

ECOLOGICAL MANAGEMENT PLAN

DAISY BANK FARM, UTTOXETER
ROAD, UPPER TEAN

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1.0 INTRODUCTION

Site Information

- 1.1 Rachel Hacking Ecology Limited was commissioned in 2022 by Enzo's Estates to produce an Ecological Management Plan for a proposed development at Daisy Bank Farm, Uttoxeter Road, Upper Tean, Stoke-on-Trent (O.S. grid reference: SK 01367 39118 – see Figure 1). The proposed development site currently comprises the fields of grazed grassland that lie to the north, east and south of the Daisy Bank Farmhouse (not within the application boundary). The village of Upper Tean lies to the north-east of the site and agricultural land lies on all other sites. Uttoxeter Road runs along part of the south-western boundary.
- 1.2 The site supports ecologically valuable habitats which are to be retained and enhanced and by the development as well as proposed new habitats within the public open spaces. The purpose of the management plan is to set out how these habitats will be created and managed during and after the development.

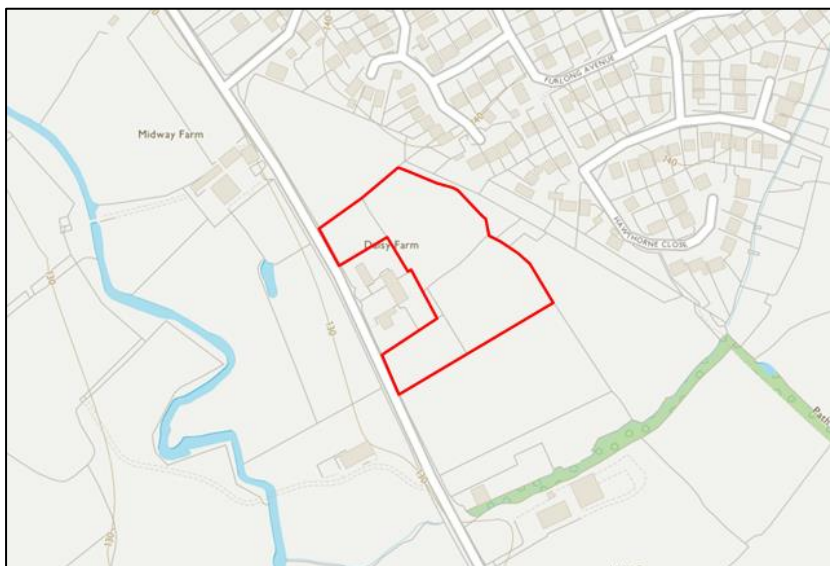


Figure 1 showing the location of the site

Description of Development

- 1.3 The site achieved outline planning permission (application number: SMD:2018/0509) from Staffordshire Moorlands District Council in October 2019, for a residential development for up to 55 units with associated access, and landscaping. The site will be the subject of a reserved matters planning application to deliver the residential development. As part of the outline permission, several conditions were attached. This document aims to discharge Condition 13.

Condition 13

- 1.4 Condition 13 states: *“The first reserved matters application shall be accompanied by an Ecological Management Plan (EMP) which shall first have been submitted to and approved in writing by the Local Planning Authority. The EMP shall address mitigation and enhancement and should include the following although this list should not be regarded as exhaustive:*
 - a) *Purpose and conservation objectives of the proposed enhancements.*

- b) Detailed designs and/or working methods to achieve stated objectives.*
- c) Extent and location of proposed works on appropriate plans and scale maps.*
- d) Type and source of material used where appropriate e.g. native species of local provenance.*
- e) Creation and enhancements of semi natural habitats linked to Staffordshire and UK biodiversity Action Plan priorities prioritising the enhancement and creation of hedgerows and associated buffer strip (up to 2m from hedgerows).*
- f) Provision for linear wildlife corridors and stepping stone habitats linked into the surrounding landscape and Local Wildlife Site (LWS) promoting habitat connectivity.*
- g) Timetable for the implementation of works demonstrating that works are aligned with the proposed phases of the development. This should include a ten year plan detailing implementation, monitoring and remediation and habitat maintenance measures*
- h) Creation of bird nesting features for bats, house martin and house sparrow within new buildings.*
- i) Creation of grassland areas to include soil preparation, seeding or creation using green hay, initial and long term maintenance including cutting regimes and protection from disturbance.*
- j) A lighting design plan and technical specifications to minimise light spill into surrounding hedgerows and the adjacent countryside. Lighting must demonstrate acceptable impacts on foraging or commuting bats that may use adjacent hedgerows and allow birds species to exhibit undisturbed behaviour patterns.*
- k) Garden planting to benefit pollinating insects including climbing species to create green infrastructure*
- l) Persons responsible for implementing the proposed works.*

The EMP shall be implemented in accordance with the approved details and all features shall be retained in that manor thereafter."

Reason: In order to secure a net gain in biodiversity.



2.0 DESCRIPTION & EVALUATION OF EXISTING HABITATS & NEW HABITATS TO BE MANAGED

Existing Habitats

2.1 The site currently comprises fields of poor semi-improved grassland with the following

- Tall, Ruderal Herb
- Species-poor Intact and defunct Hedgerows
- Building/structure
- Scattered trees
- Scattered scrub
- Spoil Heap

2.2 The development will cause the loss of the poor semi-improved grassland, a section of the species-poor intact hedgerow, tall ruderal herb, the spoil, and the buildings/structures. These habitats are considered to offer low/moderate ecological value and their loss can be suitably mitigated for within the landscaping design.

New Habitats

2.3 The landscaping plan has areas of public open space, formal landscaping and garden spaces proposed within the development, this is comprised of amenity grassland (areas of turf and grass seed), native and ornamental shrub planting, tree planting, bulb planting and ground cover planting. The boundary hedgerows are mostly to be retained with new sections of hedgerow (native and ornamental) also proposed.

3.0 ECOLOGICAL TREND AND CONSTRAINTS ON SITE THAT MAY INFLUENCE MANAGEMENT

3.1 An Extended Phase one habitat survey of the site carried out in 2019 and 2022 by Rachel Hacking Ecology identified the species within Table 1 to be associated with the site and will be considered within the management plan for the site. These protected or notable species occur on the site, or are species known to occur within the area and the site provides suitable habitat.

<i>Table 1 showing protected species to be considered within the development</i>	
Species	Recommended Action
Nesting birds	Time the removal of any suitable nesting habitat to occur outside the nesting bird season.



4.0 MANAGEMENT AIMS AND OBJECTIVES

4.1 The core management aims and objectives on the site are:

OBJECTIVE 1 - Create Band of Scrub on the eastern and southern boundary

OBJECTIVE 2 – Protect the Existing retained Trees and plant new trees

OBJECTIVE 3 - Create ornamental landscaping across the site

OBJECTIVE 4 – Create new hedgerows and protect existing Hedgerows

OBJECTIVE 5 – Create Amenity Grassland within the gardens and green spaces

5.0 HABITAT CREATION

Objective 1

- 5.1 The eastern and southern boundary of the site will support a buffer area of scrub planting offering a wildlife corridor between the land in the south and the land in the north. The existing hedgerow on this boundary will be retained, the additional planting will expand this area. A full list of proposed species can be found within the landscaping proposals but the supports a range of Native plants including Hazel *Corylus avellana*, Hawthorn *Crataegus monogyna*, Holly *Ilex aquifolium*, Field-Rose *Rosa arvensis* and Dog Rose *Rosa canina*. The band of scrub once established will create a buffer zone along the north-eastern and south-western boundary of the site, it will fill in the gaps within the Defunct hedgerow on the north-east boundary and provides a wildlife corridor (see Appendix B which shows the proposed habitat connectivity across the site). The scrub planting will provide nesting habitat provide a food source as the proposed species list supports berry and nut bearing trees. It will also provide bat foraging and commuting habitat.
- 5.2 Full descriptions of the proposed planting schemes can be found within the landscaping plan for the site, made up from the native Scrub Mix 1, Native Scrub Mix 2 and Native Scrub Mix habitats. The band of scrub will be created by planting 920 plants along the existing hedgerow, with a small number of native scattered trees also planted within the scrub, the shrubs will be planted in a non-uniform manner to create a natural feel to the planting.
- 5.3 The species for planting will be sources from British nurseries, ideally a local supplier. They will be planted at the recommended depth for each species between November and March, no plants will be planted during snowy, frosty or waterlogged conditions.



Proposed Management

- 5.4 The buffer zone will be managed by the adopting authority once planted. All dead, diseased and damaged plants will be replaced. The edges of the buffer zone will be pruned once a year, between September to March so that there is no conflict with nesting birds on the site. If required, the scrub will be watered to ensure healthy growth is maintained. Litter will be removed as required by the adopting authority.

Objective 2

- 5.5 Some of the trees on site are retained within the scheme and further tree planting is proposed within the landscaping. The proposed tree planting is composed of native species including Silver Birch *Betula pendula*, Hawthorn *Crataegus monogyna*, Rowan *Sorbus aucuparia* and Guelder-Rose *Viburnum opulus* which will be sourced from Britain and ideally a local supplier, a full species list can be found within the landscaping plan. The retained trees will be protected with a roost protected area during the construction phase of the development as agreed with the LPA. The newly planted trees are located across the site and will be staked to support the tree as it matures. A layer of Mulch will be added around the base of the newly planted trees.

Proposed Management

- 5.6 The trees will be monitored annually for any damage that may require pruning/maintenance required for safety on the site. Any works will be carried out by a suitably qualified and experienced person. Any works to the trees will be limited to between September and March so there is no conflict with nesting birds.

Objective 3

- 5.7 Areas of landscaping are proposed at the site entrance, these are composed of a mix of native scrub species with scattered trees, ornamental ground cover species and bulbs. A full species list can be found within the landscape plan, but the proposed mixture of species and varieties, both native and non-native, will provide a sustained pollen and nectar source and cover and foraging habitat for a variety of wildlife. Other areas of ornamental landscaping are within the garden spaces of the proposed properties and include climbing species, as well as a mix of native and non-native species.

Proposed Management

- 5.8 The landscaping will be regularly managed by the adopting authority/the end users, pruned as required. Any management particularly to the woody planting should be undertaken outside of the nesting bird season to protect nesting birds. The soft landscaping should undergo frequent management to remove complete species and litter.

Objective 4

- 5.9 Approximately 90m of the hedgerow will be lost from the internal field margins on the site. This will be mitigated for through the planting of hedgerow throughout the site and infill planting of the existing hedgerows where appropriate. The proposed hedgerow planting is composed of native species on the boundaries and non-native species occurring as ornamental hedgerows within the soft landscaping. A full species list can be found in the landscaping report, proposed species include Holly *Ilex aquifolium*, Dog Rose



Rosa canina, Field Rose *Rosa arvensis*, Hazel *Corylus avellana* and Hawthorn *Crataegus monogyna*.

- 5.10 A sensitive lighting scheme will be implemented to prevent artificial light spill on to wildlife foraging and commuting routes during construction and the operational phase affecting the boundary hedgerows. The lighting should be directed away from the retained hedgerows.
- 5.11 The retained hedgerows should be fenced off with a 2m buffer zone during the construction phase. The fence should remain intact for the duration of the works, with no access to the fenced of area. This is to protect the roots and the integrity of the hedgerow.

Proposed Management

- 5.12 The hedgerows should be managed when required to keep the footpaths clear and accessible. The native hedgerows should be cut at least annually to a maximum height of 2.5m and an approximate width of 1.5m. The ornamental hedgerows should also be cut at least annually to the height of 1m and an approximate width of 1m. Maintenance to vegetation suitable for nesting bird such as hedgerows should be done outside of the nesting bird season (generally March to August) to protect nesting birds. If works to the vegetation needs to occur during the nesting season, then a nesting bird survey will be required immediately prior to work commencing.

Objective 5

- 5.13 Amenity grassland will be created within the gardens and amenity spaces across the main residential site.
- 5.14 Any existing vegetation will be removed, and then the topsoil will be lightly scraped (approx. 200-300mm), this is to prevent competitive plant species from establishing. The topsoil will then be scarified/raked prior to sowing the seed. The proposed seed mix is A22 hard Wearing Grass seed supplied by Germinal GB Ltd. This will be undertaken in late summer and the grassland areas kept well-watered. Once the seed has been sown precautions will be taken to ensure pedestrian and other traffic is kept off the grass until the grassland is established such as temporary fencing.

Proposed Management

- 5.15 The grassland will be first cut once the grassland reached 100mm and cut to 50mm. The second cut will be once the grass reached 65mm. The amenity grassland will need to be managed regularly once the grass reaches 100mm, to keep the grassland at the required length (50mm). The arising should be removed from the site to prevent smothering the growing layer.



6.0 PERSONNEL

- 6.1 The habitat creation work must be undertaken by a landscaping team (appointed by the client) with experience of creating the desired habitats.
- 6.2 The future management of the site after the completion of the construction of the site should be undertaken by a management team (appointed by the client), with the private gardens managed by the resident/end-user.

7.0 MONITORING PROPOSALS

- 7.1 The habitats on site, will be subject to a monitoring scheme for 10 years. The purpose of the monitoring is to assess if these habitats have become established or have not declined in ecological value since the completion of the development, and to provide recommendations on changes to the management plan to increase the quality of these habitats if required.
- 7.2 The monitoring of the retained and newly created habitats will be undertaken at regular intervals in the 25 year period, as shown in Table 1.

Table 1. Monitoring Frequencies Per Habitat	
Habitat	Monitoring Frequency
Scrub Bufferzone	Years 1, 2, 4, 10
Trees	Years 1, 2, 4, 10
Native and ornamental Planting	Years 1, 2, 4, 10
Hedgerows	Years 1, 2, 4, 10
Amenity Grassland	Years 1, 2, 3, 7, 10

- 7.3 The progress and condition of the retained and newly created habitats, as listed in Table 1, will be assessed by a suitably experienced ecologist.
- 7.4 If a habitat type is declining or not achieving a suitable condition, the appointed ecologist must implement management practices that improve the habitat, following an investigation as to why the habitat is not flourishing, such as more seed sowing, different seed mixture, plug plants, removal of scrub or competitive ruderal/grass species.



8.0 CONTINGENCIES

- 8.1 The work will be managed and monitored using the on-site personnel with supervision from the ecologist.
- 8.2 If an active bird nest is found during the works, work will stop, and the ecologist will be contacted. A 4metre buffer zone will be implemented around the active nest and no disturbance will take place to the nest. Once the nest is deemed inactive (i.e. once the chicks have fledged) then work can commence.
- 8.3 If any part of the landscaping fails or is inadvertently damaged, then the habitat will be re-created immediately, such as sowing more species/replanting.
- 8.4 Any non-native invasive species found on the site should be eradicated as soon as possible using a suitable methodology. Such as herbicides or digging up and either burying or removal from the site, depending on the species and extent of spread of the plant.

9.0 ADDITIONAL BIODIVERSITY ENHANCEMENTS

Bat Boxes

- 9.1 The following bat boxes will be provided on the site, to provide roosting habitat for crevice-dwelling bats such as Common Pipistrelle *Pipistrellus pipistrellus*:

- 15x Schwegler 2F Bat Box (or equivalent).

The bat box will be positioned onto the retained mature trees (see Appendix C at the back of this document). The bat boxes will be positioned on the south-facing elevations, at a minimum height of 4 metres.

Bird Boxes

- 9.2 The following bird boxes will be erected on the site to provide suitable nesting habitat:

- 10x Schwegler 1B General Nest Box (or similar).
- 6x Schwegler 9A House Martin Nest Box (or similar)
- 6x Schwegler SP1 Sparrow Terrace

The bird boxes will be positioned on the new buildings at least 2 metres off the ground (see Appendix C at the back of this document). The boxes will not be positioned facing south.

Sensitive Lighting

- 9.2 No specific lighting proposal for the site have been produced, but it can be assumed that lighting will be introduced as street lighting, in association with each property and potentially along the footpath in the greenspace on site.
- 9.3 It is important that potential bat and bird foraging routes are protected from artificial lighting which would impact on the flight patterns of the bats and birds. To this effect, it is recommended that artificial lightspill is no greater than 3 Lux on these habitats. On



site the potential bat foraging habitats are the boundary hedgerows and trees, the buffer zone and the greenspace in the south-west of the site.

9.4 There are a number of methods to ensure that artificial lightspill is no greater than 3 Lux. The latest guidance from the Institute of Lighting Professionals (ILP, 2018) suggests the following measures for the installation of bat-sensitive lighting on the site:

- All luminaires should lack UV elements when manufactured. Metal halide & fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

APPENDIX A MANAGEMENT TASKS AND WORK SCHEDULE

Habitat	Management Tasks, Work Schedule														
	Task	Timing of Works Restrictions												Constraints	Details
		J	F	M	A	M	J	J	A	S	O	N	D		
	Annual cutting vegetation suitable for nesting birds: - Hedgerows - Trees - Introduced shrub - Native Scrub Buffer Zone													All Nesting Birds	Vegetation may be cut between March and September, but a nesting bird survey will be required immediately prior (within 24 hours) to the works commencing.
Amenity Grassland	Creation of amenity grassland – removal of topsoil, scarification of the soil, sowing seeds and watering.													No specific species restrictions	Should any protected species be found during the management, then works should stop and an ecologist be contacted for advice.
	First cut once the grassland reaches 100mm, cut to 50mm. Second cut once the grassland reaches 75mm, cut the top third of the grassland.													No specific species restrictions	Should any protected species be found during the management, then works should stop and an ecologist be contacted for advice.
	On-going management – Regular mowing cut to maintaining a 50-100mm height and the arising removed from the site to prevent adding nutrients to the soil.													No specific species restrictions	Should any protected species be found during the management, then works should stop and an ecologist be contacted for advice.
Tree, Hedgerow, Native Scrub and Ornamental Shrub	Preparing the soil and planting new specimens.													All Nesting Birds	Vegetation may be cut between March and September, but a nesting bird survey will be required immediately prior (within 24 hours) to the works commencing.
	Managed with an annual cut in the winter encourage bushy growth and keep the habitat edges defined. The cut material should be removed from the site.													All Nesting Birds	Vegetation may be cut between March and September, but a nesting bird survey will be required immediately prior (within 24 hours) to the works commencing.
	Once planted and backfilled, the tree and shrubs will be well-watered, and all weeds removed around them. Newly planted trees will be fitted with stakes and mulched.													No specific species restrictions	Should any protected species be found during the management, then works should stop and an ecologist be contacted for advice.
	The hedgerows should be managed when required to keep the footpaths clear and accessible to the desired height and width.													All Nesting birds	Vegetation may be cut between March and September, but a nesting bird survey will be required immediately prior (within 24 hours) to the works commencing.
Monitoring	The following habitats will be monitored annually for 10 years: - Native Scrub Buffer Zone - Amenity Grassland - Hedgerows - Scattered Trees													No specific species restrictions, although care should be taken when surveying the more ecologically valuable habitats where protected species may be encountered.	The purpose of the monitoring is to assess if these habitats have become established and to provide recommendations on changes to the management plan to increase the quality of these habitats if required, advise from suitable professionals should be sought as/if required.



APPENDIX B WILDLIFE CORRIDOR MAP & STEPPINGSTONE HABITAT MAP



APPENDIX C SHOWING THE INDICATIVE LOCATIONS OF THE BAT AND BIRD BOXES

