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PRELIMINARY ECOLOGICAL APPRAISAL

**LAND AT GANNOW LANE
BURNLEY
LANCASHIRE**

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LAND AT GANNOW LANE BURNLEY LANCASHIRE

A report for

Avalon Chartered Town Planning

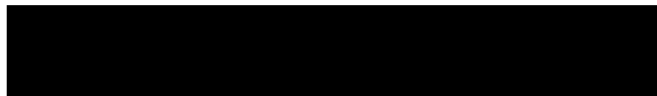
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TABLE OF CONTENTS

CONTENTS	PAGE NO.
PART 1 INTRODUCTION	
1.1 Reasons for Study.....	1
1.2 Site Location.....	1
1.3 Survey Methodology.....	1
1.4 Survey Constraints.....	2
PART 2 SURVEY RESULTS	
2.1 Desk Based Study.....	4
2.2 Executive Summary.....	4
2.3 Extended Phase 1 Survey.....	5
2.4 Preliminary Bat Roost Survey.....	9
2.5 Water Vole Survey.....	13
2.6 Otter Survey.....	16
2.7 Badger Survey.....	17
2.8 Birds.....	18
2.9 Great Crested Newt.....	18
PART 3 SUMMARY EVALUATION & RECOMMENDATIONS	
3.1 Summary Evaluation of Survey Findings.....	19
3.2 Recommendations.....	22

REFERENCES

APPENDIX

Map 1: Extended Phase 1 Habitat Map

Map 2: Preliminary Bat Roost Survey Map

PART 1 INTRODUCTION:

1.1 REASONS FOR STUDY:

PENNINE *Ecological* have been commissioned by Avalon Town Planning and Architectural Consultancy, to undertake a Preliminary Ecological Appraisal (PEA) of land at Gannow Lane, Burnley, Lancashire.

The study also includes a full evaluation of the ecological significance of the survey findings, a statement of potential impacts, and recommended mitigation/precautionary measures where appropriate.

The surveys are required due to a proposal to develop a former paintworks (demolished) and redundant construction site for housing.

1.2 SITE LOCATION:

The study area is situated on land north of Gannow Lane, Rose Grove, Burnley, BB12 6JW.

Central Ordnance Survey grid reference SD 8173 3267

The extent of the survey is shown on Map 1 in the appendix.

The development is shown on plans submitted in support of the application, those plans are not reproduced in this report.

1.3 SURVEY METHODOLOGY:

1.3.1 Extended Phase 1 Habitat Survey:

An Extended Phase 1 Habitat Survey (*Nature Conservancy Council 1990*) of the study area was undertaken on 24th April 2020. The site's habitats were fully mapped and higher vascular plant species were recorded and given abundance values according to the standard DAFOR scale, where:

D = Dominant
A = Abundant
F = Frequent
O = Occasional
R = Rare

Where appropriate these values can be prefixed by the letter L (locally) or V (very), to provide more subtle biogeographical data.

1.3.2 Preliminary Bat Roost Survey:

All British bats and their roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2010.

The preliminary bat roost survey was undertaken on the 24th April 2020 following the methodology outlined in *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* Collins, J. Bat Conservation Trust (2016)

The surveys included non-intrusive surveys of the buildings and trees on the site in order to evaluate their bat roost potential.

The surveys were undertaken by an experienced preliminary assessor of bat roost potential.

1.3.3 Water Vole Survey:

The water vole survey was undertaken on the 24th April 2020 following the methodology outlined in the *Water Vole Mitigation Handbook*. Strachan et al (2016).

The survey included standard searches for animals, burrows, latrines, feeding stations and runs on the edge of the lake.

The survey was undertaken within the optimum period for water vole survey, during a period of prolonged and settled warm weather.

1.3.4 Otter Survey:

The otter survey was undertaken on the 24th April 2020 following the standard methodology outlined in *The New Rivers & Wildlife Handbook*. RSPB (2001)

The survey included standard searches for spraint, footprints, couches/hovers and holts on the canal edge and in the proposal site itself.

The survey was undertaken during the optimum period for otter survey.

1.3.5 Badger Survey:

The badger survey focused on land directly affected by the proposed development, and within 30m where accessible.

The survey used standard techniques for establishing the use of the site by badger, and includes searches for evidence of badgers including:

- Setts
- Pathways
- Footprints
- Latrines
- Foraging areas
- Scratching posts

1.3.6 Other Species:

In addition to the above, general assessments of the suitability of the site to support breeding birds and great crested newt were also undertaken as part of this study.

1.3.7 Surveyor Experience:

The surveyor and author of this report, Ian Ryding, has over 32 years experience in ecological survey and evaluation. Key skills include the following.

- Extended Phase 1 Habitat Survey/Preliminary Ecological Appraisal and National Vegetation Classification Survey.

- Highly proficient field botanist, including some difficult plant groups.

- Mammal surveys including surveys for badger, water vole*, otter*, brown hare and preliminary bat roost survey.

- Breeding and wintering bird survey.

Extensive experience in great crested newt (GCN) survey, evaluation, licensing and mitigation.
Natural England Class Licence WML-CL08 held.

Ecological Evaluation and Impact Assessments in association with large scale commercial development and civil engineering.

Proof of evidence in respect of nesting birds at public inquiry.

*Over 250km of river reaches surveyed in England.

1.4 SURVEY CONSTRAINTS:

1.4.1 Extended Phase 1 Habitat Survey:

There were no constraints to survey.

1.4.2 Bat Survey:

The search for potential roosts was not constrained.

1.4.3 Water Vole Survey:

There were no significant constraints to survey.

1.4.4 Otter Survey:

There were no significant constraints to survey.

1.4.5 Badger Survey:

There were no significant constraints to survey.

1.4.6 Other Species:

There were no constraints to the evaluation of the site in respect of breeding birds and great crested newt.

PART 2 SURVEY RESULTS:

2.1 DESK BASED STUDY:

It was decided in advance of survey that the decision whether or not to request ecological data from Lancashire Environment Record Network (LERN), would be based on the findings of the field survey.

A study was undertaken of the land in 2013 by Ecology Services* and revised in 2015 in relation to a proposed housing development on the site, which revealed no protected species records within 500m, no non-statutory sites with 750m, and no statutory sites within 1km.

The site is urban and given the lack of data generated during the 2015 desk study, LERN were not consulted again regarding the new proposals as it is considered highly unlikely that records would be returned that would significantly influence the evaluation of the site in respect of its biodiversity.

Desk based studies were undertaken to establish the presence of ponds within a 250m radius of the site, as part of a scoping study relating to great crested newt (GCN)

In addition, the Multi Agency Geographical Information Centre www.magic.gov.uk was referred to in respect of the current status of statutory sites within 2km.

2.2 EXECUTIVE SUMMARY:

The key findings of the site survey are outlined below.

The site has no statutory or non-statutory designations.

Lower House Lodges Local Nature Reserve (LNR) is located 870m (approx.) west of the site, there are no other statutory wildlife sites within 5km of the site

Lower House Lodges Biological Heritage Site (BHS) is located 870m (approx.) west of the site.

The site is largely composed of disturbed land associated with a former unfinished housing development on the site.

All semi-natural habitats on the site are very common habitats of 'site' value only that includes semi-improved poor grassland, dense scrub and several small scattered trees and shrubs.

The site directly abuts the Leeds and Liverpool Canal on its northern boundary.

There are no S41* habitats on the site.

There are no known S41 species associated with the site.

None of the trees have at roost potential above 'negligible' level.

The part-finished houses on the site and the control buildings by the telecommunications mast have 'negligible' roost potential only.

The trees and shrubs on the site provide nesting sites and foraging for a range of common birds not exceeding 'local' i.e. Parish interest.

The treelines and the canal frontage provide limited foraging area for bats locally.

There is no evidence of current/historic use of the site by badger.

There canal has hard stone revetments along the site frontage no evidence of water vole occupation was found along the canal section surveyed.

No evidence of use of the site by otter was noted and no potential holt sites are present. Lying up areas are restricted due to human disturbance.

The are no impacts on GCN or its habitat generated by the proposals.

2.3 EXTENDED PHASE 1 HABITAT SURVEY:

2.3.1 General Description:

The site of the proposed development is located between Gannow Lane on its south side and the Leeds and Liverpool canal on its north side.

The site once formed the Dexter Paints factory which is now demolished, and the land largely cleared.

The land has been partly developed relatively recently, however, construction appears to have been abandoned with only two properties constructed on the site.

The levelled areas of the site are composed of hardstanding semi-vegetated by typical ephemeral 'weeds', while the land to the north is composed of a series of vegetated mounds containing semi-improved grassland, dense/scattered scrub and occasional early-mature goat willow.

There is a telecommunications mast and control buildings within a compound in the north-east corner of the site.

The land to the east is a service road to an industrial area, while the land to the west is residential.

2.3.2 Extended Phase 1 Habitat Survey Target Notes:

Survey locations, Target Notes and the proposed working area locations are shown on Map 1 in the Appendix. All species nomenclature follows Stace, C. (1996) 'New Flora of the British Isles' – definitive English names.

Target Note 1:

An open area of semi-vegetated hardstanding that was levelled following demolition of the former paint works, and then modified during the residential development of the site, now abandoned.

The area has negligible floristic interest and supports a typical range of ephemeral/short perennial herbs and grasses.

Species include white clover, red clover, dandelion sp., perennial rye-grass, lesser trefoil, prickly sow-thistle and dock spp.

Target Note 2:

An area of semi-vegetated area of hardstanding where the vegetation is more well developed and slightly denser than that in Target Note 2. The area includes the mounds of spoil on the northern side of the site.

Occasional scattered willow saplings are present in this area.

A list of species recorded and their abundance is provided below.

Species:	Abundance:
Red fescue	LD
Perennial rye-grass	LA
Lesser trefoil	LA
Meadow-grass sp.	LA
Yorkshire-fog	LA
Dock spp.	LA
Red bartsia	VLA
Dandelion sp.	F
Daisy	F
Common bent	LF
Creeping bent	LF
Red clover	LF
Common vetch	VLF
Field horsetail	VLF
Colt's-foot	VLF
Spear thistle	O
Soft-rush	O
American willowherb	O
Groundsel	O
Meadow buttercup	O
Tufted hair-grass	VO
Jointed rush	VO
Common mouse-ear	VO
Great willowherb	VO

Target Note 3:

An area of dense bramble scrub with very locally dominant goat/grey willow and very occasional laurel.

Several early-mature goat willow and very occasional sycamore are present on the eastern side of this area.

Very occasional male-fern and lady fern occur in the northern portion of this area.

Target Note 4:

A small area of semi-improved poor grassland in the north-west corner of the site.

The grassland is dominated by meadow foxtail with frequent Yorkshire-fog and cock's-foot.

A stand of mixed bramble, hawthorn and elder form the frontage with the canal here. A single holly is also present.

Target Note 5:

A linear marginal stand of reed sweet-grass along the margin of the canal. Water forget-me-not and water mint are abundant, great willowherb frequent, and hemlock water-dropwort occasional.

This area lies outside of the proposal site.

Photographs showing the general conditions on the site are provided below.

Site Photographs - Habitats:



Photograph 1: The semi-vegetated hardstanding described in Target Note 1.



Photograph 2: The semi-vegetated ground described in Target Note 2. Looking south from the mounds.



Photograph 3: The semi-vegetated mounds described in Target Note 2. Looking west.



Photograph 4: The dense bramble scrub described in Target Note 3. Looking north-west from the mounds.



Photograph 5: The willow-dominated scrub with early-mature goat willow described in Target Note 3. Looking north from the mounds.



Photograph 6: The semi-vegetated mounds described in Target Note 2 – looking south.



Photograph 7: The marginal fringe of reed sweet-grass on the canal described in Target Note 5.

2.4 PRELIMINARY BAT ROOST SURVEY:

2.4.1 Preliminary Bat Roost Evaluation:

There are three buildings on the site and several trees where preliminary bat roost survey was required.

The buildings and trees were surveyed from ground-level using close focusing Leica Trinovid 8x30 binoculars.

The features surveyed are described below.

Buildings:

There are three buildings on the site, two are new/part-finished houses that form part of a previous development, and the other, a control building associated with a telecommunications mast.

The location of the buildings is shown on Map 2 in the appendix.

B1:

A small detached bungalow with a tiled roof and cavity walls.

The building appears more or less complete and has doors and windows fitted.

The roof is in good condition with a dry ridge and dry verge system installed and effectively sealed from bat ingress.

There are UPVC soffits throughout with no gaps that could be accessed by roosting bats.

Overall, this is a well-sealed building with 'negligible' bat roost potential.

B2:

A detached bungalow with a tiled roof and cavity walls.

The building has no doors and windows fitted.

The roof is in good condition with a dry ridge and dry verge system installed and effectively sealed from bat ingress.

There are UPVC soffits throughout with no gaps that could be accessed by roosting bats.

Overall, this is a well-sealed building with 'negligible' bat roost potential.

B3:

A pair of single-storey control buildings associated with a tall telecommunications mast. The buildings are contained within a secure palisade-fenced compound.

The buildings are of modern/modular pre-formed, coated steel construction and sealed from bat ingress, and therefore have 'negligible' bat roost potential.

Trees:

The survey identified several trees and shrubs on the site where surveys were undertaken. For purposes of identification, these features were split into separate tree groups (TG) and are described individually below.

The location of the tree groups is shown on Map 2 in the appendix.

TG1:

A small group of early-mature goat willow within a small stand of younger willow scrub.

None of the trees in the group had any holes or fissures suitable for roosting bats and roost potential is therefore 'negligible'.

TG2:

A small stand of immature - early-mature sycamore in the north-east corner of the site.

None of the trees in the group had any holes or fissures suitable for roosting bats and roost potential is therefore 'negligible'.

TG3:

A group of single semi-mature whitebeam, goat willow and holly with no holes or fissures suitable for roosting bats.

Roost potential is therefore 'negligible'.

Foraging & Commuting Routes:

Foraging potential is very localised on the site and limited to the northern part of the study area adjacent to the trees and stands of scrub.

These areas are also linked to the Leeds and Liverpool canal which represents a potentially very good foraging area and commuting route for bats locally.

Foraging potential on-site is considered to be minor due to the limited areas available for foraging.

Therefore, based on the habitats available on the site and those available off-site in near vicinity, it is reasonable to predict that the extensive prime off-site foraging locations along the Leeds and Liverpool canal will be the key bat foraging sites locally.

The canal is also likely to represent an important commuting route for bats.

Photographs of the buildings and various tree groups are provided below.

Site Photographs – Bats:



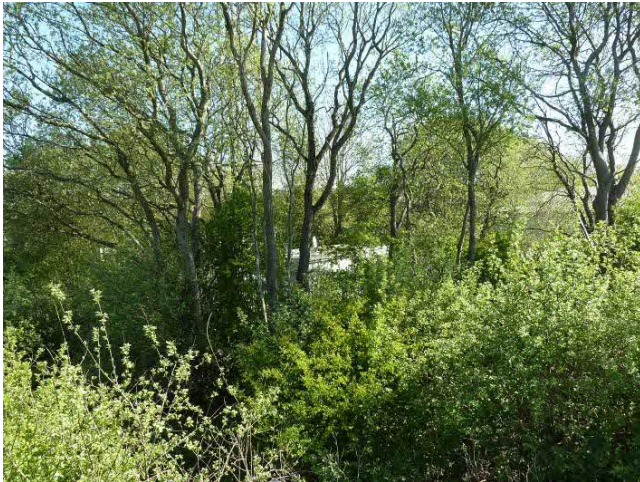
Photograph 8: Building (B1) of modern construction - sealed externally from bat ingress in roof, soffits and verges.



Photograph 9: Building (B2) of modern construction - sealed externally from bat ingress in roof, soffits and verges. Windows and doors not fitted.



Photograph 10: Building (B2) of modern construction – interior well-lit by natural light with no gaps/fissures suitable for roosting bats.



Photograph 11: The stand of goat willow in TG1.



Photograph 12: The early-mature and immature sycamore in TG3.



Photograph 13: The mature hawthorn and holly in TG3. Note very good foraging along the canal frontage.

2.5 WATER VOLE SURVEY:

The survey focussed on an approximate 100m section of the canal centred on the proposal site. A map showing the section surveyed isn't available, therefore the extent of survey isn't shown.

Physical Features:

Bank Profiles:

The bank profiles on the proposal side of the canal (south) are mostly obscured by a mixture of emergent marginal vegetation and dense bankside vegetation.

Existing gaps in the vegetation and physical clearance of vegetation locally revealed that the banks are 70°-90° where visible.

On the opposite (north) side of the canal, the banks are only partially obscured by vegetation and are 90°

Bank Height:

The bank height couldn't be established over the survey length on the development-side of the canal due to dense vegetation. Localised clearance of vegetation by the surveyor revealed the bank to be of low height and <0.4m* high.

The opposite bank is a uniform 0.7m high. (approx.)

*i.e. bank toe to bank top.

Bank Substrate:

Where visible it can be confirmed that the bank on the development side of the canal is composed of stone revetments. The revetments are extensively overgrown locally by a mixture of dense marginal and bankside vegetation.

Similarly, the opposite bank is also composed of stone revetments but with many gaps in the masonry.

A stone bridge is present adjacent to the north-east corner of the site.

Channel Width and Depth:

Channel width is uniform except where it narrows by the bridge and has a general range of around 5m-7m.

The water is turbid, but depth appears uniform and is estimated to be 1-1.6m and there is a very slow rate of flow typical of canals generally.

Channel Substrate:

The substrate is composed of soft silt and leaf litter overlying puddled clay.

Vegetation:

The channel is heavily shaded locally on the south bank by overhanging willow, hawthorn and bramble.

There is a locally extensive marginal/emergent fringe dominated by reed sweet-grass, with abundant water forget-me-not and water mint, frequent great willowherb, and occasional hemlock water-dropwort.

The north bank is unshaded and several scattered/small stands of mixed yellow iris, bulrush and reed sweet-grass are present.

There is no obvious aquatic vegetation.

2.5.2 Survey Results:

The survey was undertaken on the 24th April 2020 which within the optimum season for water vole survey. In addition, the survey was undertaken during a sustained period of warm which will prompt water vole to become active above ground.

The survey was undertaken by walking along both banks of the canal (where accessible) searching for signs of water vole activity.

The survey revealed no historical evidence of water vole occupation in the form of burrows, and no current evidence of feeding stations, latrines, runs or active burrows. The gaps in the revetments below the towpath could potentially be used by water vole, however, the absence of any other sign of occupation is reasonable indication that such use is not taking place.

The towpath side of the canal is extensively used by the public and their dogs.

Informal access by the public was also noted on the south side of the canal.

Domestic cats are present in the area with two noted on the site and another on the towpath side of the canal.

Domestic cats readily predate water voles.

Overall, there is considerable human/canine/feline pressure in this area which will increase significantly during the spring/summer months when water voles are most active.

Based on the general conditions observed along the canal section surveyed, it is reasonable to conclude that this section of the canal provides significantly sub-optimal conditions for water vole occupation.

In addition, the LERN data from the previous study revealed no records of water vole within 1km of the proposal site.

Site Photographs – Water Vole:



Photograph 14: The canal margin adjacent to the site – looking west.



Photograph 15: The canal margin adjacent to the site.



Photograph 16: The canal margin adjacent to the site – hard stone revetments exposed.



Photograph 17: The towpath side of the canal with exposed stone revetments and scattered marginal stands.

2.6 OTTER SURVEY:

The survey focussed on an approximate 100m section of the canal centred on the proposal site.

2.6.1 Survey Results:

Holts:

The survey was searched for the presence of potential otter holts, i.e. features where otters seek refuge underground for shelter and breeding purposes.

These largely comprise holes behind tree root systems, hollow trees and/or holes in rock piles, usually within 10m of the river bank, but very occasionally up to 50m of the water's edge.

It can be confirmed that the habitat in the immediate vicinity of the canal and the proposal site as a whole have no potential holt features.

Couches/Hovers:

These are places where otters generally lie up and rest above ground during the day, and include dense vegetation, piles of accumulated brash, and secluded ledges below bridges.

Dense vegetation is present on the proposal site, however, these areas are subject to human/canine disturbance from early morning to late evening and offer only suboptimal lying up value.

The land on the north side of the canal includes a towpath and residential area and has no value to otters.

Sprints:

These are faecal territorial markers left by otters in strategic locations within its territory, and include rocks, logs/branches, shingle beds, revetments and around bridges etc. These can be in-channel or along the banksides.

The search for sprints on-site and around the bridge revetments proved to be negative.

Footprints:

The search found no evidence of otter footprints.

2.6.2 Survey Conclusions:

Otters are now recovering from the effects of pesticides which caused their decline during the latter half of the last century, and otters are now found throughout the principle rivers of the country, i.e. Ribble and Lune, and many of the smaller rivers and tributaries of the county. (pers. obs. I. Ryding).

Given the extent of the Leeds and Liverpool Canal, and its localised proximity to rivers in the county and beyond, it wouldn't be considered unusual for otter to use the canal network at times, and the fact that no sign of otter habitation was found during the survey, doesn't mean that otters are not using the canal.

The home ranges of otters are large and linked to food availability, and therefore very variable in extent, with females having smaller territorial ranges in comparison to the larger territories of males.

The canal contains significant coarse fish populations and can therefore potentially support an otter population.

Nevertheless, the section of canal adjacent to the proposal site is very urban, and use by otters, if present locally, is considered to be very low/occasional only, due to the limited terrestrial habitat and the negative influence of human activity immediately adjacent to the watercourse.

The LERN data from the previous study returned no records of otter within 1km of the site.

The absence of holts and other viable lying up sites at and around the proposal site removes any direct risk to otters that might use the canal.

Refer to photographs 13 – 17 for general conditions along the canal section surveyed.

2.7 BADGER SURVEY:

2.7.1 Survey Details and Results:

The badger survey employed standard techniques to establish if badgers are present on site or use the site for foraging/commuting.

The following searches were undertaken.

- Searches for setts on site and within at least 50m of the site, excluding the gardens and industrial areas.

- Searches for foraging signs and pathways.

- Boundary searches for runs, pathways and latrines.

The survey results are outlined below.

Sett Search:

The survey found no setts on the site or on the surrounding land.

Search for Foraging Signs and Pathways:

The site was thoroughly searched for badger pathways or signs of foraging.

The survey found no sign of badger foraging or pathways on or adjacent to the site.

Boundary Search:

All of the boundaries of the site were walked and examined for potential runs, pathways and latrines.

No sign of badger activity was found.

2.7.2 Survey Conclusions:

The survey found no evidence of current use of the site by badgers, and the species is considered to be absent on-site and locally.

2.8 BIRDS:

2.8.1 Bird Evaluation:

Breeding bird surveys were not undertaken due to the type of habitats affected and the small size of the site. However, given the nature and size of the site, the level of bird use can be reasonably evaluated without recourse to survey.

The site has value for small numbers of common birds only that might use the few trees and shrubs on site as nest sites.

The site is highly unsuitable for ground-nesting birds such as skylark and/or lapwing, on account of its urban location, small size, proximity of high boundary features and general disturbance from the public that walk on the site and along the adjacent footways.

Bird species recorded include blackbird, wren, great tit and woodpigeon.

2.9 GREAT CRESTED NEWT:

2.9.1 Great Crested Newt Evaluation:

There are no ponds on the site and reference to Ordnance Survey maps and online aerial photographs show that the site is isolated from all ponds by residential and industrial development, busy roads, and a canal. In addition, there are no ponds within 250m.

The canal, whilst containing standing water with a slow flow rate, is unsuitable for GCN habitation.

The 2015 desk study returned no records of GCN within 1km of the site.

Therefore, there are no potential impacts generated on GCN or its habitat resulting from the proposals for the site.

PART 3 SUMMARY EVALUATION & RECOMMENDATIONS:

3.1 SUMMARY EVALUATION OF SURVEY FINDINGS:

The following section discusses the significance of the survey findings. It should be noted that this part of the evaluation relates to habitats and species and includes reference to the following statutory/non-statutory instruments.

The Wildlife and Countryside Act 1981 (and later amendments), with particular reference to protected species listed in Schedules 1, 5 and 8 of the above act.

Conservation of Habitats and Species Regulations 2010.

Section 41 Habitats and Species of Principal Importance in England. Natural Environment and Rural Communities (NERC) Act 2006.

Reference to any relevant Red Data List/Book species and Nationally Scarce species not covered by the above or any other lists / schedules of species rarity or importance.

Use of the *Biological Heritage Site Guidelines for Site Selection* (LCC, LWT 1998 - Revised 2006v2.) has been made. This document is an invaluable tool for assessing the significance of species / habitats in Lancashire, since it sets out the minimum ecological requirements for species/habitats to be selected as a Biological Heritage Site. Biological Heritage Sites (BHS) are by definition considered to be of Lancashire County significance for their ecological interest. By implication, sites that fail to meet these guidelines would not be of County ecological significance, but may be of significance at a more local scale e.g. Borough / Parish etc. The use of this method of site evaluation is in effect application of the Ratcliffe (1977) Criteria at a more specific local County level.

The evaluation is based on the commissioned surveys and desk study only.

The following statements are relevant in respect of the above.

3.1.1 Statutory Sites:

Lower House Lodges Local Nature Reserve (LNR) is located 870m (approx.) west of the site.

There are no other statutory wildlife sites within 5km of the site.*

*Source: MAGIC.

3.1.2 Biological Heritage Sites:

The area affected by the proposal fails to meet any of the guidelines for selection associated with the Lancashire Biological Heritage Site scheme.

Lower House Lodges Biological Heritage Site (BHS) is located 870m (approx.) west of the site and is the only BHS within 1km.

3.1.3 Section 41 (S41) Habitats and Species of Principal Importance in England Natural Environment and Rural Communities (NERC) Act 2006:

There are no S41 habitats or species on the site.

3.1.4 Nationally Scarce/County Red Data List Species:

There are no Nationally Scarce/County Red Data list plant species on the site.

In addition to the above, the field survey and evaluation of the site revealed the following information.

3.1.5 Vegetation – Habitats and Species:

The survey found no habitats on the site significantly higher than 'site' value. The habitats present are largely composed of disturbed secondary habitats with low floristic diversity, and are typical of disturbed/neglected land where the lack of management and seral succession allow the development of rank grassland communities that grade into more mature scrub communities.

Several scattered goat willow and sycamore are present, but there are no mature trees on the site.

The canal is of 'district' value and is not affected by the proposals.

3.1.6 Bats:

None of the trees or buildings on the site have roost potential above 'negligible' level.

Foraging is of minor value on account of the limited foraging areas and urban environment.

The canal provides potentially good foraging and commuting habitat that links to other good off-site foraging areas that are considered to be some of the main foraging sites for bats locally.

3.1.7 Water Vole:

The survey found no evidence of water vole activity on the canal section surveyed, and the species is considered to be absent. In addition, conditions for water vole are considered to be suboptimal for water vole occupation due to the predominance of hard revetments on the banks and the level of human/canine/feline disturbance in what is essentially an urban environment.

3.1.8 Otter:

No sign of otter was found on the canal section surveyed, and the site contains no potential otter holts or lying up areas.

Whilst use of the canal by otters cannot be absolutely ruled out, the section of canal adjacent to the proposal site is urban, and use by otters, if present locally, is considered to be very low/occasional only, due to the limited terrestrial habitat and the negative influence of human activity immediately adjacent to the watercourse.

3.1.9 Badger:

Following the survey undertaken, it is concluded that the land directly affected by the development showed no sign of use by badger. In addition, the survey revealed no evidence of badger activity in the surrounding land where accessible.

There is no evidence to indicate that there are setts on site or within at least 30m, and unlawful disturbance is not predicted. Therefore, the development does not conflict with current badger legislation and no licence is required.

3.1.10 Birds:

Nesting bird habitat is restricted to the scrub and few trees and shrubs on the site, and there is no ground-nesting bird potential. Therefore, the site is only capable of supporting very low numbers of nesting birds only and not exceeding 'local' value.

3.1.11 Great Crested Newt:

There are no ponds on the site and there are no ponds within 250m of the site, which is isolated in an urban environment.

In addition, the canal provides highly suboptimal conditions for GCN.

The desk study undertaken during the previous survey returned no records of GCN within 1km of the site.

Therefore, there are no potential impacts generated on GCN or its habitat resulting from the proposals for the site.

3.2 RECOMMENDATIONS

3.2.1 Vegetation – Habitats and Species:

The proposed works will directly affect a range of floristically ‘dull’ habitats that are of ‘site’ value only, and no further habitat surveys are recommended.

To compensate for the losses of trees on the site, and to comply with NPPF guidance, it is recommended that trees and shrubs are retained wherever possible, and a range of native and non-native* trees and shrubs be integrated into the development as part of the landscaping scheme.

*Certain non-native species are very valuable to flying invertebrates including moths, butterflies, bees and hoverflies, and their inclusion within the scheme should not be discounted. However, at least 50% of the planting should be native.

3.2.2 Bats

None of the buildings, trees or shrubs on the site have bat roost potential exceeding ‘negligible’ value. Therefore, there will be no effects on roosting bats generated by the development, and precautions are not required in that respect.

Minor foraging habitat is present which will be lost during construction, and the development will abut the canal, which is considered to be a potentially good foraging area and commuting route for bats locally.

Therefore, it is recommended that trees and shrubs along the canal side are either retained or replaced with native species, in order to maintain foraging areas and flyways for bats.

Lighting of the canal corridor must be avoided, and the following information is provided as guidance in relation to the lighting of the site in this area.

'In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions.

*Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or ‘commuting’ bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.'**

*Bats and lighting in the UK- bats and the built environment series. Bat Conservation Trust.

Table 1 below summarises the relative impacts of light types on bats.

Table 1: Bats & Lighting†	
High Negative Impact	<ul style="list-style-type: none"> • Broad spectrum lights (particularly blue-white light) with high UV. • Metal halide and mercury. • Uplights - which light above the horizontal plane, illuminating trees and foraging habitat.
Medium Negative Impact	<ul style="list-style-type: none"> • Broad spectrum lights with low/no UV. • White LED, high pressure sodium.
Low Negative Impact	<ul style="list-style-type: none"> • Narrow Spectrum Lights with no UV content. • Low pressure sodium and warm white LED.* • Directional downlights - illuminating below the horizontal plane which avoid light trespass into the environment. <p>* low relative attractiveness for insects compared to white light and therefore minimal impact on bats insect prey (Eisenbeis 2009).</p>

†Bats and Lighting - Overview of Current Evidence and Mitigation. E.L. Stone. Bat & Lighting Research Project - University of Bristol.

The following guidance provided below is appropriate in respect of bats and should be consulted in relation to the lighting proposals for the site.

Type of lamp (light source)

The impact on bats can be minimised by the use of narrow spectrum lights with no UV content including low pressure sodium lamps and warm white LED.

Luminaire and light spill accessories

Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire itself and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.

Planting can also be used as a barrier or man-made features that are required within the build can be positioned so as to form a barrier. Trees planted along the canal side can provide this function.

Lighting column

The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill.

For pedestrian lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur

There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process if required.

In all instances light spillage in the direction of the canal corridor must be avoided.

Light levels

The light should be as low as guidelines permit. If lighting is not needed, don't light.

Timing of lighting

The times during which the lighting is on should be limited to provide some dark periods.

Any exterior lighting provided on the houses adjacent to the canal corridor should be of the PIR type, to avoid lights being left on overnight.

3.2.3 Water Vole:

The survey found no evidence of water vole activity on the canal and the conditions are sub-optimal for the species. No further surveys or precautions are recommended.

3.2.4 Otter:

The survey found no evidence of otter habitation on the canal and no impacts are predicted. No further surveys or precautions are recommended.

3.2.5 Badger:

Natural England guidance *Badgers & Development A Guide to Best Practice and Licensing* was followed during the survey and evaluation of impact on the species. The guidance states that,

'the local planning authority should request a detailed ecological survey/report and developers should be prepared to provide the following information:

- *The numbers and status of badger setts and foraging areas that are affected by the proposal;*
- *the impact that the proposal is likely to have on badgers and what can be done in the way of mitigation;*
- *judgment on whether the impact is necessary or acceptable; and*
- *a recommendation on whether a licence will be required.'*

The following points are relevant in this respect.

- The survey has shown that there are no setts within at least 30m of the site, therefore no setts are affected by the proposal and there are no licensing issues in respect of disturbance to any badger sett.
- The survey found no evidence of the use of the site by badger for foraging or commuting.

No impacts on badgers are predicted and no precautions in respect of badgers are required.

3.2.6 Birds:

Nesting bird habitat is restricted to the stands of bramble, trees and shrubs on the site, there is no ground-nesting bird potential.

It is understood that there are proposals to remove some if not all of this vegetation, therefore where removal is required, it must be done outside of the bird breeding season during September-February inclusive. Removal in the period March-August must not be undertaken unless a suitably experienced ecologist has inspected the site and deemed the vegetation to be clear of nesting birds.

If breeding birds are found, then a buffer zone of 5m around the nest site must be implemented to prevent disturbance until the young have fledged and left the nest. The buffer zone must be fenced off temporarily until the nest is unoccupied. The trees/shrubs containing the nest site can only be felled once the ecologist has declared the site clear of nesting birds.

To compensate for the loss of potential nest sites, the following provisions should be made.

Provision of sparrow (Schwegler or Vivara Pro) terrace nest boxes on a minimum of 10% of the new housing stock.

Provision of 6 Schwegler* 1b nest boxes comprising 3 with 26mm holes and 3 with 32mm holes.

Provision of tree/shrub planting within the development, particularly adjacent to the canal.

*Other 'woodcrete' nest boxes are also suitable.

3.2.7 Great Crested Newt:

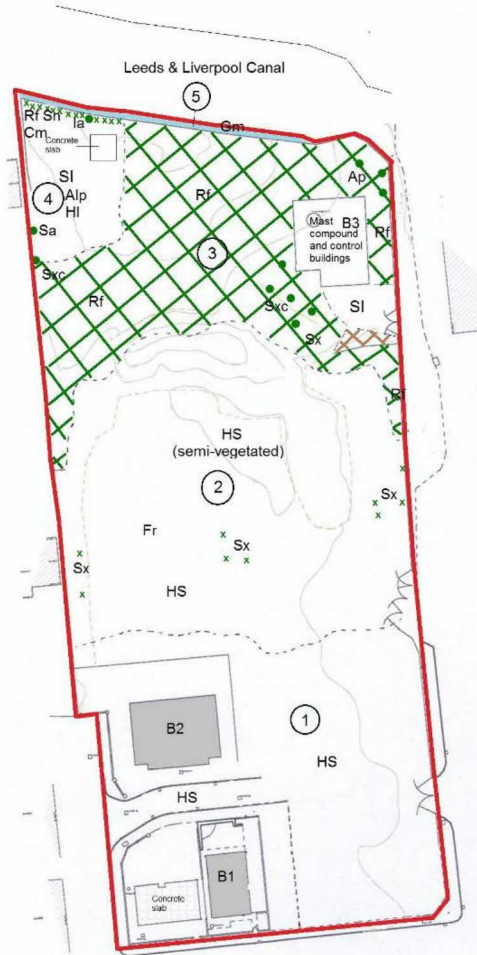
The proposal site is urban and considered isolated from the site due to barrier effects, and there are no ponds within 250m. There is no reasonable possibility of impacting on GCN or its habitat, therefore additional surveys or precautions are not recommended.

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APPENDIX:

*Map 1: Extended Phase 1 Habitat Map
Map 2: Preliminary Bat Roost Survey Map*



Key:

	Dense scrub
	Scattered scrub
	Scattered trees
	Semi-improved poor grassland
	Marginal vegetation
	Introduced shrub
	Hardstanding
	Target note
	Study area boundary

Species codes:

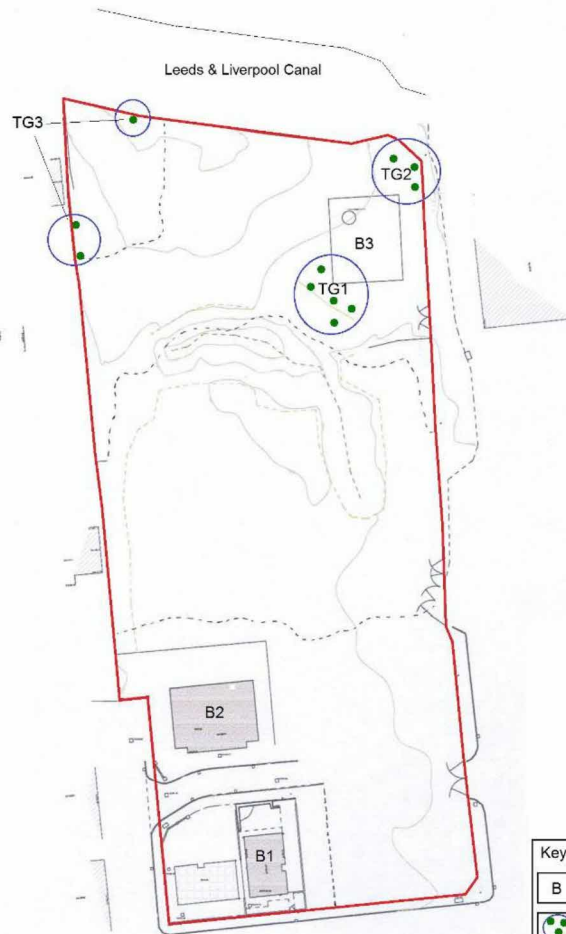
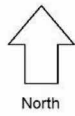
Alp	Meadow foxtail
Ap	Sycamore
Cm	Hawthorn
Fr	Red fescue
HI	Yorkshire-fog
Ia	Holly
Rf	Bramble
Sa	Whitebeam
Sn	Elder
Sx	Willow spp.
Sxc	Goat willow

Preliminary Ecological Appraisal
Land at Gannow Lane, Burnley




Map 1: Extended Phase 1 Habitat Map

Scale: Not to scale Survey Date: 24th April 2020

PENNINE 1 Moss Cottage
North Road
Bretherton
Leyland
Lancashire
PR26 9AY
01772 600441
ecological www.pennineecological.co.uk



Key:

-  Buildings B1 - B3
-  Tree groups TG1 - TG3
-  Study area boundary

Preliminary Ecological Appraisal
Land at Gannow Lane, Burnley

Map 2: Preliminary Bat Roost Survey

Scale: Not to scale Survey Date: 24th April 2020

PENNINE 1 Moss Cottage
North Road
Braitherton
Leyland
Lancashire
PR26 9AY
01772 600441
ecological www.pennineecological.co.uk