

Darwen Hollins Papermill

Extended Phase I Habitat Survey and Bat Roost Potential Survey

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1.0 INTRODUCTION

1.1 Terms of Reference

Gleeson Developments Ltd commissioned SLR Consulting Ltd to undertake ecological surveys of a development plot at the Darwen Hollins Papermill in Darwen, Lancashire. The appraisal includes an extended Phase I habitat survey and bat roost potential survey as well as a Habitat Suitability Assessment for great crested newt of any accessible ponds within 500 m of the site boundary. The site itself is centred on National Grid Reference SD 688 235.

The site includes an area of land that is currently dominated by hard standing, with small areas of species poor, semi-improved grassland and woodland. It is proposed that a total of 151 housing units be constructed here. Appendix C provides the proposed site layout.

1.2 Site Context

The site is located to the west of Hollins Grove Street and Lower Eccleshill Road and to the east of the Crown Paint Factory. The site is located to the northeast of the town of Darwen in Lancashire. It has been cleared of all significant site buildings and consists primarily of hard standing and small areas of species poor, neutral grassland and a belt of woodland which is located to the southwest. A small former allotment, located to the south of the woodland belt is also included within the development site.

A variety of commercial properties and associated infrastructure surround the site on all sides. Beyond this, the surrounding landscape is semi-rural with fields to the east and residential properties to the west.

2.0 RELEVANT LEGISLATION & POLICY¹

2.1 Legislation

2.1.1 *Habitat Regulations*

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb² wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Special Areas of Conservation (SAC) are strictly protected sites, designated under the Habitats Directive, which contain habitats and/or species (excluding birds) considered to be most in need of conservation at a European level.

Legal Protection for Bat Species

In England, all British bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2010, which defines European protected species, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. These pieces of legislation combine to give substantial protection to bats and their roost sites, making it an offence to:

- Deliberately/ intentionally kill, injure or take a bat.
- Recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not).
- Deliberately/ intentionally or recklessly disturb³ bats while they are occupying a structure or place that they use for shelter or protection

2.1.2 *Wildlife & Countryside Act*

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

¹ Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

² Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

³ Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

Sites of Special Scientific Interest (SSSI) are designated under this Act.

Special Protection Areas (SPA) are strictly protected sites, designated under the Birds Directive, for rare and vulnerable birds and for regularly occurring migratory species.

All six native reptile species are legally protected in England through their inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); the four common and widespread reptile species (adder *Vipera berus*, grass snake *Natrix natrix*, slow worm *Anguis fragilis* and common lizard *Zootoca vivipara*) are protected against killing, injuring and sale.

2.1.3 Natural Environment & Rural Communities Act

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

2.2 Policy

2.2.1 National Planning Policy Framework (NPPF)

The NPPF states that the planning system should contribute to and enhance the natural and local environment by:

- Recognising the wider benefits of ecosystem services; and
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Other key principles of the NPPF relating to biodiversity are:

- The conservation of International and National statutorily designated sites;
- Protection of ancient woodland and veteran trees;
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure;
- The preservation, restoration and recreation of priority habitats and ecological networks; and
- The recovery of priority species populations.

2.2.2 Biodiversity Action Plans

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

3.0 METHODOLOGY

3.1 Desk Study

The Lancashire Ecological Records Network (LERN) was contacted for archive ecological data relating to locally designated sites⁴ and protected species⁵ within 2 km of the Site boundary. Aerial images of the site were viewed using Google Maps. Those records more than ten years old are considered out of date and have only been included within the report to add context where necessary. Appendix A includes the desk study data, displayed in map form.

3.2 Site Survey

3.2.1 *Extended Phase 1 Habitat Survey*

An extended Phase I Habitat Survey of the Site was undertaken on 17th November 2016 by SLR Consulting Ltd. The survey followed Phase I habitat survey methodology, as detailed by the Joint Nature Conservation Committee⁶, and incorporated an examination of the Site's potential to support fauna (particularly legally protected or otherwise notable species). In addition, searches were undertaken for invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). A digitised map of the general habitat classifications is provided in Drawing 6. Target Notes (TN) are described and illustrated within the text. The potential for habitats to support protected and notable species was also considered.

3.2.2 *Great Crested Newt Habitat Suitability Assessment*

One water body was found during the study of aerial images and maps which formed part of the desk-based study. This was a small reservoir of interconnected lagoons located 170 m to the west of the Site.

Where accessible, the ponds were subject to a great crested newt Habitat Suitability Index (HSI) assessment⁷. The results of the HSI assessment are shown in Appendix B.

⁴ Designated sites include those protected under national or international legislation, such as Sites of Special Scientific Interest (SSSI), and local sites afforded protection under the planning system, such as County Wildlife Sites (CWS) and Regionally Important Geological and Geomorphological Sites (RIGS).

⁵ This includes species protected under international and national legislation as well as species included in the UK and/or local Biodiversity Action Plans, Red Data Book taxa, and Red or Amber listed birds of conservation concern.

⁶ Joint Nature Conservancy Council (2007) *Handbook for Phase 1 habitat survey (2010 revision)*. JNCC, Peterborough, UK.

⁷ Oldham, R.S., Keeble, J., Swan, M.J.S., and Jeffcote, M. (2000) *Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*)*. Herpetological Journal 10: 143-155.

Great crested newt (*Triturus cristatus*) HSI scores are calculated using ten parameters, to assess the likely value of any given water body to support breeding great crested newt. The parameters used for the assessment are: site location; pond area; frequency of pond drying; water quality; shade; waterfowl; fish; presence of other ponds in the area; terrestrial habitat; and macrophyte communities. Each parameter scores a value of between 0.01 and 1. These scores are then multiplied and then 'rooted' to produce a geometric mean score, of between 0 and 1. The following categorical scale is then used to estimate the overall suitability of the water body concerned:

HSI score	Pond suitability for GCN
<0.5	Poor
0.5-0.59	Below average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

Generally, ponds assessed as being of 'below average' or better (i.e. having a HSI score of 0.5 or above) are then subject to great crested newt presence/ absence surveys, to establish whether or not great crested newt are present.

3.2.3 Preliminary Ground Level Assessment of Trees for Bat Roost Potential

In compliance with best practice guidelines (Collins, 2016), a preliminary roost assessment of the within the Site boundary was undertaken. A general assessment of the residential properties surrounding the site was also made. The aim of the survey was to determine the actual or potential presence of bats, and the need for further survey and/ or mitigation.

In respect of trees, the survey comprised a detailed inspection of the exterior of the trees from ground level to look for features that bats could use for roosting (Potential Roosting Features or PRFs).

PRFs searched for included:

- Woodpecker holes;
- Rot holes;
- Hazard beams;
- Other vertical or horizontal cracks and splits in stems or branches;
- Partially detached, platey bark;
- Knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar;
- Man-made holes or cavities created by branches tearing out from parent stems;
- Cankers in which cavities have developed;
- Other hollows or cavities, including butt-rots;
- Double-leaders forming compression forks with included bark and potential cavities;
- Gaps between overlapping stems or branches;
- Partially detached ivy with stem diameters in excess of 50mm; and,
- Bat, bird or dormouse boxes.

The following table, adapted from current best practice guidelines (Collins, 2016) was used as a guide to assess the potential suitability of the trees/ structures for roosting bats. Mature and semi-mature trees within, or adjacent to the site were assessed for their potential to support roosting bats, following the third edition of the Bat Conservation Trust's Good Practice Guidelines⁸. The criteria used for the assessment of potential roosting features (PRFs) in trees are provided in Table 3-1.

Collins, J (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London.

**Table 3-1:
Description of Categories of Bat Roosting Potential on Trees**

Category (Bat Potential)	Description
Negligible Potential	Trees with no suitable features. No cracks or crevices No ivy cover No deadwood in canopy or stem No decay cavities or hollows.
Low Potential	Trees with few suitable features noted below, only capable of supporting individual bats. Some small cracks or crevices Low ivy cover Deadwood in canopy or stem
Moderate Potential	Trees with several suitable features noted below, capable of supporting individual bats. Woodpecker holes Fractured limbs Large sections of loose or flaking bark Cavities/cracks/crevices either large in size or numerous in quantity Crossing and rubbing branches A hollow trunk, stem or branches Dense ivy cover with thick stems Tightly forked branch unions Bat, bird or dormouse boxes Mature, well established, profuse and thick epicormic growth.
High Potential	Trees with multiple highly suitable features noted above, and/or capable of supporting larger roosts.
Confirmed Bat Roost	Bats Bat droppings Scratch marks or staining Desk study record of roost.

(Table adapted from the 3rd Edition of the Bat Conservation Trusts Survey Guidelines, Table 4.1.)

3.2.4 Preliminary Bat Roost Assessment of Structures

An assessment of buildings on site was made following best practice guidelines (Collins, 2016). The aim of the survey was to determine the potential for presence of bats, and the need for further survey and/ or mitigation. The guidelines for assessing the value of any PRF are provided in Table 3-2.

Table 3-2: Guidelines for Assessing the Potential Suitability of Structures for Bats

Suitability	Description
	Roosting habitats
Negligible	Negligible habitat features likely to be used by roosting bats.
Low	A structure of sufficient size and age to contain PRFs but with none seen from the ground, or feature seen with only very limited roosting potential.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed roost	Bats discovered roosting within the structure, or recorded emerging from/ entering the structure at dusk and/ or dawn. Structure found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.

3.3 Limitations

3.3.1 Desk Study

Desk study data is not likely to be exhaustive and is intended mainly to set a context for the study.

3.3.2 Site Survey

The site visit was undertaken outside of the optimal time for botanical surveys, however this is not considered a significant limitation due to the species poor nature of the habitats on site.

The allotments were not accessible during the survey. This is not considered a significant limitation as a visual assessment of the habitats within the allotments could be made from the perimeter.

3.4 Quality Assurance & Environmental Management

The Ecologist who undertook the extended Phase I habitat survey is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), and follows the Institute's code of professional conduct when undertaking ecological work.

The Ecologist holds Natural England survey licences for great crested newt, and bats.

4.0 RESULTS

4.1 Desk Study

4.1.1 Site Designations

There are no designated sites within, or adjacent to the Site. The nearest site is Lower Eccleshill Marsh Biological Heritage Site (BHS). It is a 0.64 ha site located 550 m to the northeast and contains an area of bay willow (*Salix pentandra*) dominated carr woodland, which is a scarce vegetation community in Lancashire. The Eccleshill Old Ironworks BHS (8.12 ha) is located adjacent to Lower Eccleshill Marsh, separated by the railway line. This site supports a mosaic of habitats, including bare ground, calcereous grassland tall herb and scrub; all of which have developed on the former ironwork slag. Brookside BHS is located 700 m to the south and is a 0.62 ha site. This site contains the nationally rare narrow small reed (*Calamagrostis stricta*).

Two Local Nature Reserves (LNR) are located with 2km of the Site, the nearest of these is Sandyhurst Woods LNR, which is located 510 m to the south east. Sandyhurst Woods LNR also contains a sizable area of Ancient woodland.

All designated sites within 2 km are illustrated on Drawing 1 in Appendix A.

4.1.2 Protected Species Records

There are no existing records of protected or notable species within the site boundary.

There exist records for common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and noctule (*Nyctalus noctula*). All these records were located 500 m to the southwest and were logged in 2014.

A single record of water vole (*Arvicola amphibius*) was recorded 1.5 km to the southwest from 2008.

Records of common frog (*Rana temporaria*), common toad (*Bufo bufo*) and smooth newt (*Lissotriton vulgaris*) have been recorded within 2 km of the site. The nearest of these being a record of toad from 2011, located 600 m to the east. However, there are no records of reptile species or great crested newt made within the last ten years.

A total of 13 Schedule 41 bird species have been recorded within the 2 km study area, although only four of these have been recorded within the last ten years. These include lesser redpoll (*Acanthus cabaret*), spotted flycatcher (*Muscicapa striata*), house sparrow (*Passer Domesticus*) and lapwing (*Vanellus vanellus*).

4.2 Habitat Descriptions

The habitat types noted within the site boundary are illustrated on Drawing 6.

Hard standing

The majority of the Site consists of hard standing, composed of concrete pads and blacktop roadways (Plates 1 and 2). All areas of hard standing are in good condition and do not support any ephemeral vegetation. This habitat type has no significant nature conservation value.



Plate 1: TN1- The area of hard standing. This habitat type dominates the majority of the site.



Plate 2: TN10- Extent of hard standing. View looking south.

Semi-improved Grassland

There are two areas of species poor semi-improved grassland on the site (Plates 3 and 4). They are both dominated by common bent (*Agrostis capilaris*), with creeping buttercup (*Ranunculus repens*) and ragwort (*Senecio jacobaea*). Buddleia (*Buddleia davidii*), nettle (*Urtica dioica*), bramble (*Rubus fruticosus*) and birch saplings (*Betula pendula*) were also common within the sward. Intermixed within the sward are piles of rubble, originating from the demolition of the site buildings.



Plate 3: TN2- The area of grassland looking towards the belt of woodland on the southern side of the Site.



Plate 4: TN11- Species poor, semi-improved grassland along the northern boundary of the site.

Broad-leaved Woodland

The belt of plantation broad-leaved woodland is located along the south and western side of the development and separates the former allotment from the main development site (Plate 5). The woodland is composed largely of sycamore (*Acer pseudoplatanus*), birch (*Betula pendula*) and goat willow (*Salix caprea*). The trees are relatively young and many are multi-stemmed specimens. The woodland ground layer is of limited diversity with bramble, broad buckler fern (*Dryopteris dilatata*) and soft rush (*Juncus effuses*) commonly occurring.



Plate 5: TN3- Plantation broad-leaved woodland to the west of the site.

Flowing Water

The land slopes down to the west, leading to a small stream that separates the rest of the site from the former allotment area (Plate 6). The stream is heavily shaded and supports no emergent vegetation: most probably as a result of scouring during heavy rainfall. It is approximately 40 cm in width and had a water depth of 20 cm at the time of survey.