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DOCUMENT CONTROL

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Report Issued to: G L consultancy
Copy Number: v1
SUMMARY

Introduction and Scope of Survey

i. ERAP Ltd (Consultant Ecologists) was commissioned by GL Consultancy to carry out an ecological survey and assessment of the land at Burnley Road, Love Clough in February 2013.

ii. The survey was required in connection with a planning application to develop the land for housing.

iii. The ecological survey and assessment comprised a desktop study and Extended Phase 1 Habitat Survey, including a protected species survey and assessment. The survey was carried out by an appropriately experienced surveyor and in accordance with standard guidelines.

iv. The scope of survey undertaken is appropriate to enable the identification of any ecological constraints, the remit of any mitigation required and opportunities for biodiversity enhancement associated with the development proposals.

Results of Survey and Assessment

Designated Sites

v. The proposals will have no adverse direct effect on statutory or non-statutory designated sites for nature conservation.

Vegetation and Habitats

vi. The Site comprises an area of unmanaged grassland with scattered trees.

vii. None of the habitats present is representative of UK Biodiversity Action Plan (UK BAP) Priority Habitat/Habitat of Principal Importance. No semi-natural or species-rich habitats are present.

Protected Species and Other Wildlife

viii. No evidence of protected species has been detected at The Site.

ix. The presence of a pond suitable to support Great Crested Newt and a Badger sett are present within the wider area.

x. The trees on The Site are suitable for use by nesting birds, including UK BAP Priority Species such as House Sparrow and Dunnock. Guidance in relation to the timing of Site clearance to protect nesting birds and enhancement of their habitats is presented in Sections 5.1 and 5.3.

Recommendations

xi. The recommendations in Section 5.0 address all the mandatory measures to be applied to ensure compliance with wildlife legislation, the National Planning Policy Framework (NPPF) and best practice.

Conclusion

xii. The ecological survey has demonstrated that development of The Site will have no significant adverse effect on designated sites or important habitats. Further surveys are required to determine the presence or absence of Great Crested Newt in the wider area and to fully assess the status of Badger within the site and surrounding area, to assess the proposed developments impact upon any protected species.

xiii. The implementation of recommendations presented in Section 5 of this report will ensure that the proposed development will secure opportunities to enhance the biodiversity of The Site and the local area by appropriate landscape planting and habitat creation for nesting birds.
1.0 INTRODUCTION

Background and Rationale

1.1 ERAP Ltd (Consultant Ecologists) was commissioned by GL Consultancy to carry out an ecological survey and assessment of land at Burnley Road, Love Clough, Lancashire in February 2013 (hereafter referred to as ‘The Site’).

1.2 The Site comprises a field of unmanaged grassland with scattered trees. The grid reference at the centre of The Site is SD 8113 2676.

1.3 The survey and assessment was requested in connection with a planning application to develop The Site for housing.

Scope of Survey

1.4 The scope of ecological surveys undertaken in February 2013 comprised: -

a. Desktop study for known ecological information at the Site and the local area;

b. An Extended Phase 1 Habitat Survey and assessment;

c. Survey and assessment of all habitats for statutorily protected species and other wildlife including Badger (*Meles meles*), Barn Owl (*Tyto alba*), Great Crested Newt (*Triturus cristatus*), Water Vole (*Arvicola amphibious*) and bird species;

d. An assessment of the ecological value of the habitats within The Site using the National Vegetation Classification (NVC) and the Ratcliffe criteria (A Nature Conservation Review 1977);

e. The identification of any ecological constraints on the proposals and the specification of the scope of mitigation and ecological enhancement required in accordance with wildlife legislation, planning policy guidance and other relevant guidance; and,

f. The identification and description of the scope of any further surveys or precautionary actions that may be required prior to the commencement of development activities.

2.0 METHOD OF SURVEY

2.1 Desktop Study

2.1.1 The following sources of information and ecological records were consulted for information: -

a. MAgiC: A web-based interactive map which brings together geographic information on key environmental schemes and designations, including details of statutory nature conservation sites;

b. National Biodiversity Network (NBN Gateway); and,

c. Lancashire Environment Record Network (LERN), the local ecological records centre

2.2 Vegetation and Habitats

2.2.1 An Extended Phase 1 Habitat Survey of The Site was carried out by Paul Moody B.Sc. (Hons), on the 18th February 2013. The weather was dry and bright (0% cloud cover), calm (Beaufort Scale 1) and 6°C at 2pm. The conditions were favourable for the scope of survey carried out.
2.2.2 A vegetation and habitat map was produced for The Site and the immediate surrounding area (refer to Figure 2). The mapping is based on the Joint Nature Conservation Committee Phase 1 Habitat Survey methodology (JNCC 2010) with minor adjustments to illustrate and examine the habitats with greater precision.

2.2.3 The plant species within The Site boundary were determined with estimates of the distribution, ground cover, abundance and constancy of individual species. The estimation of abundance was based on the DAFOR system where D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare, this being a widely used and accepted system employed by ecological surveyors.

2.2.4 All stands of vegetation and habitats were described and evaluated using the National Vegetation Classification (NVC). The NVC provides a systematic and comprehensive analysis of British vegetation and provides a reliable framework for nature conservation and land-use planning.

2.2.5 Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act 1981 (as amended) and species which are indicators of important and uncommon plant communities. All plant nomenclature follows Stace (1991).

2.2.6 Searches were carried out for the presence of invasive species, including those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), namely Japanese Knotweed (*Fallopia japonica*), Himalayan Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).

2.3 Animal Life

*Badger*

2.3.1 A thorough search for Badger activity was carried out. The survey area covered The Site (as annotated on Figure 2) and extended to the accessible land within a radius of 50 metres from The Site boundary.

2.3.2 The following signs of Badger activity were searched for:

- ‘D’ shaped sett entrances at least 250mm wide and wider than they are high with large spoil mounds
- Discarded bedding at sett entrances (this includes grass and leaves)
- Scratching posts on shrubs and trees close to a sett entrance
- The presence of Badger hairs which are coarse, up to 100mm long with a long black section and a white tip
- Dung pit latrines and footprints
- Trampled pathways through vegetation and beneath fences.

*Bat species*

2.3.3 There are eight garage buildings present within The Site. These have been assessed in terms of their suitability for roosting bats.

2.3.4 Trees within The Site were assessed in terms of their suitability for use by roosting bats. The inspection of trees was carried in accordance with standard methodology including the Bat Mitigation Guidelines (2004), the Bat Workers’ Manual (2004) and the Bat Surveys: Good Practice Guidelines, 2nd Edition (Hundt 2012).

2.3.5 Trees were assessed for their suitability for use by roosting bats (i.e. presence of crevices, cracks, woodpecker holes, dense ivy cover and splits in the trunks and branches that could
be accessed by bats) via observation for any features from the ground. The criteria detailed at Appendix 2 were referred to during the assessment of the bat roost value of the trees.

**Water Vole**

2.3.6 No ponds, ditches or other water courses are present within or adjacent to The Site.

2.3.7 The presence of Water Vole and their habitats is reasonably discounted.

**Great Crested Newt and other amphibians**

2.3.8 No ponds are present in The Site.

2.3.9 In accordance with the current Natural England guidance outlined in document WML-A14-2 dated August 2012 all ponds within an unobstructed 250 metres of a Site should be surveyed/assessed for their suitability to support Great Crested Newts (GCN).

2.3.10 Examination of maps and aerial photographs shows one pond within an unobstructed 250 metre radius from The Site (see Figure 2). The pond was assessed using the Habitat Suitability Index (HSI) method, (Oldham et al (2000)).

2.3.11 The ten HSI criteria are: SI1: Geographical location; SI2: Pond area; SI3: Pond drying; SI4: Water quality (indicated by aquatic plant and invertebrate diversity); SI5: Shade, SI6: Waterfowl, SI7: Fish; SI8: Abundance of other ponds within 1km radius; SI9: Quality of terrestrial habitat; and SI10 Macrophyte cover (i.e. aquatic and emergent plants).

2.3.12 The HSI scores were interpreted in accordance with the categorical scale given at Table A.

<table>
<thead>
<tr>
<th>HSI score</th>
<th>Pond suitability for Great Crested Newt</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.5</td>
<td>Poor</td>
</tr>
<tr>
<td>0.5 - 0.59</td>
<td>Below average</td>
</tr>
<tr>
<td>0.6 - 0.69</td>
<td>Average</td>
</tr>
<tr>
<td>0.7 - 0.79</td>
<td>Good</td>
</tr>
<tr>
<td>&gt;0.8</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

2.3.13 Terrestrial habitats within The Site were assessed for their suitability for use by sheltering Great Crested Newt and other amphibians, and the connectivity between the pond and The Site was assessed in order to determine any requirement for further surveys at the Site.

**Bird species**

2.3.14 Bird species observed and heard during the walkover survey were recorded. All habitats were assessed for their value to support breeding birds, including ground nesting birds.

2.4 **Survey Limitations**

2.4.1 All areas of The Site were accessed and surveyed comprehensively. February is not an optimum time of year for the completion of an ecological survey. However, based on the limited habitats present and the experience of the surveyor it was concluded that an accurate and comprehensive survey was possible.

2.4.2 No significant survey limitations occurred.

2.5 **Evaluation Methodology**

2.5.1 The habitats, vegetation and animal life were evaluated with reference to standard nature conservation criteria as described by Ratcliffe (1977) and the Nature Conservancy Council (1989). These are size (extent), diversity, naturalness, rarity, fragility, typicality,
recorded history, position in an ecological or geographical unit, potential value and intrinsic appeal.

2.5.2 Government advice on wildlife, as set out in the National Planning Policy Framework (2012) and associated government circulars has been taken into consideration. The UK and Lancashire Biodiversity Action Plans (BAPs) have been taken into account in the evaluation of The Site.

3.0 SURVEY RESULTS

3.1 Desktop Study

Designated Sites

3.1.1 The Site has no statutory or non-statutory designation.

3.1.2 The data search confirmed that there are no statutory designated sites within a one kilometre radius from The Site.

3.1.3 Three non-statutory designated sites are located within a one kilometre radius of The Site. The Sites are summarised in Table B, below:

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Distance to Site</th>
<th>Reason for Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limy Water Fields Biological Heritage Site (BHS)</td>
<td>400 metres north-west of The Site</td>
<td>Steep bank of species rich grassland with scattered scrub and trees above a small brook. Grassland consists of both neutral and acid grassland that is locally flushed. The base of the slope consists of waterlogged marshy grassland and tall-herb vegetation. Grassland (Gr3)</td>
</tr>
<tr>
<td>Love Clough Fold Bluff BHS</td>
<td>630 metres north of The Site</td>
<td>Steep slope above Limy Water supporting species-rich grassland. Grassland is neutral with acid swards occurring typically along or near the top of the slope. Flushed grassland also occurs. Grassland (Gr3)</td>
</tr>
<tr>
<td>Goodshaw Baptist Chapel Grounds BHS</td>
<td>515 metres south-east of The Site</td>
<td>The Site comprises the burial grounds of Goodshaw Baptist Chapel consisting of rough grassland with trees and shrubs. The grounds support a good population of Melancholy Thistle. Flowering plants and ferns (Ff4b)</td>
</tr>
</tbody>
</table>

Protected and Notable species

3.1.4 There are no records of protected or notable species within The Site. Protected and notable species are reported within a one kilometre radius of The Site and are summarised in Table C.
Table C: Summary of protected and Notable Species Recorded within One kilometre of The Site.

<table>
<thead>
<tr>
<th>Group</th>
<th>Species</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird</td>
<td>Skylark (UK BAP), Reed Bunting (UK BAP), Curlew (UK BAP), House Sparrow (UK BAP), Grey Partridge (UK BAP), Wood Warbler (UK BAP), Lapwing (UK BAP), Common Sandpiper (Lancashire BAP), Meadow Pipit (Lancashire BAP), Swift (Lancashire BAP), Short-eared Owl (Lancashire BAP), Linnet (UK BAP), Kestrel (Lancashire BAP), Swallow (Lancashire BAP), Willow Warbler (Lancashire BAP), Dunnock (Lancashire BAP), Starling (UK BAP)</td>
<td></td>
</tr>
<tr>
<td>Terrestrial mammal</td>
<td>Soprano Pipistrelle (European Protected Species)</td>
<td>Roost located approximately 140 metres south-east of The Site.</td>
</tr>
<tr>
<td>Amphibian</td>
<td>Common Frog (Lancashire BAP)</td>
<td>Approximately 280 metres north of The Site.</td>
</tr>
<tr>
<td>Flowering plant</td>
<td>Water-purslane (Lancashire BAP)</td>
<td>One record approximately 870 metres east of The Site</td>
</tr>
<tr>
<td></td>
<td>Lesser Meadow-rue (Lancashire BAP)</td>
<td>One record at Goodshaw Baptist Chapel Grounds BHS</td>
</tr>
<tr>
<td>Moss</td>
<td>Cow-horn Bog-Moss (Lancashire BAP)</td>
<td>Two records at Clowbridge Reservoir, Burnley approximately 1 kilometre north-east of The Site</td>
</tr>
</tbody>
</table>

3.1.5 No further protected or notable species records are reported within one kilometre of the Site.

3.1.6 The presence of protected (bats), UK BAP Priority Species (birds) and Lancashire BAP Priority Species (birds, Common Frog, flowering plants and mosses) within a one kilometre radius of the centre of The Site is recognised in this report and The Site has been evaluated for its habitat suitability in respect of these species.

3.2 Vegetation and Habitats

General Description

3.2.1 The approximately 0.8 hectare Site comprises the following habitats:
   a. A field of unmanaged grassland;
   b. Trees, and;
   c. Eight Garages

3.2.2 The Site is surrounded by sheep-grazed pasture to the west and south, amenity grassland to the north and a road and residential properties to the east. A small vegetable garden borders The Site in the south east corner, refer to Figure 1. The site is located on ground which slopes downwards towards the east.

Buildings

3.2.3 Eight garages are present to the south of The Site. These are of a prefabricated concrete and corrugated iron construction. The buildings are further described in terms of their suitability for use by roosting bats at Section 3.3, below.

Unmanaged Grassland

3.2.4 The majority of The Site is occupied by a single field of unmanaged grassland characterised by constant and dominant Reed Canary-grass (Phalaris arundinacea) with constant and abundant Soft-rush (Juncus effusus).
3.2.5 Other species present throughout the unmanaged grassland comprise Great Willowherb (*Epilobium hirsutum*), Common Nettle (*Urtica dioica*), Broad-leaved Dock (*Rumex obtusifolius*), Creeping Buttercup (*Ranunculus repens*), Spear Thistle (*Cirsium vulgare*), Rosebay Willowherb (*Chamerion angustifolium*), Tufted Hair-grass (*Deschampsia cespitosa*), Rough Meadow-grass (*Poa trivialis*) and Yorkshire-fog (*Holcus lanatus*).

3.2.6 The grassland is representative of a S28 Reed Canary-grass Tall-herb Fen community of the NVC; this is a common and widespread fen community found throughout the British lowlands and on upland margins. The habitats within the site are not typical of where this habitat type is usually present, as the site is set upon higher and sloping ground and will therefore not typically hold water. The soils of the site may be very clayey, which could contribute to the dominance of species associated with permanently moist conditions.

3.2.7 A plant species list is appended at Table 1.

*Boundary Trees and Shrubs*

3.2.8 An area of self seeded Alder (*Alnus glutinosa*) is present along the northern Site boundary, refer to Figure 1. In addition to this one Goat Willow (*Salix caprea*) is present to the south of The Site.

*Boundary Features*

3.2.9 The Site is bordered to the north, west and south by stock fencing. The eastern boundary is denoted by a stone wall.

*Invasive Species*

3.2.10 No invasive species are present within The Site.

*Habitats in the Wider Area*

3.2.11 As detailed on Figure 1, the land around The Site consists of semi-improved grassland in the form of rough pasture, amenity grassland in the form of gardens and a sports field and residential properties and a small vegetable garden which is located to the south east of The Site.

3.3 *Animal Life*
**Badger**

3.3.1 No Badger activity was detected within The Site. A Badger sett was detected during the survey approximately 130 metres to the west of the site (see Figure 2). Further recommendations in regards to Badger are given in Section 5.2.

**Great Crested Newt**

3.3.2 A pond which is present approximately 190 metres north west of the site (see Figure 2) was visited and assessed for its suitability to support GCN. A Habitat Suitability Index (HSI) assessment was carried out (see Appendix 3) which assessed the pond to be ‘Excellent’ in regards to its suitability to support GCN.

3.3.3 Terrestrial habitats between the site and the pond are suitable for foraging and sheltering Great Crested Newt. The presence of dry stone walls, a small woodland, semi-improved pasture and unmanaged grassland are suitable for terrestrial Great Crested Newt.

3.3.4 The habitats present within the site are suitable for foraging Greta Crested Newt, although the abundance of plant species associated with marshy conditions suggests that the site retains a high degree of water, reducing The Site’s suitability for hibernating Great Crested Newt.

3.3.5 Further advice in regards to GCN is given in section 5.

**Bat species**

**Garages**

3.3.6 The garages within the Site are of prefabricated concrete construction. The roof construction is varied; two garages have pitched corrugated asbestos roofs, three garages having pitched roofs covered with bitumastic roofing felt and two garages having flat bitumastic roofing felt roofs (see Photo 2, below).

![Photo 2: Garages within The Site.](image)

3.3.7 The garages are assessed to have negligible value for use by roosting bats due to their construction which had no available access holes for bats. Further, habitats surrounding the buildings are not favourable for foraging or commuting bats. There are no tree lines or water bodies which lead to the buildings, and the site is exposed with no suitable wildlife links for foraging or commuting bats.

3.3.8 The buildings are unsuitable for use by roosting bats.

**Trees**

3.3.9 All trees within The Site are young to semi-mature and assessed as ‘Category 3’ (negligible value for use by roosting bats, refer to Appendix 2), owing to the absence of features such as cracks, crevices or dense ivy cover suitable for use by roosting bats.

**Habitats for foraging**
3.3.10 The Site does not contain any woodland, species-rich grassland or open water which would be more favourable for the attraction of an abundance of foraging bats and a diversity of species.

3.3.11 The Site does not represent favourable habitat for foraging or commuting bats.

**Bird species**

3.3.12 Birds detected within The Site in January 2013 are listed in Table C, below:

*Table C: Bird species detected at Site in February 2013*

<table>
<thead>
<tr>
<th>Species (Number)</th>
<th>Conservation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chaffinch (1)</td>
<td>-</td>
</tr>
<tr>
<td>Hooded Crow (1)</td>
<td>-</td>
</tr>
<tr>
<td>Blackbird (2)</td>
<td>-</td>
</tr>
<tr>
<td>Magpie (2)</td>
<td>-</td>
</tr>
</tbody>
</table>

3.3.13 The trees present on Site are suitable for use by nesting passerine (perching) birds.

3.3.14 Whilst the long grass present within the field is suitable for ground nesting birds such as Lapwing and Skylark (UK BAP Priority Species), the regular presence of dog walkers near to the site and the proximity of The Site to roads and housing reduces the grassland’s suitability for these species. The grassland is not favourable habitat for ground nesting birds.

4.0 **EVALUATION AND ASSESSMENT OF ECOLOGICAL CONSIDERATIONS AND OPPORTUNITIES**

4.1 **Brief Description of Proposals and Assessment Approach**

4.1.1 The proposals will involve the development of The Site to housing with an associated access road off Burnley Road, car parking and landscaped gardens.

4.1.2 The results of the ecological survey are evaluated below. An assessment of the effects of the development proposals is provided. Where necessary, measures to mitigate any ecological effects are described in Section 5.0.

4.1.3 The recommendations in Section 5.0 aim to ensure that the development is implemented in accordance with all wildlife legislation, Natural England guidance, the principles of the National Planning Policy Framework (NPPF), local planning policy and best practice.

4.1.4 Where possible, opportunities to enhance the habitat connectivity and seek biodiversity gain, through appropriate landscape planting and habitat creation, have been identified and recommended in Section 5.0 (in accordance with the principles of the NPPF and associated documents).

4.2 **Designated Sites**

4.2.1 Development at The Site will have no direct adverse effect on statutory or non-statutory designated Sites for nature conservation. This is due to the distance of The Site from the BHS’s and the relatively small scale of the development.

4.3 **Vegetation and Habitats**

4.3.1 None of the habitats within The Site are of significant interest in terms of the plant species composition. The NVC communities present are widespread and the habitats are not semi-natural or species-rich in composition.
4.3.2 None of the habitats present are representative of UK BAP Priority Habitat/Habitat of Principal Importance. None of the habitats present are listed on the Lancashire Biodiversity Action Plan (BAP).

4.4 Animal Life

4.4.1 No evidence of protected species has been detected at The Site.

4.4.2 A Badger sett is present to the west of the site. No badger activity was recorded at The Site. Precautionary measures in relation to the protection of Badgers are given in Section 5.2.

4.4.3 The pond present 180 metres to the north-west of the site is suitable to support breeding Great Crested Newt. Recommendations in regards to this species are given in Section 5.

4.4.4 None of the UK or LBAP species for which records exist in the surrounding area were detected on the Site.

4.4.5 The trees and grassland present on Site are suitable for use by nesting birds, including UK BAP and LBAP Priority Species/Species of Principal Importance. Recommendations for the protection of nesting birds are presented at Section 5.1.

4.4.6 The proposed development of The Site presents an opportunity to enhance habitats for nesting birds and bat species; recommendations are presented in Section 5.3.

5.0 RECOMMENDATIONS AND ECOLOGICAL ENHANCEMENT

5.1 Protection of Nesting Birds and Further Survey for Great Crested Newt

Nesting Birds

5.1.1 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) while they are nesting. It is mandatory that the trees, shrubs, garages or other suitable breeding bird habitat which are to be removed as part of the proposals, are removed outside the bird breeding season. The bird breeding season typically extends between March to August inclusive.

5.1.2 If any feature is scheduled for removal in the bird breeding season it is advised that advice from an ecologist is sought. It may be necessary to carry out a walkover survey to demonstrate satisfactorily that no breeding birds, active nests, eggs or fledglings are present in the area to be cleared.

5.1.3 If breeding birds are detected the ecologist will issue guidance in relation to the protection of the nesting birds in conjunction with the scheduled works. This may involve cordonning off an area of The Site until the young birds have fledged

Great Crested Newt

5.1.4 The pond to the north-west of The Site is considered ‘excellent’ in regards to its suitability to support breeding Great Crested Newt (GCN). It is therefore possible that GCN, (if present at the pond) are using The Site as terrestrial habitat.

5.1.5 It is recommended that a GCN presence/absence surveys are conducted at the pond to assess the presence/absence of GCN within 250 metres of The Site.

5.1.6 GCN surveys should be in accordance with guidance presented by Natural England and consist of four repetitions of three survey methods (i.e. torchlight surveys, bottle trapping and egg searches) and be conducted between March and May inclusive, with at least two surveys occurring within mid-April to mid-May.
5.1.7 If GCN are detected then two further surveys will be required in order to determine population size.

**Badger**

5.1.8 Although no Badger activity was detected within The Site, a Badger sett was detected approximately 130 metres to the north-west of The Site. Given the close proximity of the sett the possibility that Badgers may move on to The Site prior to the commencement of construction must be considered.

5.1.9 It is therefore recommended that a full updated badger survey is conducted prior to the commencement of construction to fully assess the status of Badger within the site and surrounding area.

5.2 **Enhancement for Biodiversity**

5.2.1 As required by the NPPF and other relevant planning documents, opportunities for the enhancement of biodiversity at The Site have been explored with the overall objective of increasing the biodiversity value (i.e. the nature conservation interests at The Site).

5.2.2 The implementation of the specifications/recommendations described below is of relevance at this Site.

5.2.3 All recommendations are appropriate to the geographical area, the habitats in the wider area, the wildlife present in the local area (and likely to use The Site post-construction) and take into consideration the end use of The Site as a residential development.

**Landscape Planting within the Proposed Residential Site**

5.2.4 The green spaces which will be created within the development area will be planted with native species and species which are beneficial to wildlife. The appropriate selection of species within the landscape planting at the new properties gardens and areas of open space will ensure compliance with Section 11 of the NPPF by providing a net gain for biodiversity.

5.2.5 New landscape planting will be composed from native species and species known to be of value for the attraction of wildlife. It is recommended that trees which support blossom and fruit which will attract insects, foraging bats and feeding birds are incorporated into the landscape planting. Some suitable native species are suggested below:

<table>
<thead>
<tr>
<th>Species</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazel</td>
<td>Corylus avellana</td>
</tr>
<tr>
<td>Hawthorn</td>
<td>Crataegus monogyna</td>
</tr>
<tr>
<td>Holly</td>
<td>Ilex aquifolium</td>
</tr>
<tr>
<td>Crab Apple</td>
<td>Malus sylvestris</td>
</tr>
<tr>
<td>Wild Cherry</td>
<td>Prunus avium</td>
</tr>
<tr>
<td>Blackthorn</td>
<td>Prunus spinosa</td>
</tr>
<tr>
<td>Dog Rose</td>
<td>Rosa canina</td>
</tr>
<tr>
<td>Elder</td>
<td>Sambucus nigra</td>
</tr>
<tr>
<td>Rowan</td>
<td>Sorbus aucuparia</td>
</tr>
<tr>
<td>Wych Elm</td>
<td>Ulmus glabra</td>
</tr>
</tbody>
</table>

5.2.6 Ornamental plant species can be attractive to wildlife such as feeding birds, butterflies and bees. Suitable species are suggested below:

<table>
<thead>
<tr>
<th>Species</th>
<th>Common Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barberry</td>
<td>Berberis vulgaris</td>
</tr>
<tr>
<td>Butterfly Bush</td>
<td>Buddleia sp</td>
</tr>
<tr>
<td>Californian Lilac</td>
<td>Ceanothus sp.</td>
</tr>
<tr>
<td>Hebe</td>
<td>Hebe sp.</td>
</tr>
<tr>
<td>Lavender</td>
<td>Lavandula sp.</td>
</tr>
<tr>
<td>Mahonia</td>
<td>Mahonia sp.</td>
</tr>
<tr>
<td>Firethorn</td>
<td>Pyracantha sp.</td>
</tr>
</tbody>
</table>
Rosemary  
*Rosmarinus* sp.

**Habitat Creation within the Site**

5.2.7 As The Site supports suitable habitat for nesting birds, two bird boxes such as the Schwegler 1B Nest Box (26mm aperture) (refer to Insert 1) should be installed within the development Site.

![Insert 1: Schwegler 1B Nest Box](image)

5.2.8 The boxes will be attached at a height of 4 metres or above. Boxes will not face prevailing weather.

*House Sparrow*

5.2.9 The redevelopment presents an opportunity to create habitats for nesting birds associated with residential areas.

5.2.10 As the habitats around The Site will remain favourable for the attraction of feeding House Sparrow, it is recommended that two House Sparrow terrace boxes are installed on suitable elevations of the new properties, refer to Insert 2.

![Insert 2: House Sparrow terrace box (example)](image)

5.2.11 The terrace boxes should be sited at eaves height but not above windows or doorways where droppings may cause a nuisance. Once the layout and design of the building elevations has been finalised, an Ecologist can advise on the specification and position of appropriate boxes for long-term use by nesting birds such as House Sparrow.

*Enhancing Habitats for roosting bats*

5.2.12 It is recommended that the development incorporates the installation of two commercially available bat bricks/tubes, which should, if possible, be faced with the same construction material as that used for the new development elevations.
5.2.13 The bricks/tubes should be sited above four metres above ground level on the outer margins of the site, ideally facing or close to areas of landscape planting or existing linear features. The bricks/tubes should not be positioned over windows or doorways where bat droppings may become a nuisance. Once the development layout has been finalised on paper an Ecologist should advise on appropriate locations and positions for the bat bricks/tubes.

5.2.14 Examples of suitable bricks/tubes (as available from Alana Ecology (www.alanaecology.co.uk), IBStock or Bioquip (www.bioquip.net)) are presented at Insert 3, below.

Insert 3: Examples of commercially available bat bricks/tubes suitable for housing

6.0 CONCLUSION

6.1 The ecological survey has demonstrated that development of The Site will have no significant adverse effect on designated sites or important habitats. Further surveys are required to determine the presence or absence of Great Crested Newt in the wider area, and therefore assess the proposed developments impact upon any protected species.

6.2 The implementation of recommendations presented in Section 5 of this report will ensure that the proposed development will secure opportunities to enhance the biodiversity of The Site and the local area by appropriate landscape planting and habitat creation for nesting birds.

7.0 REFERENCES


Land, K. (2004). What features should be included in new urban residential developments to maximise the opportunity for a diversity of breeding birds?. Ecology and Environmental Management - In Practice No. 43.

Maddock, A. (ed.) 2008. UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG


## APPENDICES

### APPENDIX 1: TABLES AND FIGURES

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>DAFOR*</th>
<th>% Cover</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Woody species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alnus glutinosa</td>
<td>Alder</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Salix sp.</td>
<td>Willow species</td>
<td>R</td>
<td>&lt;1%</td>
</tr>
<tr>
<td><strong>Herb species</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phalaris arundinacea</td>
<td>Reed Canary-grass</td>
<td>D</td>
<td>80%</td>
</tr>
<tr>
<td>Juncus effusus</td>
<td>Soft-rush</td>
<td>A</td>
<td>40%</td>
</tr>
<tr>
<td>Epilobium hirsutum</td>
<td>Great Willowherb</td>
<td>O</td>
<td>1%</td>
</tr>
<tr>
<td>Chamerion angustifolium</td>
<td>Rosebay Willowherb</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Cirsium vulgare</td>
<td>Spear Thistle</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Deschampsia cespitosa</td>
<td>Tufted Hair-grass</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Holcus lanatus</td>
<td>Yorkshire-fog</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Poa trivialis</td>
<td>Rough Meadow-grass</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Ranunculus repens</td>
<td>Creeping Buttercup</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Rumex obtusifolius</td>
<td>Broad-leaved Dock</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Urtica dioica</td>
<td>Common Nettle</td>
<td>O</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

*Note: DAFOR: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare. V=Very, L=Locally and *denotes a constant species.
FIGURES:

Figure 1: Phase 1 Habitat Survey
Figure 2: Pond and badger Sett Locations
**APPENDIX 2: BAT TREE ASSESSMENT CRITERIA**

*Criteria for Assessment of Trees in accordance with Category 1 to 3 as defined in Table 8.4 of the Bat Conservation Trust Bat surveys-good practice guidelines 2nd Edition (Hundt, L. 2012).*

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>DESCRIPTION</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known or Confirmed</td>
<td>Confirmed roost</td>
<td>Evidence found that indicates tree/tree features are being used by bats. Droppings found at the base of the tree, below a cavity. Bats heard ‘chattering’ inside a feature on a warm day or at dusk Bat(s) observed flying from or to a feature.</td>
</tr>
<tr>
<td>1*</td>
<td>Very high value</td>
<td>Trees with multiple, highly suitable features capable of supporting larger roosts. Features of particular significance, suitable for high priority roosts such as maternity roosts, used by large numbers of bats, offering conditions that are uncommon or rare in the local area. Features such as large cavities, extensive branch or trunk splits, also including multiple features in the same tree that offer a diversity of opportunities. Features may also include dense ivy.</td>
</tr>
<tr>
<td>1</td>
<td>High value</td>
<td>Trees with definite bat potential supporting fewer suitable features than category 1* trees or with potential for use by single bats. Features which provide a more secure form of roost for small groups of bats and individuals, but may still be quite common types of feature, such as small cavities, minor splits or sparse ivy cover.</td>
</tr>
<tr>
<td>2</td>
<td>Moderate value</td>
<td>Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats. A tree which on close inspection the potential roost positions are in some way not ideal. They could be upward facing or holes very low down or cluttered by adjacent branches.</td>
</tr>
<tr>
<td>3</td>
<td>Low/Negligible value</td>
<td>Trees that have no features which could be used by bats for roosting (Usually young trees).</td>
</tr>
</tbody>
</table>
APPENDIX 3: Pond HSI

<table>
<thead>
<tr>
<th>Indices</th>
<th>Grid Reference</th>
<th>SD 8100 2698</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI1 - Location</td>
<td>Zone A, optimal</td>
<td>1.0</td>
</tr>
<tr>
<td>SI2 - Pond area</td>
<td>800 m²</td>
<td>0.9</td>
</tr>
<tr>
<td>SI3 - Pond drying</td>
<td>Never dries</td>
<td>0.9</td>
</tr>
<tr>
<td>SI4 - Water quality</td>
<td>Good</td>
<td>1.0</td>
</tr>
<tr>
<td>SI4 - Shade</td>
<td>0%</td>
<td>1.0</td>
</tr>
<tr>
<td>SI6 - Fowl</td>
<td>Minor</td>
<td>0.67</td>
</tr>
<tr>
<td>SI7 - Fish</td>
<td>Possible</td>
<td>0.67</td>
</tr>
<tr>
<td>SI8 - Ponds</td>
<td>3</td>
<td>0.65</td>
</tr>
<tr>
<td>SI9 - Terrestrial habitat</td>
<td>Good</td>
<td>1.0</td>
</tr>
<tr>
<td>SI10 - Macrophytes</td>
<td>40%</td>
<td>0.4</td>
</tr>
<tr>
<td>HSI Scores</td>
<td>Excellent</td>
<td>0.84</td>
</tr>
</tbody>
</table>