



BEAULIEU GROUP

209-219 Henley Road, Caversham

- Preliminary Ecological Appraisal Survey
- Preliminary Bat Roost Assessment

Planning Issue

Prepared by	NW
Checked by	JJ
Date	1 st June 2018
Document Reference	LLD1441-ECO-REP-001-PEA
Revision	00

Contents

	Page No.
SUMMARY	01
1.0 Introduction	02
2.0 Scope of the Survey	04
3.0 Methodology	04
4.0 Results	08
5.0 Evaluation	15
6.0 Protected Species – Conclusions and Recommendations	15
7.0 Ecological Enhancements	18
8.0 References	19

TABLES

No.1 – Sites of special scientific interest located within the impact zone of the proposed site.

No.2 – Species list for habitat parcels

No.3 – Target Notes

APPENDICES

Appendix A – Site Photographs

SUMMARY

Lizard Landscape Design and Ecology has been commissioned by the Beaulieu Group to undertake a Preliminary Ecological Appraisal of land and buildings at 209-219 Henley Road, Caversham (*Grid Reference: SU 730 752– hereafter referred to as 'the site'*). A Preliminary Ecological Appraisal (*PEA*) was undertaken of the site on 1st May 2018, to appraise the existing ecological resource within the site and the surrounding area.

The buildings present on site have '*negligible*' to '*low*' potential for roosting bat species with no evidence of any recent activity found at the time of survey.

The gardens are generally laid to lawn and regularly maintained with a species poor assemblage of vegetation common in amenity grassland habitat. Trees and boundary hedgerows are composed of common ornamental and native tree species. The following additional surveys are recommended:

- *Tall ruderal vegetation may provide habitat to reptile species; previous surveys have identified reptile presence in adjacent properties. It is recommended to either carry out a series of reptile surveys or to assume reptile presence and devise a reptile mitigation plan outlined in this report.*
- *Three of the four buildings showed minor features suitable for roosting bat species, and were considered to offer 'low' bat roost potential. Therefore, a single bat emergence / re-entry survey of these residential dwellings is recommended.*
- *No other protected species signs were detected; therefore, no further survey work or mitigation is deemed necessary.*

The site was comprised of common species typical of the habitat type, no rare or unusual plant species were recorded on site. The site in general offered a limited floral assemblage; any loss of diversity could easily be replaced through the use of a native planting scheme and suitable habitat creation areas.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by the Beaulieu Group to undertake a Preliminary Ecological Appraisal of land and buildings at 209-219 Henley Road, Caversham (*Grid Reference: SU 730 752 – hereafter referred to as 'the site'*).
- 1.2 A Preliminary Ecological Appraisal (*PEA*) was undertaken of the site on 1st May 2018, to appraise the existing ecological resource within the site and the surrounding area. The *PEA* was comprised of a baseline survey conforming broadly to the *JNCC Ecology Phase 1 Habitat Survey protocol*, to identify the existing habitats. In addition, a protected species assessment was undertaken to identify the potential for European and nationally protected species within and adjacent to the site.
- 1.3 The field survey data and analysis contained in this report was undertaken and prepared by Niall Walkden (*Project Ecologist, Lizard Landscape Design and Ecology*) & George Sayer (*Project Ecologist, Lizard Landscape Design and Ecology*). The report has been reviewed by Joe Jackson; (*Principal; Landscape Architect BA (Hons) LA DipLA CMLI; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The site is situated on Henley Road in Caversham, which is located to the north-eastern district of urban Reading at some 40.0m above Ordnance Datum (aOD), (Grid Reference: *SU 730 752*).
- 1.5 The site area contains six residential dwellings comprised of two semi-detached properties both divided into two dwellings and two detached properties. The front of each property is utilised as driveway and to the rear of each property is a large, long garden of approximately 80.0m x 10.0m (1.0ha area) which have predominantly been laid to lawn.

Surrounding Landscape

- 1.6 The site is located in the south-eastern corner of the residential area of Caversham.
Reading railway station is located approximately 2.0km to the south-west of the site.
- 1.7 The south of the site is bordered by a brook fed the river Thames and large bodies of water located at Caversham lakes approximately 400m to the south-east. The surrounding land to the south and east of the site is dominated by farmland.

Development Proposals

- 1.8 The proposals include the redevelopment of the site to accommodate the construction of 10-12 new residential dwellings. The proposals would require the demolition of the 6 properties, and the removal of the majority of the garden areas.

2.0 SCOPE OF THE SURVEY

- 2.1 The aim of the preliminary ecological appraisal survey has been:
- *To identify and display the main habitat types and plant communities;*
 - *To provide a species list for the major habitats;*
 - *To identify habitats with potential for protected species;*
 - *To provide recommendations for surveys of protected species and / or ecological enhancement / compensation.*
- 2.2 The aims of the preliminary bat roost assessment survey were:
- *To identify the potential for roosting bats;*
 - *Identify areas where future detailed survey effort would be required and should be focused;*
 - *To establish whether other habitat features for different species groups exist to warrant further investigation.*
- 2.3 The aims of the HSI assessment was to:
- *Assess all waterbodies with 500.0m of the site against 10 no. criteria;*
 - *Assess the sites suitability for supporting a population of GCN;*
 - *Identify the need for further survey work if necessary.*
- 2.4 This report establishes the potential ecological resource within the site and outlines where any ecological constraints may occur.

3.0 METHODOLOGY

- 3.1 A Preliminary Ecological Appraisal was undertaken on 06th December 2017 and the site subjected to an ecology survey using guidelines set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC, 2003)*. This has resulted in a Site Habitat Plan (*Figure No. 01*), Species Lists for Habitat Parcels (*Table No. 02*) and Target Notes (*Table No. 03*).

- 3.2 Habitats within the site were classified and the presence, or potential presence, of certain protected and / or notable species of flora and fauna were identified. A summary description of the habitat within the site following the ecology phase 1 habitat survey methodology is presented in *Section 4.0*.
- 3.3 Due to the field survey consisting of only one site visit, certain species, particularly some of the flowering plants may not have been visible or may have been otherwise inconspicuous at the time of survey and hence overlooked. These are accepted constraints associated with the standard ecology phase 1 habitat survey methodology.
- 3.4 Habitats within and immediately adjacent to the site were assessed for their potential for uncommon and protected fauna including mammals; birds; reptiles; and amphibians. This involved identifying features that may be used by protected species, potential foraging areas and other signs of use. Water bodies were recorded, wherever possible within 500.0 metres of the proposed development site.
- 3.5 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs*. Recommendations for further investigation and survey are made in the following report.

Ground-Level Bat Roost Assessment

- 3.6 A preliminary ground-level bat roost assessment of accessible trees was undertaken on 1st May 2018, by an experienced and licenced bat surveyor.
- 3.7 Each tree was searched for potential bat roost features such as:
- *Woodpecker Holes;*
 - *Hazard Beams;*
 - *Cracks / Splits;*
 - *Bark Plates;*
 - *Cavities from Knot Holes, Canker, or Pruning Wounds;*
 - *Compression Forks;*
 - *Ivy with stem diameter in excess of 50mm.*

- 3.8 Once features had been assessed, trees and buildings on site were categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016)*:

Table 4.1- Bat Roost potential survey guidelines

Category	Building	Trees
`Negligible`	No suitable features identified.	No suitable features identified.
`Low`	A structure, which could be used opportunistically, however, are not likely to be used on a regular basis/by a large number of bats.	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
`Moderate`	A building with features which could be used regularly by a small number of bats.	Tree with features which may support a bat roost of low conservation status.
`High`	A building with features suitable for use by a large number of bats on a regular basis.	A tree with several potential bat roost sites that are suitable for use by a large number of bats.

Great Crested Newt Habitat Suitability Index Assessment

- 3.9 The *Habitat Suitability Index (HSI)* was developed by *Oldham et al (2000)* as a way of providing a numerical index allowing a direct comparison to be made between different water bodies. This index assesses ponds against 10 no. different criteria, each of which have a bearing on the likelihood of great crested newts (*Triturus cristatus*) being present in the pond under consideration.

3.10 The 10 no. attributes against which ponds can be assessed are:

- *Geographic Location;*
- *Pond Area (at its highest level);*
- *Permanence;*
- *Water Quality;*
- *Perimeter Shading;*
- *Numbers of Wildfowl;*
- *Numbers of Fish Present;*
- *Pond Count (within a 1.0 km radius);*
- *Terrestrial Habitat (within 250.0 m);*
- *Macrophyte Coverage.*

3.11 The *HSI* results in a score between 1 and 0; with 1 being optimal conditions and 0 being unlikely to support a population. However, the index merely gives an indication as to whether a pond has the potential to support great crested newts and is not a substitute for more detailed presence / absence surveys for protected species of amphibian.

4.0 RESULTS

4.1 Desk Study – Background Information

Designated Sites and Habitats

- 4.1.1 The following section outlines the ecological context of the land, describing any designated nature conservation sites in the vicinity of the land. The following designated sites and habitats are not necessarily representative of the existing site's ecology but are indicative of the ecological context of the surrounding area; a factor that may be important when assessing the presence / absence potential of certain species groups.

Statutory Protected Sites

- 4.1.2 The site is located 1.7km to the south of Clayfield Copse which is a Local Nature Reserve (*LNR*) and Ancient Woodland.
- 4.1.4 The site is located within the *Impact Risk Zone* of the SSSI's shown below in table No.01.

Table No. 2 Sites of special scientific interest located within the impact zone of the proposed site.

Name of Site	Designation	Distance from site	Description
LodgeWood & Sandford Mill	SSSI	5.6km	Small wet woodlands notable for large populations of the rare Loddon lily.
Harpsden Wood	SSSI	5.8km	Ancient woodland with rich floral diversity and unique geology.
Highlands Farm Pit	SSSI	6.1km	Important Palaeolithic historical site.
Sulham & Tidemarsch Woods & Meadows	SSSI	9km	Damp copses 7 seasonally flooded meadows with rich floral and invertebrate communities.
Hartslock Wood	SSSI & SAC	11km	Species rich chalk downland and ancient yew woodland.

Non-Statutory Protected Areas

- 4.1.5 *Sites of Nature Conservation Importance (SNCI's)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2012)* and as such are material considerations when assessing planning applications. No SNCIs are noted within 2.0km of the site.
- 4.1.6 The proposed development does not seek to alter or remove any non-statutory protected site; development proposals are not considered to adversely affect any SNCI in the vicinity.

UK Priority Habitats

- 4.1.7 Within 2.0 km of the site there are *Priority Habitats* of *Deciduous Woodland, Lowland Fens, Lowland Dry Acid Grassland, Good Quality Semi-Improved Grassland, Coastal & Floodplain Grazing Marsh, Ancient Re-planted Woodland* and *Woodpasture & Parkland*.

UK Priority Species

- 4.1.8 UK Priority and other protected species relevant to the site include bats, reptiles, amphibians and birds.
- 4.1.9 A total of 7 species of bat have been recorded within 2.0km of the site. These include:
- *Common Pipistrelle (Pipistrellus pipistrellus);*
 - *Soprano Pipistrelle (Pipistrellus pygmaeus);*
 - *Brown Long-eared (Plecotus auritus);*
 - *Daubenton's Bat (Myotis daubentonii);*
 - *Common Noctule (Nyctalus noctule)*
 - *Natterer's Bat (Myotis nattereri)*
 - *Barbastelle (Barbastella barbastellus)*

- 4.1.10 All species of bat and their roosts are protected under *Regulation 41* of the *Conservation of Habitats and Species Regulations 2017* and the *Wildlife and Countryside Act 1981*. It is an offence for anyone intentionally to kill, injure or handle a bat, to possess a bat (*whether live or dead*), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.
- 4.1.11 There are records of grass snake, adder and slow worm present within 2.0 km of the site. All species of UK reptile are protected against reckless or intentional killing or injuring under *The Wildlife and Countryside Act 1981 (as amended)*.
- 4.1.12 There are no records of great crested newts (*Triturus cristatus*) within 2.0 km of the site. Great crested newts and their resting / breeding sites are protected under *The Conservation of Habitats and Species Regulations 2017* and *The Wildlife and Countryside Act 1981 (as amended)*. GCN and their habitats are fully protected against killing; injuring; damage or disturbance under *The Conservation of Habitats and Species Regulations 2010*.
- 4.1.13 There are no records of water voles (*Arvicola amphibious*) within 2.0 km of the site. The water vole is fully protected under *Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)*.
- 4.1.14 There are no records of hazel dormouse (*Muscardinus avellanarius*) within 2.0 km of the site. The hazel dormouse is fully protected under *Schedules 5 & 6 of The Wildlife and Countryside Act 1981 (as amended)* and *Schedule 2 of The Conservation of Habitats and Species Regulations 2017*.
- 4.1.15 There are 8 records of badgers (*Meles meles*) available within 2.0 km of the site. Badgers are protected under *The Protection of Badgers Act 1992*.
- 4.1.16 There are 78 records of Hedgehogs (*Erinaceus europaeus*) within 2.0 km of the site. Hedgehog numbers are declining, and they have been a *UK Biodiversity Action Plan (BAP)* species since 2007.
- 4.1.17 There are records of otter (*Lutra lutra*) within 2.0km of the site. Otters and their habitats are fully protected against killing; injuring; damage or disturbance under *The Conservation of Habitats and Species Regulations 2017*.

4.2 Field Survey

4.2.1 The following habitats and features were recorded within the development site and the extended survey area. The general site character has been described along with a brief description of the habitat's physical characteristics. These are shown on the Site Habitat Plan in *Figure No. 01* with Species Lists for Habitat Parcels listed in Table No. 05; and Target Notes in Table No. 06.

4.2.2 Habitats within and adjacent to the development site area include:

- *Hard standing;*
- *Amenity grassland;*
- *Scattered trees;*
- *Tall ruderal vegetation;*
- *Stream;*
- *Intact species poor hedge/ treeline;*
- *Pond.*

Site Description (Refer to Appendix A – Site Photographs)

4.2.3 The site contains four two-storey brick houses (*B1-B4*) which are divided into six residential dwellings. Each dwelling has a driveway and long, large garden (**G1-G6**) which are all laid to lawn but are maintained to different levels. At the time of survey access was only available to three of the six gardens (*no. 217 (G2)*, *no. 215 (G3)* and *no. 213 (G4)*), however the remaining gardens were deemed to be of similar composition to the ones surveyed from preliminary visual inspection.

Hard-standing

4.2.4 **G2, G3** and **G4** contain a small area of hard standing directly adjacent to the back of each property comprised of paving stones.

Amenity grassland

4.2.5 **G3** was all laid to lawn but had not recently been maintained reaching approximately 20.0-30.0cm in height. It is species poor and dominated by perennial rye grass (*Lolium perenne*), cocksfoot grass (*Dactylis sp.*) and false oat-grasses (*Arrhenatherum elatius*) with frequent occurrence of dandelion (*Taraxacum officinalis*) and cow parsley (*Anthriscus sylvestris*) and locally dominant common nettle (*Urtica dioica*).

- 4.2.6 **G2** and **G4** were also laid to lawn and regularly maintained to height of 5.0cm and dominated by perennial rye grasses with frequent occurrences of daisies (*Bellis perennis*) and dandelions, bordered on each side with flowerbeds of introduced shrubs.

Scattered trees

- 4.2.7 **G2** contained several small (<5m) ornamental trees including apple (*Malus domestica*) and cherry (*Prunus sp.*) and blackthorn (*Prunus spinosa*).
- 4.2.8 **G3** contained numerous scattered trees with frequent occurrences of hazel as well as occasional occurrences of cherry, cypress (*Cupressus sp.*), ash (*Fraxinus excelsior*), hawthorn (*Crataegus monogyna*) and elderberry (*Sambucus nigra*).
- 4.2.9 **G4** contained numerous trees including occasional occurrences of ash, cypress, spruce (*Picea sp.*), whitebeam (*Sorbus aria*), horse chestnut (*Aesculus hippocastanum*) and holly (*Ilex aquifolium*).

Tall ruderal vegetation

- 4.2.10 **G2**, **G3** and **G4** all had large sections of tall ruderal vegetation towards the southern end of the gardens bordering the stream. Vegetation consisted of predominantly common nettle (*Urtica dioica*) with locally abundant areas of cleavers (*Galium aparine*) and white dead nettle (*Lamium album*) as well as frequent occurrences of bramble (*Rubus fruticosus*), ivy (*Hedera Helix*.) and lords and ladies (*Arum maculatum*).

Stream

- 4.2.11 A small stream ran from east to west across the southern border of the site. Water was slow moving and shallow with sparse of bankside vegetation. There was an absence of vegetation the stream which had low water quality perhaps due to its urban location.

Intact hedge/treeline

- 4.2.12 On the far side of the stream bordering the southern boundary of the site there was an intact hedgerow/treeline containing ash, beech (*Fagus sylvatica*), hazel (*Corylus avellane*), hawthorn, holly, bramble and nettles.

Pond

- 4.2.13 There was a single pond situated on site which was raised off the ground with a total area of approximately 6m² there were several ornamental fish species present and a few lily pads (*Nymphaeaceae sp.*). The pond was covered with netting to prevent domestic and wild animals predating the fish. An HSI assessment was conducted for the ponds suitability to provide habitat to great crested newts, which resulted in a score of 0.324 offering 'poor' suitability for great crested newts. However, considering other factors not taken into account in an HSI assessment such as the raised nature of the pond and its paving stone construction, it is considered to have 'negligible' overall suitability for great crested newts.

4.3 Preliminary Bat Roost Assessment

- 4.3.1 At the time of survey access was only available to the lofts of two of the six dwellings (**B2 & B3**). Consequently the buildings at **B1, B4, B5** and **B6** are assessed on the basis of solely an external examination.

Building (B1)

- 4.3.2 The easternmost residential dwelling present on the site (**B1**) is a two-storey detached residential dwelling. The roof is covered with concrete interlocking roof tiles with a second flat roof to the northern aspect. Some small gaps are present in the tiling which may offer access to bats. Soffits are constructed of wood, with a section rotting on the eastern aspect of the secondary roof flat roof which may offer further access to bats.

Building (B2)

- 4.3.2 To the west of B1 another two-storey building present on the site (**B2**) which comprises two residential semi-detached dwellings. The roof is covered with flat clay tiles; the roof appears to have been recently re-roofed and offers no visible access to bats.
- 4.3.3 Inspection of the loft space located in the dwelling on the eastern side of B2 showed no signs of bat activity. The void had been converted into a habitable room with no openings to the roof cavity, which had been sealed using a breathable membrane.

Building (B3)

- 4.3.4 The detached residential dwelling located at **B3** is to the west of **B2**. The roof is constructed of flat clay tiles with some minor gaps and missing tiles throughout which may offer access to bats.
- 4.3.5 The inside of the loft had been converted to bedrooms and features several skylights. Access to the small cavity above the left has been sealed throughout.

Building (B4)

- 4.3.6 The building to the east of **B3** is comprised of two semi-detached residential dwellings. The roof is constructed of flat clay tiles with some small gaps that may offer limited access to bats especially towards the gable on the western aspect. Access to the eaves is closed on both properties. There are several skylights on both properties implying they may have also undertaken a loft conversion, however due to lack of access this cannot be confirmed.

Outbuildings in gardens

- 4.3.7 The assorted sheds or outbuildings located in the gardens **G2**, **G3** and **G4** had glass or plastic windows, low thermal mass and high light levels; they offer 'negligible' bat roost potential.

Scattered Trees

- 4.3.8 Existing Trees which were accessible during the survey were assessed from the ground for the presence of any potential bat roost features (*PRF's*). None of the trees present on the site had any significant potential bat roost features.

5.0 EVALUATION

- 5.1 The ecological survey conducted during 1st May 2018, has identified habitats of amenity grassland; tall ruderal vegetation; hard standing; scattered trees; and intact species hedge/ treeline and stream.
- 5.2 The site was comprised of common species typical of the habitat types; no rare or unusual plant species were recorded on site. The site in general offered a limited floral assemblage; any loss of diversity through the proposals could easily be compensated through the use of a native planting scheme and creation of suitable habitat areas.
- 5.3 The trees and outbuildings and the building B2 were deemed to have 'negligible' for roosting bat species.
- 5.4 The buildings at **B1**, **B2** and **B4** were deemed to have 'low' potential for roosting bat species due to their roofs having limited accessibility features and buildings B3 and B4 having several skylights and loft conversions.
- 5.5 The site was searched extensively for signs of other protected species, and no evidence was found.

6.0 PROTECTED SPECIES – CONCLUSIONS AND RECOMMENDATIONS

Reptiles

- 6.1 The tall ruderal vegetation present on site may provide suitable habitat for reptiles. A recent (*September 2016*) ecological survey of the neighbouring properties found a low population of slow worms (*n=3 at peak count*) and grass snakes (*n=1 at peak count*). Due to the proximity of this survey, the porosity of the garden boundaries and the similarity of habitats the site it is likely to have similar population of reptiles. It is recommended to conduct a series of reptile surveys to ascertain the precise reptile population present and then plan any mitigation accordingly.

- 6.2 An alternative option may be to assume a similar population of reptiles as the neighbouring properties, in which case mitigation proposed would include; the provision of a buffer zone to the south of the site which will act as a receptor area; a destructive search under the supervision of a qualified ecologist while removing areas of tall ruderal vegetation, any reptiles found during this search should be moved into the receptor area. Vegetation from sections of the site would be removed in stages with an initial trim reducing vegetation to no less than 15.0 cm. A subsequent cut would then reduce vegetation to a height of < 5.0 cm rendering the area unsuitable for reptiles. All arisings would be removed from the construction zone to prevent the creation of compost piles which are attractive to reptiles. Vegetation on site would be maintained to a height of less than 5.0 cm before and during any construction activities to render the area unsuitable for re-colonisation by reptiles.

Bats

- 6.3 Buildings and trees to the rear of the site were deemed to have '*negligible*' potential for roosting bat species. Buildings (**B1, B3 and B4**) on site were deemed to have '*low*' suitability for roosting bat species. Few potential roost features were noted; however, the gardens provide some foraging potential and previous surveys locally have detected bats roosts within houses in the vicinity. Therefore, a single bat emergence or re-entry survey is recommended for each building to ascertain if the buildings are currently being used by roosting bat species.

Amphibians

- 6.4 A single pond was situated on site, with '*negligible*' potential for great crested newts. There were no other ponds within 500.0 m of the site (*on the near-side of any major barriers*) in addition to there being no records of great crested newts within 2.0km of the site and the habitat on site being largely unsuitable for amphibians. Therefore, no surveys for great crested newts are deemed necessary.

Birds

- 6.5 All active birds' nests are protected against damage / destruction under *The Wildlife and Countryside Act 1981 (as amended)* therefore, it is advised that removal of any scrub / trees take place outside of the bird nesting season (*Season: March-August*) or after careful inspection to ensure no active birds' nests are present.

Badger

- 6.6 Although no badger setts were recorded within, or adjacent to the site, they may be present in the area. Should any holes suggestive of a badger sett be located during site clearance all works in the vicinity should cease while the ecologist is consulted.
- 6.7 No suitable habitat for any other protected species was recorded on site. All habitats and species are common and widespread with no rarities noted.

7.0 ECOLOGICAL ENHANCEMENTS

7.1 The design of the proposed development should consider ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy*. Recommendations for ecological enhancements that could be considered as part of development proposals could include:

- *The use of flowering shrubs as listed within the RHS 'Perfect for Pollinators' plant list to provide year-round interest for invertebrates;*
- *Planting of a new native species-rich hedgerows within the development;*
- *Incorporation of bird boxes suitable for species such as house sparrow, swift and house martin to new buildings, while outbuildings should incorporate access holes for swallows where appropriate;*
- *Use of a sympathetic lighting scheme across the site, with lighting angled down and away from hedge / tree lines and bat boxes;*
- *The use of pale and night-scented species around the site will increase bat foraging potential. Species could include jasmine; michaelmas daisy; and evening primrose;*
- *Use of wildflower seeding, scrub and native trees within areas of open space to provide a matrix of habitats;*
- *Creation of a wildlife buffer zone along the southern boundary of the site, with a particular focus on bats and reptiles;*
- *The provision of a reptile hibernacula within the buffer zone.*

8.0 REFERENCES

- JNCC: *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*; (2003);
- Collins J (ed): *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd ed.) The Bat Conservation Trust (2016);
- Mitchell-Jones and McLeish: *Bat Workers Manual*; JNCC, 3rd Edition (2004);
- Streeter, D.: *The Most Complete Guide to the Flowers of Britain and Ireland*; Harper Collins, London (2010);
- English Nature (2001) *Great Crested Newt Mitigation Guidelines*, English Nature;
- Froglife (2001) *Great Crested Newt Conservation Handbook*. Froglife;
- Joint Nature Conservation Committee, (1998) *Herpetofauna Workers' Manual*. JNCC, Peterborough;
- Natural England (2015) *Template for Method Statement to support application for licence under Regulation 53(2)e of The Conservation of Habitats and Species Regulations 2010 (as amended) in respect of great crested newts (Triturus cristatus)*. Form WML-A14-2 (Version December 2015).

Table No. 02 – Species Lists for Habitat Parcels*Amenity Grassland*

Common Name	Scientific Name	DAFOR
Bluebell	<i>Hyacinthoides non-scripta</i>	O
Cats Ear	<i>Hypochaeris radicata</i>	R
Cleavers	<i>Galium aparine</i>	O
Clover	<i>Trifolium spp.</i>	O
Cocksfoot Grass	<i>Dactylis sp.</i>	A
Common Nettle	<i>Urtica dioica</i>	LF
Cow Parsley	<i>Anthriscus sylvestris</i>	LF
Creeping Buttercup	<i>Ranunculus repens</i>	O
Daisy	<i>Bellis perennis</i>	F
Dandelion	<i>Taraxacum officinalis</i>	F
Dovesfoot Cranesbill	<i>Geranium molle</i>	R
False Oat-Grass	<i>Arrhenatherum elatius</i>	A
Green Alkanet	<i>Pentaglottis sempervirens</i>	O
Ivy	<i>Hedera sp.</i>	LA
Pendulous Sedge	<i>Carex pendula</i>	R
Perennial Rye Grass	<i>Lolium perenne</i>	D
Ribwort Plantain	<i>Plantago lanceolate</i>	O
Sow Thistle	<i>Sonchus sp.</i>	O
Willow Herb	<i>Epilobium sp.</i>	O
Yarrow	<i>Achillea millefolium</i>	O

Tall ruderal vegetation

Common Name	Scientific Name	DAFOR
Bramble	<i>Rubus fruticosus</i>	O
Broad-Leaved Dock	<i>Rumex obtusifolius</i>	O
Chives	<i>Allium schoenoprasum</i>	R
Cleavers	<i>Galium aparine</i>	LA
Common Nettle	<i>Urtica dioica</i>	A
Garlic Mustard	<i>Alliaria petiolata</i>	O
Ground Ivy	<i>Glechoma hederacea</i>	O
Herb robert	<i>Geranium robertianum</i>	O
Ivy	<i>Hedera spp.</i>	O
Lords and Ladies	<i>Arum maculatum</i>	F
Mosses.	<i>Moss spp.</i>	O
White Dead-Nettle	<i>Lamium album</i>	LA
Wood Avens	<i>Geum urbanum</i>	O

Scattered Trees

Common Name	Scientific Name	DAFOR
Apple	<i>Malus domestica</i>	R
Ash	<i>Fraxinus excelsior</i>	F
Blackthorn	<i>Prunus spinosa</i>	R
Cherry	<i>Prunus sp.</i>	O
Cypress sp.	<i>Acer campestre</i>	O
Elderberry	<i>Sambucus nigra.</i>	O
Hawthorn	<i>Crataegus monogyna</i>	F
Hazel	<i>Corylus avellana</i>	F
Holly	<i>Ilex aquifolium</i>	O
Horse Chestnut	<i>Aesculus hippocastanum</i>	R
Spruce	<i>Picea sp.</i>	R
Whitebeam	<i>Sorbus aria</i>	R

Intact hedgerow/ tree line

<i>Common Name</i>	<i>Scientific Name</i>	<i>DAFOR</i>
Ash	<i>Fraxinus excelsior</i>	O
Beech	<i>Fagus sylvatica</i>	O
Bramble	<i>Rubus fruticosus</i>	F
Hawthorn	<i>Crataegus monogyna</i>	O
Hazel	<i>Corylus avellana</i>	O

Table No. 03 – Target Notes

No.	Feature	Description
TN01	Brush pile.	Pile of twigs and branches.
TN02	Rubble pile.	Pile of rubble and hardcore.
TN03	Fallen tree.	Fallen oak tree covered in ivy.
TN04	Compost heap.	Large heap of compost.
TN05	Pond.	Small raised pond constructed of paving stones.
TN06	Empty pool.	Empty plastic swimming pool with high sides (approx. 1.5m).
TN07	Piece of carpet.	Piece of carpet on the grass with several common toads underneath.
TN08	Compost heap.	Small heap of compost.



Legend.

- Development Site Boundary / Survey Area.
- Target Notes.
- Existing Buildings and Walls.
- Amenity Grassland.
- Hard / Bare Ground.
- Tall Ruderal Vegetation.
- Pond/Lake.
- River/Flowing Stream (Arrows Indicate Direction of Flow).
- Scattered Trees.

Planning Issue

Rev	Description	Date	Initials
00	Planning Issue	01.06.18	LB

LIZARD
Landscape Design and Ecology

The Old Bank, 24 South Street, Tarring, Worthing, West Sussex, BN14 7JH
T: 01903 214023 E: info@lizardlandscape.co.uk W: www.lizardlandscape.co.uk

Client: Beaulieu Group	Drawn: LB	Approved: GS	Date: 01.06.18
Drawing Title: Figure No.1 - Site Habitat Plan			
Scale: 1:200@A0	Drawing No: LLD1441-ECO-FIG-001	Revision: 00	

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 1 - View eastwards from outside building B1 of Henley Road in Caversham.



Photograph No. 2 - External view of Building B1.

APPENDIX A - SITE PHOTOGRAPHS



bat roost suitability.



Photograph No. 4 - View of the garden G1 from south to north.

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 5 - External View of building B2



Photograph No. 6 - View of garden at G2 from south to north.

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 7 - Tall ruderal vegetation at the south end of G2.



Photograph No. 8- View of garden at G2 from north to south.

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 9 - View of stream running along the southern boundary of the site



Photograph No. 10 - Internal view of Building B2.

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 1

' bat roost suitability.



Photograph No. 12 - View of garden at G4 from south to north.

APPENDIX A - SITE PHOTOGRAPHS



Photograph No. 13 - Pond located in G3, assessed as 'negligible' potential for great crested newts.



Photograph No. 14 - View of southern end of garden at G3

APPENDIX A - SITE PHOTOGRAPHS



' bat roost suitability.



Photograph No. 16 - View of garden at the rear of B4 to which access was unavaivlable at the time of survey.