



Clayton Ecology

Biodiversity Enhancement Plan Manor Hill Farm Desford

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SUMMARY

This report has been prepared by Clayton Ecology Ltd on behalf of the Site owner: Preston Feedstocks Ltd. The report provides a biodiversity enhancement plan of Manor Hill Farm, Leicester Lane, Desford, Leicestershire LE9 9JJ.

The report has been prepared in order to address the requirements of the local planning authority who require a biodiversity enhancement plan for the application site.

This enhancement plan sets out works to enhance the biodiversity value of the site.

It provides details of 175 trees to be planted, which are considered to have the highest biodiversity gains for the site.

Alongside the planting of 175 trees onsite, additional biodiversity enhancements include 2x Blue tit boxes, 2x Great tit boxes, 2x Robin type boxes, and 3x bat boxes.

It also specifies mitigation to limit the effects of any artificial lighting on Site in regards to bats. It is however noted that no additional planned lighting scheme is currently proposed.

1. INTRODUCTION

This report has been prepared by Clayton Ecology Ltd on behalf of the Site owner: Preston Feedstocks Ltd. The report provides biodiversity enhancement plan of Manor Hill Farm, Leicester Lane, Desford, Leicestershire LE9 9JJ.

This enhancement plan sets out works to enhance the biodiversity value of the site.

The proposal is to create a 50m x 100m asphalt pad, an area of artificial surface and changes to the pathway/road on current arable land.

The location of the survey site in relation to wider environment is provided in Figure 1 below:



Figure 1: The area to be impacted highlighted in red, satellite imagery courtesy of Google Earth.

2. LEGISLATION APPLICABLE TO THE SPECIES WITHIN THIS DOCUMENT

2.1 Bats

All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

The legislation makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat. It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

2.2 Breeding Birds

Under the Wildlife and Countryside Act 1981 (as amended), all native birds and their nests, whilst in use, are protected from harm, disturbance or destruction during the breeding season. To avoid conflict, development work that could affect breeding birds should be timed to take place outside of the breeding season, variable between March and September. Note that a nest is protected from the beginning of its construction until the young have fledged and left the nest.

3. SITE DESCRIPTION

The area to be impacted is generally square in shape, situated to the east of Leicester Lane (B582). To the north of the Site is a series of commercial buildings, and residential dwellings dominate the landscape to the west. All other directions are bordered by agricultural land.

The impact Site is approximately 1.21 ha.



Figure 2: The area to be impacted.

3.1 Habitats present

3.1.1 Temporary grass and clover leys- c1b

The majority of the Site consists of temporary grass and clover leys, planted in rows.



Photograph 1: Temporary grass and clover leys looking south west from the upper north east

3.1.2 Modified grassland – g4

Modified grassland represents the smallest area of the Site, which is a small section at the north west.



Photograph 2: An example of the of sward within the small section of grassland.

3.1.3 Artificial unvegetated; unsealed surface – u1c

There is a worn road with a substrate of MOT Type 1 or similar running from the north of the Site to the south.

4. IMPACTS UPON BATS, NESTING BIRDS AND HEDGEHOG/BADGER

4.1.1 Bats

The Site may require additional lighting which would likely impact habitat along the south-west boundary considered suitable for bat foraging and commuting.

Exterior lighting has been shown to negatively impact upon emergence times and foraging opportunities for bats thereby reducing their fitness and ability to survive (Stone, Jones & Harris, 2009). Mitigation is therefore included later in this report.

4.1.2 Nesting Birds

There is potential habitat for breeding birds within the impact zone, provided by the grass ley. All works should therefore be undertaken outside of the breeding bird season, typically March to September.

In the event that an active bird nest is found, it must be retained in situ and undisturbed until no longer in active use. A nest is classed as active when it contains eggs or chicks and when it is being built.

The potential impact upon nesting birds from the proposals are considered to be negligible if all works are undertaken outside of the breeding bird season. If works are required to be undertaken within this period a suitably qualified ecologist must be consulted.

4.1.3 Hedgehog, Brown hare and Badger

There is potential for hedgehog, brown hare and badgers to be present on the site. Whilst the impact may be negligible, it is recommended that best practice actions are undertaken during the construction activities.

These mitigation actions comprise simply that if any trenches are dug during works activities which are to be left open overnight, then they must be left with a sloping end or ramp (such as a scaffold plank) to allow any mammals to escape.

Trenches should be checked before infilling at the beginning of each working day. Any hedgehogs located within the site during the works should be carefully placed into a receptacle and translocated to a safe environment outside of the area of works.

5. MITIGATION AND ENHANCEMENT STRATEGY

Overview

The following strategy details proposals to enhance the habitat on Site for wildlife.

5.1.1 Tree planting

The Woodland Trust (2024) states: "Typical planting densities include a tree every 3 metres (1,100 trees per hectare) or a tree every 2.5 metres (1,600 trees per hectare)". A minimum of 175 small trees are to be planted at the west of the Site as shown in Figure 3 below. This is in line with typical planting densities of one tree every 3 metres (1,100 trees per hectare).

Trees should be sourced from a local reputable supplier.



Figure 3: The proposals for the impact Site.

5.1.2 Bats

The design of the lighting for the development should aim to avoid light pollution and spillage onto bat foraging and commuting habitat on the south-west boundary. Any external lighting should be as per 'Bats and Artificial Lighting at Night' (Institute of Lighting Professionals 2023). Light sources, lamps, LEDs and their fittings come in a variety of different specifications which a lighting professional can help to select. The following should be considered when choosing luminaires and their potential impact

on Key Habitats and features. The elements of this mitigation best practice are as follows:

- All luminaires should lack UV elements when manufactured. Metal halide, compact 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 light source (2700 Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

It is recommended that all lighting must follow the guidance provided above, and in addition no lighting shall directly illuminate the south-west boundary of the Site.

It should be noted that no additional planned lighting scheme is currently proposed for the site.

5.1.3 Bird nest box scheme

There are no large mature trees within the red line boundary of the site, therefore trees to south around the riparian zone have potential to support nest boxes. This area is also within the ownership of the client.

All boxes must not face towards the south. This is to avoid extreme temperatures during hot sunny weather in such locations, which will invariably be fatal to nestlings.

Number of boxes specified for each species is in line with typical territory sizes in relation to the development site area, along with a consideration of the solitary or colonial nesting behaviour of each species.

Great and Blue Tits

Great tits and blue tits naturally nest in tree holes so the scarcity of older trees around the development has the potential to cause a lack of suitable nest sites. These species readily adopt nest boxes. A minimum of two boxes will be provided, spaced apart upon the trees, see Appendix 1.

The proposal is for a timber nest box following a standard design. There will be 2x of these installed with 25 mm holes to provide for the smaller of the tit species and likewise a further 2x with 32 mm holes to provide for great tit.



Figure 4- example of the bird nest box proposed for great and blue tit

These boxes will be placed at a height of 1.8 metres on posts within the site in the locations shown in Appendix 1, but with the exact placement and orientation decided at the time by the ecologist.

These boxes may also attract a number of other species such as coal tit and marsh tit.

Other woodland species may also be attracted to this type of box.

Robin

Robins usually nest in dense hedgerows, bank-side hollows, often amongst the cover of ivy or creeper and occasionally in buildings.

They will take to nest boxes and an open-fronted design is usually specified. Siting of the box is critical, to ensure that it is well hidden from, and inaccessible to, potential predators.

Two open-fronted nest boxes will be installed located sufficiently distant to avoid issues with regards to conflicts between this territorial species. The placement will be in dense cover, such as within the riparian trees. This nest box may also attract other species such as spotted flycatcher or wren.

The recommended box is the timber open fronted box as indicated below.



Figure 5 - example of the open fronted nest box proposed.

5.1.4 Bats

Bats will forage in the wider countryside and the habitats surrounding the site are ideal for many of the bat species found in this part of county; within an extensive tract of semi mature riparian deciduous tree lines and large unmanaged hedgerows.

As there is no bat roosting habitat on the site currently, the provision of bat roost features within the riparian zone outside of the site will provide for a new wildlife feature and as such a biodiversity enhancement. The enhancement proposal is aimed at targeting the species most likely to utilise the treelines close to the riparian zone, the pipistrelle bats.

Potential roost provision for pipistrelle bats will be achieved by the installation of three Kent style wooden bat boxes along the southern aspect of the riparian zone.

Whilst the design of this habitat feature is primarily aimed at pipistrelle bats, the placement of the Kent style bat box is such that they could also benefit other species found in this part of the country, including several of the *Myotis* bat species. The type of bat tube recommended for this purpose is the wooden Kent style bat box.

A total of 3 of these boxes will be installed within the riparian zone.



Figure 6 - example of the Kent style bat box.

Locations for the bat boxes are shown in Appendix 1.

6. INSTALLATION AND MAINTENANCE

The boxes specified in section 5 will be installed under the supervision of an appropriately experienced ecologist.

No routine maintenance will be required for the bat boxes.

Cleaning/maintenance should be undertaken from October to January, outside of the nesting bird season. The old nesting material which accumulates after every breeding season needs to be cleaned and the droppings from the earlier season removed. This can be undertaken without a specific licence, although in the unlikely event that active nests are encountered, these should remain unaffected until all chicks have fledged.

7. REFERENCES

Institute of Lighting Professionals, 2023. Bats and artificial lighting at night, Available at: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Stone, E.L., Jones, G. and Harries, S., 2009. Street Lighting Disturbs Commuting Bats, *Current Biology*, 19 (13), pp. 1123-1127.

Woodland Trust, 2024. Morewoods Application Guidance – How should I plant my trees. at <https://www.woodlandtrust.org.uk/plant-trees/trees-for-landowners-and-farmers/morewoods-faqs/>

8. APPENDIX 1: SHOWING THE ADDITIONAL BAT AND BIRD BOXES

