common Valerian, (UK Conservation Status - Introduced, but naturalised species.),
- Guelder Rose, (UK Conservation Status -Common),
- Willow Sapling, (UK Conservation Status -Common),

All these flora species above were recorded during the various surveys that have been carried out during the spring, summer and autumn months of 2018 (please see Target Note 1 in the habitat plan).

**The plants that have been highlighted in blue are indicative of long-established wetland.**

## 2.2 Bats Survey Results

The results of the three bat transect surveys undertaken between 1st of May and 2nd of June 2018 revealed that the site appeared to be used as foraging and commuting habitat for common pipistrelle (*Pipistrellus pipistrellus*). Be that as it may, the site offers no bat roosting features. With this being the case, it is believed that the development will have no significant impact on the local bat populations. However, a number of recommendations should be followed to enhance the site for both bat and bird species.

## 2.3 Reptile and Amphibian Survey Results

The results of the reptile surveys carried out between April – May 2018 (by Evolution Ecology Ltd.) identified that no reptiles are present on the site proposed for development.

# 3 Management Prescriptions

## 3.1 Habitat Mitigation Measures

The removal of the **tall ruderal habitat** on the site can be carried out at any time of the year. However, consideration will have to be taken with regards to the fauna species which have been recorded using these habitats, in order to minimise the impact of the proposed development upon them. Please see the individual species recommendations throughout this report for further details.

The **marshland area** will need to be fenced off during the construction phase to prevent machinery from entering this habitat, in order to preserve it. The proposed development is going to be designed to protect existing water flow to the marshland habitat. (please see 'Mr G Bennett, Hydrologist Summary report').

**Figure 4:** Example of protection measures to be used for the marshland area (heras-panel-weight fence)

## 3.2 Habitat Compensation/Enhancement Measures

**SUDS/Pond** - It is recommended that the construction of a pond is implemented at the site (please see Figure 8, for the location), which will provide new breeding opportunities for amphibians and invertebrates, along with new foraging opportunities for the above species and small mammals.

**Bats and birds** - Additionally, bat and bird roosting/nesting features are to be installed into the fabric of the new buildings, and suitable plants are to be incorporated into the landscape planting scheme, which will benefit wildlife and promote immigration onto the site of local populations.

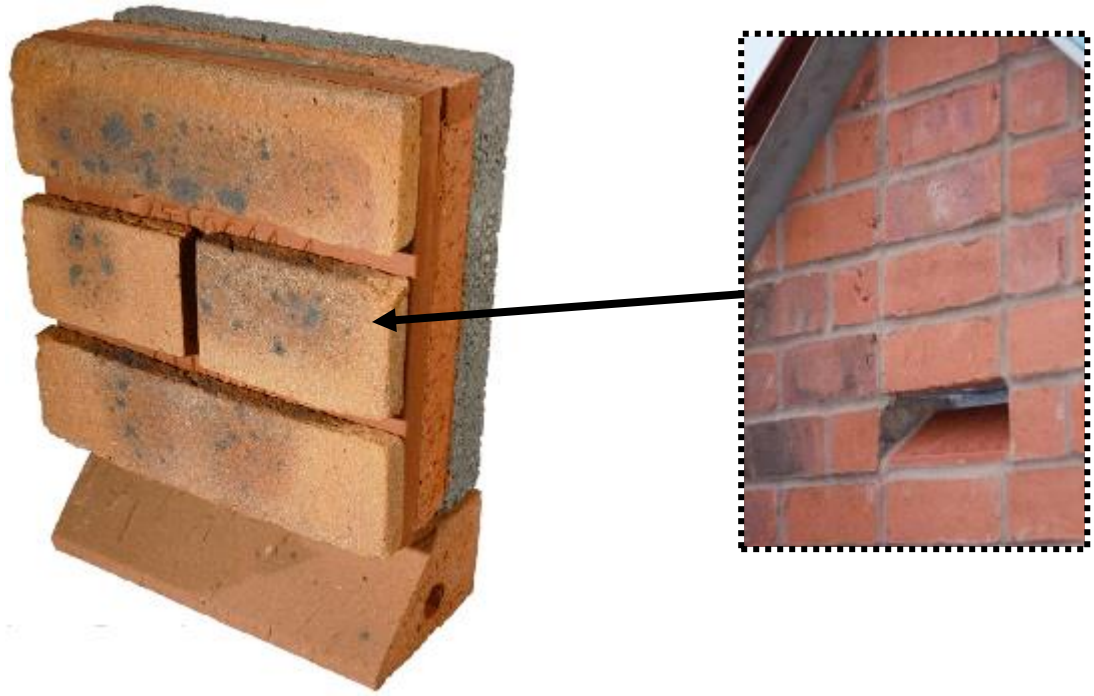
## 3.3 Bat Enhancement Measures

Overall the creation of new features at the site, in the form of trees and shrubs being planted, and new roosting features (bat boxes) installed on the **west apex of all houses**, will create new foraging and roosting opportunities for the bats that have been recorded in the local area.

**Figure 5** - Ibstock Enclosed Bat Box 'B'

https://www.nhbs.com/ibstock-enclosed-bat-box-b

Large enclosed bat box 'B' these boxes should be incorporated into the proposed works and can be purchased from NHBS for £128.00 (including VAT).



## 3.4 Reptiles

The results of the reptile surveys carried out between April – May 2018 (by Evolution Ecology Ltd.) identified that no reptiles are present on the site proposed for development.

## 3.5 Reptile Mitigation Measures

As the results of the presence/absence survey revealed an absence of reptile populations on the site, no reptile mitigation measures are required.

## 3.6 Reptile Enhancement Measures

As the results of the survey revealed an absence of reptile populations on the site, no reptile enhancement measures are required.

## 3.7 Amphibian Mitigation Measures

Site supervision will be required to undertake vegetation clearance by hand, in order to ensure the safety of protected species (please see Figure 6). Any amphibians recorded will be relocated to the marshland habitat, with a specific translocation site determined on the day of the works by an ecologist.

**Figure 6:** An example of vegetation clearance carried out at a different site.

## 3.8 **Amphibian Enhancement Measures**

The results of the Reptile and Terrestrial Amphibian survey showed a peak count of two Common Frogs (*Rana temporaria) and* two Common Toads (*Bufo bufo).* Currently, the site offers good foraging opportunities for amphibians but lacks breeding facilities, so the creation of a pond in the south-east corner of the site would provide breeding facilities the site, thus allowing for all amphibian life-cycles to take place onsite.

The creation of this pond will also offer new foraging and breeding opportunities for invertebrates, which could subsequently encourage more animal species to utilise the site.

Along with the creation of a pond, a hibernacula should also be created to provide hibernation facilities on the site (please see Figure 7).

**Figure 7:** A diagram of a hibernacula that is recommended to be created to provide hibernation facilities.

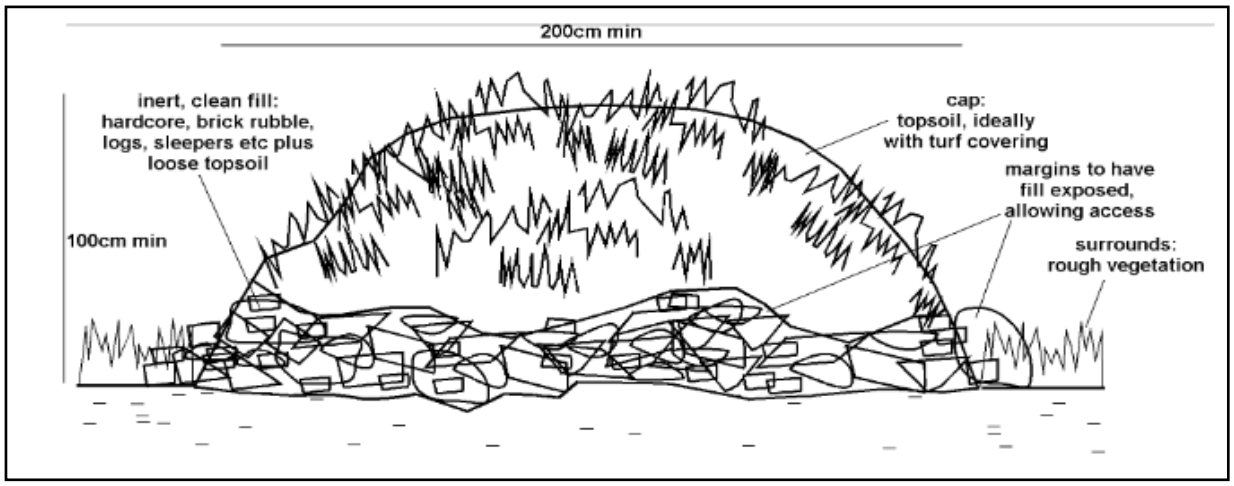
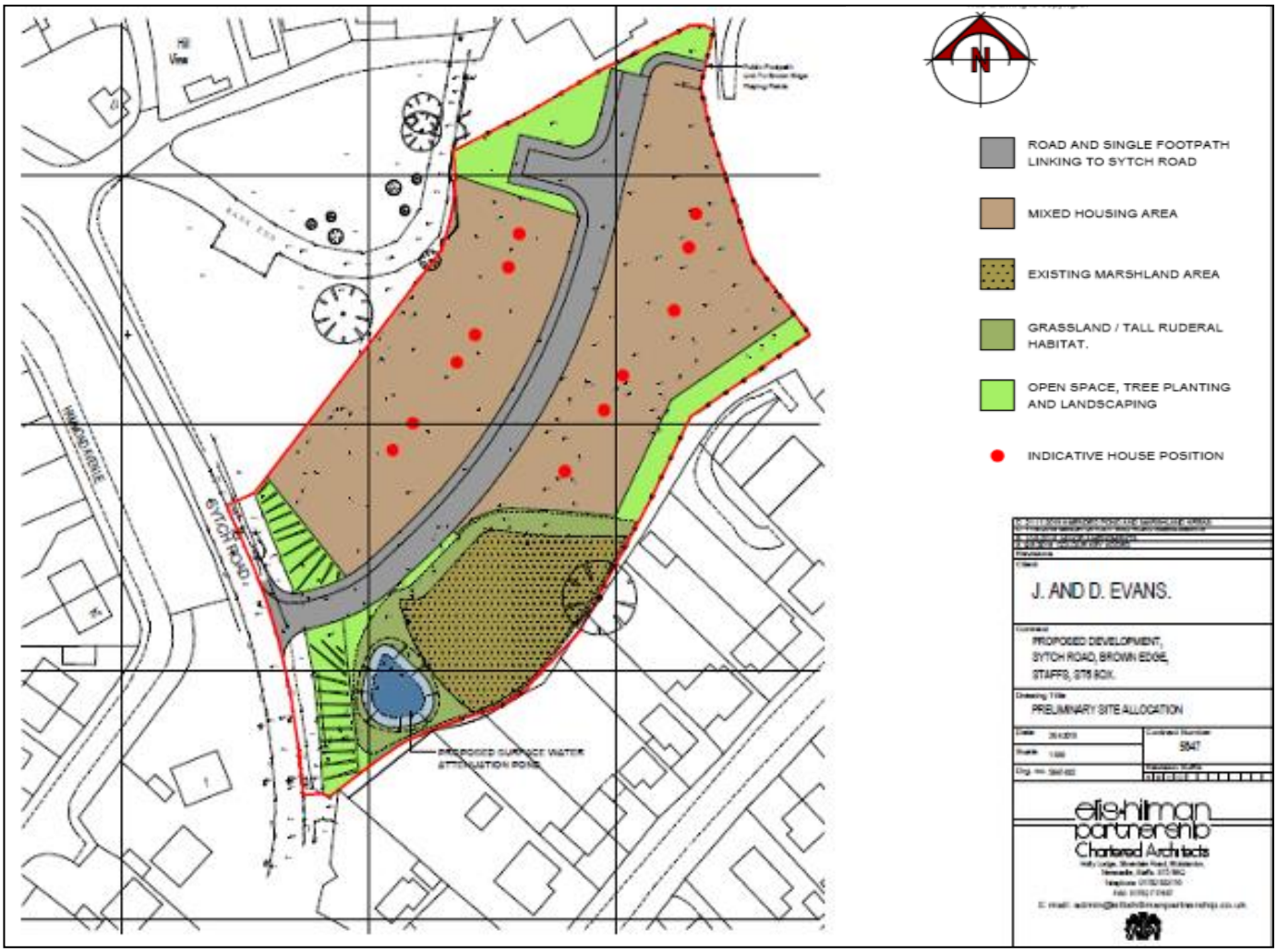


**Figure 8:** Pond Location (indicated by the blue circle).

These plans are for illustration purposes only. For a larger and clearer images, please contact Mr. Gez Willard (gez.willard@icloud.com)



# 4 Habitat/Species Enhancement Prescriptions

## 4.1 Habitat Enhancement

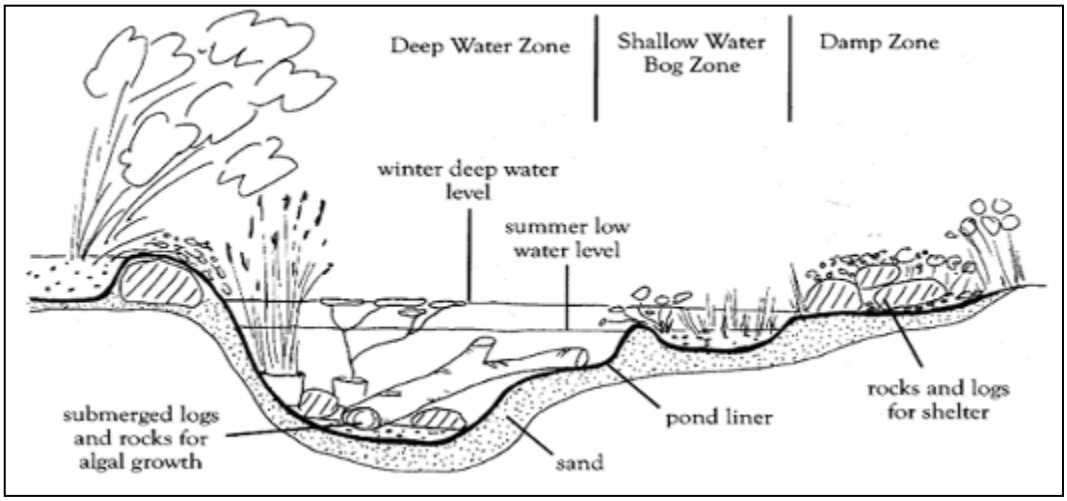
**Timetable of Works – Generally the winter months are the best time of the year to create ponds and plant trees.**

**SUDS/Pond Creation**

One SUDS/pond is to be created within the Sytch Road, Brown Edge development site boundary, in order to enhance the sites value to local fauna (specifically amphibians). The area selected for the creation of the pond is the south-east corner of the site. The pond should be created in line with the following criteria, in order for the maximum benefit to wildlife to be attained

- The pond should measure at least 5m x 5m as a minimum.
- The pond will be created with a basin shape and the depth will be approximately 1m at the deepest point. It will also need to be lined with either clay or a pond liner.
- The south side of the pond will be clear of vegetation to prevent over shading and thus maximise the value for wildlife.
- The pond will be fenced off with post and wire fencing [post-development] in order to deter disturbance by humans.
- If the pond is created in the winter months then it should fill up with the increased winter rainfall, whereas if it is created in summer then the pond may need to be filled up from water brought in from a different site or water source by a water bowser.
- A range of plants should be planted in and around the edge of the pond to create feeding and habitat opportunities for invertebrates and amphibians. To preserve the flora species onsite, it is recommended that these plants from the marshland area should be taken in small amounts and moved to the suitable areas of the pond (Marshland Clinquefoil (*Potentilla palustris*), Marsh Marigold (*Caltha palustris*) and Gypsywort (*Lycopus europaeus*)). Once these species have been planted the pond can be left to colonise.

**Figure 9:** An illustration of the pond, outlining how the pond should be created.




## 4.3 Management Prescriptions

Ponds need to be managed on a regular basis, in order to ensure that either aquatic nor terrestrial flora dominates the pond. An increase in flora can cause the shading of the pond to increase, which ultimately influences how much heat the pond is able to absorb from the sun. However, regular management of the pond will ensure that its wildlife value will remain consistent.

- In the early years, blanket weed can cover ponds in warm weather. This should be removed carefully by hand. Once the pond has settled down, blanket weed will usually be kept in check by pond animals, naturally preventing overgrowth.

- Other plants can also threaten to take over, and again these are best thinned out regularly. Do not clear more than one third in any one year. When clearing out ponds, leave any plants and debris along the edge for a few days or so before removing. This allows any trapped wildlife to return to the water.

- If the water level drops during the summer months, it shouldn't be too much of an issue, as most pond plants can cope with this, as can certain species of insect (which may even benefit in such situations). If the water does need to be topped up at any point, water from a barrel should be used in preference to mains water, as mains water is richer in nutrients and likely to encourage algal blooms, which can be detrimental to sub-aquatic flora and fauna.

## 4.4 Tree and shrub planting

A scheme of significant planting of trees, shrubs, the creation of a pond, protection measures to retain the marshland area and a section of the tall ruderal habitat will be retained, under the current proposals, and will ultimately benefit a range of species utilising the site. See 'Figure 10' for the species of trees and shrub that should be planted to increase foraging for bats and birds.

**Figure 10:** Suggested trees and shrubs to be planted on site to increase bat foraging opportunities (source from Bat Conservation Trust).

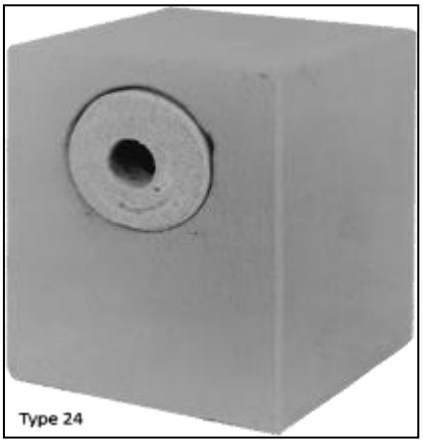
## 4.5 Bat/Bird (and Insect) Box Incorporation

Currently, the site doesn't provide any breeding opportunities for birds, however installing bird boxes into the fabric of the house dwellings at least 3-4m from the ground will provide these breeding opportunities.

A number of self-contained bird boxes can be installed into the fabric of each dwelling. These bird boxes need to be installed in a northerly direction, at least 4m from the ground. Please see the next page for examples and number of boxes to install.

- **Schwegler Brick Nest Boxes**

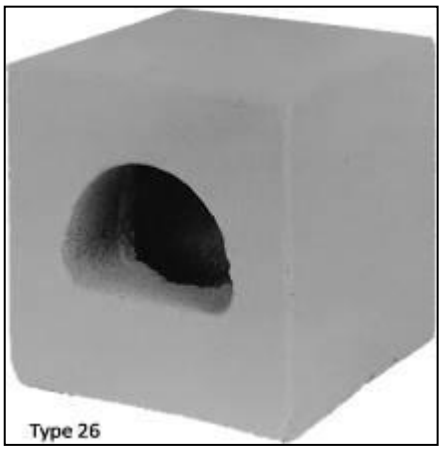
This range of brick nest boxes follows a highly successful design that has evolved over 40 years since Schwegler first started producing brick nest boxes for incorporation into buildings. The box dimensions correspond to those of standard, commercially available bricks used in modern European construction. These dimensions allow for a 1cm layer of mortar enabling the nesting blocks to be inserted in any wall without the need to cut adjoining bricks. The box can be installed flush with the outside wall and can be rendered or covered so that only the entrance hole is visible.


Type 24

The interior of the box resembles a natural woodpecker hole, with the same shallow, oval depression in the floor. The box is manufactured from virtually the same material as Schwegler's tried and tested wood-concrete; an exceedingly durable, rot-proof and breathable natural material designed to mimic the properties of natural nest sites. Three designs of brick nest box are available.

**Type 24**
Features an upright box with removeable entrance hole at the top. With an entrance hole diameter of 32mm, this box is suitable for many small birds including great, blue, marsh, coal and crested tits, redstarts, nuthatch, tree and house sparrows.
Dimensions: height 23.5cm, width 18cm, depth = 18cm.
Weight = approx. 7.3kg.

**Type 26**
Features an upright box with large open front. With a large open hole (110 x 80mm), this box will attract species that use open-fronted nest boxes, such as redstart, pied wagtail, spotted flycatchers and sometimes robin.
Dimensions: height 98cm, width 18cm, depth 18cm.
Weight = approx. 5.4kg.


Type 26

**Five (Type 24) + Five (Type 26)** of these boxes should be incorporated into the proposed works, and can be purchased from NHBS for £36.95 (including VAT).

- **1SP Schwegler Sparrow Terrace**

The Sparrow Terrace has been designed to help redress the balance of falling house sparrow numbers. The current UK population of 6 million pairs is half what it was in 1980 and this is thought to be due to habitat destruction and lack of suitable nesting spaces. Sparrows are social birds and like to nest in company. This terrace provides ideal nesting opportunities for three families. Made of Schwegler's revolutionary wood-concrete mix, this terrace is durable, breathable and will last many decades. It may also occasionally attract tits, redstarts and spotted flycatchers.

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 houses in built-up areas, and on industrial and agricultural buildings such as barns, sheds and factories. Due to its weight (15kg), it is not suitable for fences or garden sheds. Ideally place the terrace two metres or more above the ground. Either install on the surface of the wall using the plugs and screws provided, or install directly into the wall (see the images tab for illustrations). Cleaning is advisable but not necessary. The front panel can be removed by turning the screw hook.

The Sparrow Terrace is available in either Stone or Brown.

**Three** of these boxes should be incorporated into the proposed works, and can be purchased from NHBS for £69.95 (including VAT).

## 4.6 Hedgehog Habitat – Additional Measures

Hedgehogs are currently classified as a UK BAP priority species (meaning that they are one of the most threatened and conservation requiring species under the UK Biodiversity Action Plan - UK BAP) and they are also listed under the NERC Act 2006 as a 'Species of Principle Importance' for biodiversity.

With this being the case, it is recommended that hedgehog habitats be incorporated within selected stretches, in order to encourage the use of the site by this species.

The '**Hogitat Hedgehog House**' is recommended for use, due to its rust-proofed steel frame, its predator defence tunnel and its overall natural appearance (meaning that it would blend into the hedgerows). In order for the incorporation of these man-made shelters to be beneficial to the species, at least five of these hedgehog houses should be incorporated into appropriate areas beneath the hedgerows of the site.

Management

Due to its durable nature, the Hogitat Hedgehog House should be relatively maintenance free. However, those incorporated into the works should be checked on occasion, in order to ensure that they are still intact and thus performing their intended function. If any are found to be visibly broken or in a state of disrepair, they should be replaced accordingly.

**Supplier - NHBS**

## 5. Conclusions

In conclusion, the incorporation of the management prescriptions detailed in this report will provide additional ecological features at the site for a variety of fauna and flora species. With significant planting of trees, shrubs, the creation of a pond, protection measures to retain the marshland area and a section of the tall ruderal habitat proposed.

The creation of a **pond** will improve the foraging and breeding opportunities for amphibian, reptile and invertebrate species in the area.

The installation of bat and bird boxes, and the general planting of **trees and shrubs** across the site will increase breeding and foraging opportunities for both bats and birds.

## LIMITING CONDITIONS/DISCLAIMERS (Unless stated otherwise)

### 1. The Service

1.1 Evolution Ecology agrees to supply ecological consulting services of a preliminary nature or a more thorough service as advised or as commissioned.

### 2. Fees

2.1 The client(s) will settle the agreed fee in full, within 30 days of receiving the invoice. Reports will remain the property of Evolution Ecology until full payment has been received. No liability is accepted for the contents of a report that is not paid in full. Any queries should be notified to Evolution Ecology within 7 days of the invoice date.

2.2 If the client(s) fails to pay within the time specified in 2.1 then Evolution Ecology shall charge the client(s) interest on the outstanding fee, both before and after any judgment, at the rate of 4% per month above the HSBC Bank base rate, until payment is made in full (A part of a month being treated as a full month for the purposes of calculating interest).

2.3 In the event that it is necessary to recover any outstanding fees from the client(s), the client(s) will fully reimburse any costs and expenses incurred during the recovery period, including court costs. Evolution Ecology reserves the right to make a charge for every letter sent and telephone/fax call made, in connection with the recovery.

### 3. The Report

3.1 If any part of the report is lost, or altered without the written consent of Evolution Ecology, then the entire report becomes invalid.

3.2 The general format of reports is a certified product and cannot be shown, copied or distributed to third parties without the permission of Evolution Ecology. No liability is accepted for the contents of the report, other than to that of the client(s).

3.3 The report will purport not to express any opinion or comment as to the condition or structural integrity of any building and no reliance should be made on any such comments.

## 4. Insurance Cover

4.1 All work carried out by Evolution Ecology is covered by a £1,000,000 professional indemnity insurance.

## 5. Quality of Craftsmanship

5.1 When appointing an Ecologist, please use only suitably qualified and experienced companies (The Local Authority and the Institute of Ecology and Environmental Managers may be able to provide a select list of such companies)

5.2 Evolution Ecology will not accept liability for any works undertaken by any other companies, or contractors.