

Preliminary Ecological Appraisal and Bat Preliminary Roost Assessment of Trees

Branch Hill Allotments

Camden Council



Author	Marc Anderton BSc MSc – Senior Ecologist	Date	22/07/2021
Approver	Robert Hutchinson BSc MSc (Hons) – Principal Ecologist	Date	27/07/2021
Project number		4531-1	
Report and version number		1.0	
Survey Date		30/06/2021	

SWT Ecology Services A: Surrey Wildlife Trust · School Lane · Pirbright · Surrey · GU24 0JN E: ecologyservices@surreywt.org.uk · T: 01483 795 440 · W: swtecologyservices.org





The contents of this report were correct at the time of the site visit. The report is provided for the sole use of the named client and is confidential.

All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this. It may not be sold, lent, hired out or divulged to any third party not directly involved in this situation without our written consent.

SWT Ecology Services is a wholly owned subsidiary of Surrey Wildlife Trust, registered in England no: 11034197. VAT no: 791 3799 78.

© SWT Ecology Services



Contents

1	Sun	nmary	3
Та	Table 2: Summary of survey results 4		
2	Intro	oduction	9
	2.2	Scope of work	9
	2.3	Survey area	9
3	Leg	islative and planning policy framework	9
4	Met	hodology	10
	4.1	PEA	10
	Desk s	study	10
	4.2	UK habitat classification survey	10
	4.3	Bat PLGRAT	11
	4.4	Habitat assessment	11
Та	ble 3:	Foraging and commuting habitat suitability	11
	4.5	Preliminary Ground Level Roost Assessment of Trees	11
	4.6	Roost suitability assessment	12
Та	ble 4:	Roosting suitability	12
	4.7	Assessment of development proposals	12
	4.8	Limitations	12
5	Bas	eline Conditions	13
	5.1	Designated sites	13
	5.2	Habitats	16
	5.3	Species	19
6	Disc	cussion	20
	6.2	Designated sites	20
	6.3	Habitats	21
	6.4	Species	23
7	Eco	logical Constraints and Opportunities	29
8	Ref	erences and Bibliography	34
Ap	pendi	x 1: Vascular plant species recorded during Phase 1 habitat survey	36
Ap	pendi	x 2: Scientific names of fauna species referred to in the report	39
Ap	pendi	x 3: Legislation and Planning Policy	40
	EU Directives		
	Englis	h Legislation	40
	Planni	ng policy	41



Protection of protected species and habitats	
Figures	
Figure 1: UK Habitat Classification Survey results	6
Figure 2: Areas of Opportunity for Enhancement and Mitigation	7
Figure 3: Site Photographs	
Tables	
Table 1: Ecological Impact Assessment (EcIA) Planning Checklist	1
Table 2: Summary of survey results	4
Table 3: Foraging and commuting habitat suitability	11
Table 4: Roosting suitability	
Table 5: Statutory and non-statutory designated sites desk study resu	lts14
Table 6: UKHab habitat survey results	17
Table 7: Habitat loss	21
Table 8: Habitats in the survey area suitable for use by bats	
Table 9: Ecological Opportunities	
Table 13: Baseline habitat distinctiveness scores	Error! Bookmark not defined.
Table 14: Justification of habitat conditions	Error! Bookmark not defined.
Table 15: Hedgerow condition assessment criteria and scores	Error! Bookmark not defined.
Table 16: Non-linear habitats biodiversity baseline calculation	Error! Bookmark not defined.
Table 17: Hedgerow biodiversity baseline calculation	Error! Bookmark not defined.
Table 18: Linear waterbody biodiversity baseline calculation	Error! Bookmark not defined.



Table 1: Ecological Impact Assessment (EcIA) Planning Checklist

	EcIA Criteria ¹	Yes/No/NA	Paragraph reference no.
⊦app/ cope	Where pre-application has been received from the LPA and/or an NGO and/or statutory body (e.g. Natural England's Discretionary Advice Service), it has been fully accounted for in the EcIA.	NA	NA
Pre Sc	The scope, structure and content of the EcIA is in accordance with published good practice.	NA	NA
d Habitats	Adequate and up-to-date: Desk study has been undertaken. Phase 1 habitat survey (or equivalent) has been undertaken. Phase 2 ecology surveys have been undertaken (where necessary).	Yes Yes No	4.1 5.1 5.2
ies an	All statutory and non-statutory sites likely to be significantly affected are clearly and correctly identified.	Yes	6.2
es, Speci	All protected or priority species and priority habitats likely to be significantly affected are clearly and correctly identified, and adequate surveys have been undertaken to inform the baseline.	Yes	6.3-4
's, Sit	Any invasive non-native plant species present are clearly and correctly identified.	Yes	NA
Survey	Where a separate PEA Report states that Phase 2 ecology surveys are required, these have been undertaken in full and results submitted with the application (or lack of such surveys is justified).	No	NA
Impacts and Effects	The assessment is based on clearly defined development proposals along with relevant drawings/plans (and any plans used are the same version number as those submitted with the application) or The residual ecological effects are considered to be not significant at any geographical scale irrespective of the detailed development proposals, and the assessment is based on a worst- case scenario.	Yes	5.2
	The report clearly describes and assesses all likely significant ecological effects (including cumulative effects) clearly stating the geographical scale of significance (where relevant).	Yes	NA
Ind	The mitigation hierarchy has been clearly followed.	Yes	5-6
Mitigation, Compensation a enhancement	The report: Clearly identifies the proposed mitigation and compensation measures, and explains how these will adequately address all likely significant adverse effects.	Yes	5-6
	Includes, where necessary, proposals for post-construction monitoring. Recommends how proposed measures may be secured through planning conditions/obligations and/or pecessary licences		
	A summary table of proposed mitigation and compensation measures has been provided.	Yes	Table 2

 $^{^{\}rm 1}$ To ensure decisions are based on adequate information in accordance with Clauses 6.2 and 8.1 of BS42020:2013



	EcIA Criteria ¹	Yes/No/NA	Paragraph reference no.
	The need for any mitigation licences required in relation to protected species is clearly identified.	NA	NA
	Proposals to deliver ecological enhancement/Biodiversity Net Gain have been provided.	Yes	Section 7, table 9 & Fig 2
е	Limitations of the ecological work have been correctly identified and the implications explained.	Yes	4.4
Competence/ Good Practic	All relevant key timing issues (e.g. site vegetation clearance or roof removal) that may constrain or adversely affect the proposed timing of development have been identified.	Yes	6
	All ecological work and surveys accord with published good practice methods and guidelines OR deviation from such guidelines is made clear and fully justified, and the implications for subsequent conclusions and recommendations made explicit in the report.	Yes	5.2
	All ecologists and surveyors hold appropriate species licences (where relevant) and/or have all necessary competencies to carry out the work undertaken.	Yes	1.1.4
Conclusions	The report clearly identifies where the proposed development complies with relevant legislation and policy, highlighting any possible non-compliance issues, and highlighting circumstances where a conclusion cannot be drawn as it requires an assessment of non-ecological issues (such as socio-economic ones).	Yes	5-6 Appendix 3
	The report provides a clear summary of losses and gains for biodiversity, and a justified conclusion of an overall net gain for biodiversity.	N/A	NA
	Justifiable conclusions based on sound professional judgement have been drawn as to the significance of effects on any designated site, protected or priority habitat/species or other ecological feature, and a justified scale of significance has been stated.	Yes	5-7



1 Summary

- 1.1.1 Surrey Wildlife Trust (SWT) Ecology Services was commissioned on 28 June 2021 by Camden Council to undertake the following surveys at Branch Hill:
- UK habitat classification survey
- Bat Preliminary Ground Level Roost Assessment of up to 20 trees
- Identify the likely ecological constraints associated with the project.
- Identify whether any mitigation measures are likely to be required.
- Identify additional surveys that may be required to inform an Ecological Impact Assessment (EcIA).
- Identify the opportunities within the project to deliver ecological enhancement.
- 1.1.2 The information collected can then be used to inform the development design.
- 1.1.3 The PEA comprised a desk study, based on information provided by Greenspace Information for Greater London and a UK habitat classification survey to assess the habitats present within the survey area.
- 1.1.4 The survey visit was undertaken on 30/06/2021 by Marc Anderton BSc MSc– Senior Ecologist.
- 1.1.5 The results of the desk study are summarised below.
- Three protected sites were recorded within 2 km of the survey area, of which the closest is Branch Hill Site of Importance for Nature Conservation (SINC) and Hampstead Heath Woods Site of Special Scientific Interest (SSSI) 1200m north east of the survey area.
- 18 protected species (one of which within the survey area) were recorded within 2 km of the survey area.
- 1.1.6 The following six UKHab habitat types were recorded during the field survey:
- Other neutral grassland
- Bramble scrub
- Line of trees
- Horticulture
- Buildings
- Standing open water and canals.
- 1.1.7 The habitats present are likely to support the following protected species or species of conservation concern:
- Amphibians (other neutral grassland, bramble scrub, line of trees, horticulture and standing open water and canals).
- Badger and fox (other neutral grassland, bramble scrub, line of trees and horticulture).
- Bats (other neutral grassland, bramble scrub, line of trees and horticulture).
- Birds (other neutral grassland, bramble scrub, line of trees and horticulture).
- Invertebrates (other neutral grassland, bramble scrub, line of trees and horticulture).
- Reptiles (other neutral grassland, bramble scrub, line of trees and horticulture).
- Other mammals (other neutral grassland, bramble scrub, line of trees and horticulture).



- 1.1.8 The development proposals will result in remedial works to the allotments due to soil contamination and will need extensive vegetation removal to cap the contaminated land and construct large-raised planters at 500mm depth across the whole of the food growing space. All vegetation, with the exception of the 'Wildlife Area' and line of trees, will be cleared within the scheme whilst the pond and buildings will also be retained.
- 1.1.9 The results of the PRA found that all trees on site provided negligible roosting suitability for bats.
- 1.1.10 A summary of the recommendations is presented in Table 2. Figure 2 details the potential ecological enhancements and areas of retained vegetation to support the precautionary approaches to vegetation clearance.

Type of Recommendation	Recommendation
	Ecological enhancements detailed in Section 7 and Table 9 should be incorporated into the proposed development design.
	Install four bird boxes e.g. open nest boxes suitable for blackbirds, and cavity nest boxes suitable for tit species.
Development design	Install four bat boxes.
	Amphibian/reptile refugia positioned in the 'Wildlife Area', see Figure 2 for locations.
	Establishment of 'Wildlife Areas' and retention of reptile habitat within the site boundaries to support precautionary measures of vegetation removal.
	Enhancement planting and management of existing pond.
	Line of trees associated with Branch Hill SINC will be protected during vegetation clearance using root protection fencing around the root zones in accordance with British Standards BS 5837 2012: Trees in Relation to Construction.
	It is recommended that no vegetation is removed along the tree lines. This includes removal of understorey shrubs and marginal grassland.
Construction	Any fuel not being used for machinery (i.e chainsaws/strimmers) is kept off site or within a large fuel spill kit. Vegetation clearance could be undertaken under a Construction Environmental Management Plan.
activities	In the event that a protected species is recorded during construction, works should cease immediately and an ecologist o contacted.
	A brief walkover of the works area and a 30 m buffer should be carried out prior to any works commencing, in order to determine any new presence of badger setts or fox dens.
	Any vegetation clearance required between March and September should be undertaken under the supervision of a suitably experienced ecologist because this is the nesting bird season.

Table 2: Summary of survey results



Type of Recommendation	Recommendation
	The site provides potential for reptiles. It has been agreed with the Nature Conservation Officer from Camden Council via e-mail ² that a precautionary approach to vegetation clearance will be undertaken within the surveys area. Before the vegetation clearance is undertaken an area of vegetation must be retained (areas suggested are labelled as 'Wildlife Areas' and are shown in Figure 2). These retained areas of vegetation will be used to move reptiles, should they be found during the clearance.
	The clearance must be conducted during the season when reptiles are active (typically April to October). The clearance should be directed towards the retained areas and be cut down to around 10 cm before site works, then the area should be carefully cleared with a closer cut and a toothed bucket used before deeper digs are made. Any logs, dead wood or rubble piles should be dismantled by hand and relocated to retained areas stipulated in Figure 2 for locations. All clearance must be supervised by an ecologist.
	To reduce the risk for amphibians it is recommended that a precautionary approach to site clearance should be adopted as for reptiles above. In the unlikely event that great crested newt be found, work should cease and an appropriately experienced and licensed ecologist be contacted.

² Nature Conservation Officer. greg.hitchcock@camden.gov.uk. Camden Allotments. 15th July 2021.



4531-1, July 2021

UK Habitat Classification Survey Results



Produced by: Surrey Wildlife Trust Ecology Services

Please note: locations are approximate

© Crown copyright and database right 2021 Ordnance Survey Licence Number AL100031669. Figure 2: Branch Hill Allotments, Hampstead, Camden, NW3 7LS Areas of Opportunity for Enhancement







Figure 3: Site Photographs

Photograph 1 Photograph 2	
Photo showing other neutral grassland Line of trees	
Photograph 3 Photograph 4 Horticulture Standing open water and canals	



2 Introduction

- 2.1.1 SWT Ecology Services was commissioned on 28 June 2021 by Camden Council to undertake the following surveys at Branch Hill.
 - A PEA of the site
 - A bat PGLRAT of the trees present within the site bounds.

2.2 Scope of work

- 2.2.1 The aim of this report is to:
- Identify the likely ecological constraints associated with the project.
- Identify whether any mitigation measures are likely to be required.
- Identify additional surveys that may be required to inform an EcIA.
- Identify the opportunities within the project to deliver ecological enhancement and mitigation.
- 2.2.2 The information collected can then be used to inform the development design.
- 2.2.3 More specifically, the scope of work includes:
- A data search for biological records within the site and an appropriate buffer (we understand that you have an SLA agreement with GIGL and as such this will be provided to us free of charge)
- UK habitat classification survey
- Bat Preliminary Ground Level Roost Assessment of up to 20 trees
- Identification of the potential ecological considerations within the site and the proposed development; and recommendations on how to manage these. Onsite offset opportunities will be identified.
- 2.2.4 The information and data provided have been prepared in accordance with current best-practice guidance (CIEEM 2017a & 2017b) and BS 42020:2013 (BSI 2013). Our ecologists are bound by CIEEM's 'Code of Conduct' (CIEEM 2019b).

2.3 Survey area

2.3.1 The survey area, presented in Figure 1, comprises of Branch Hill Allotments. It is approximately 0.3 hectares, located at Hampstead, Camden NW3 7LS, TQ 26087 86034 bounded by a line of mixed deciduous trees and residential housing and gardens. Mixed deciduous woodland to the north and east of the site. the nearest expansive and well-connected green space, Hampstead heath is approximately 103 m. Hampstead Heath is approximately 320 hectares in size. The surrounding area comprises Greater London area, a children's play area to the northwest of the site. The survey area falls within the jurisdiction of Camden London Borough Council.

3 Legislative and planning policy framework

3.1.1 In order to receive planning approval, development proposals must comply with relevant UK legislation and planning policies. Details of these (including national planning policy and local planning policy) are presented in Appendix 4. Relevance of planning policies and legislation are discussed in Section 6.



4 Methodology

4.1 PEA

Desk study

- 4.1.1 The desk study comprised a data search undertaken Greenspace Information for Greater London on behalf of SWT Ecology Services, which was received on 12/07/2021. The desk study included a search of records of protected species and those of conservation concern within 2 km of the survey area, and of statutory and nonstatutory designated sites within 2 km of the survey area.
- 4.1.2 An assessment of the likelihood of species being present within the survey area was made by comparing their habitat requirements with habitats recorded in the survey area. Species that were unlikely to occur were scoped out of the assessment.
- 4.1.3 Waterbodies within 500m of the survey area boundary were identified using aerial photography and publically available mapping.
- 4.1.4 MAGIC Maps was reviewed as part of the desk study:

4.2 UK habitat classification survey

- 4.2.1 The UK habitat classification survey was undertaken within the survey area. Survey methods followed best-practice guidance (UK Habitat Classification Working Group, 2018). UK habitat classification survey is a standardised system for classifying and mapping habitats within the UK. The survey comprised a systematic search of the survey area, during which surveyors recorded habitat types and mapped their boundaries. Habitat types were defined as per the UK habitat classification survey criteria.
- 4.2.2 Within each habitat type a record of the vascular plant species was made and an assessment of their abundance recorded. Abundances of each vascular plant species within each habitat type are based on the DAFOR scale, presented below.
- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare
- 4.2.3 Nomenclature of vascular plants followed Stace (2019). Common names are presented in the text, with scientific names detailed in Appendix 1.
- 4.2.4 Fauna species mentioned in this report will be referred to by their common name. Scientific names for these species are detailed in Appendix 2.
- 4.2.5 The UK habitat classification survey was extended to include an assessment of the habitats present to determine their suitability for protected species and species of conservation concern. A record was made of any signs of protected species, or species of conservation concern, such as runs, droppings and/or foraging remains.
- 4.2.6 A record was also made of any fauna that was incidentally recorded.
- 4.2.7 The presence of any non-native invasive species was noted, and their location and distribution mapped.



- 4.2.8 Notable observations were recorded during the survey as target notes.
- 4.2.9 The survey visit was undertaken on 30 June 2021 by Marc Anderton BSc MSc Senior Ecologist. Weather conditions were dry and warm.

4.3 Bat PLGRAT

Desk study

4.3.1 The desk study comprised an online search of MAGIC and records from GiGL to ascertain whether any bat roosts had been recorded within 2km of the study area.

4.4 Habitat assessment

4.4.1 Habitats present within the survey area, and surrounding areas were identified and their foraging and commuting corridor suitability was assessed as per Error! Reference source not found. 3. Trees were assessed for their likelihood to support roosting bats and the presence of rot holes, splits, cracks, hollows, dense-stemmed ivy and loose bark was recorded. Particular attention was paid to treelines, hedgerows, scattered trees, woodland and waterbodies.

Table 3: Foraging and commuting habitat suitability

Suitability	Definition
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Poorly connected habitat with few habitat features and generally isolated. Occasionally small numbers of bats could use this habitat.
Moderate	Habitat is generally well connected to the surrounding landscape and would comprise features including trees, water, scrub and grassland with low management. Bats could use this habitat regularly.
High	Well connected habitat with numerous unmanaged features, including valleys, water- features, hedgerows, tree lines and woodland edge. Numerous bats would be likely to use this type of habitat and it will often be well connected to roost sites.

4.5 Preliminary Ground Level Roost Assessment of Trees

- 4.5.1 The survey included an external inspection of the trees present within the survey area. Information collated on the trees included the presence of Potential Roosting Features including:
- Woodpecker holes
- Rot holes
- Hazard beams and other horizontal cracks and splits in stems and branches
- Partially detached platey bark
- Knot and other holes
- Cankers
- Hollows and cavities
- Double-leaders forming compression forks with included cavities
- Gaps between overlapping branches
- Partially detached ivy with stem diameter exceeding 50mm
- Bat, bird or hazel dormouse boxes.
- 4.5.2 Signs of bat activity were searched for.



4.6 Roost suitability assessment

4.6.1 The information collated during the PRA and PGLRAT was used to assign a roost suitability to each tree or building. Roost suitability categorisations are detailed in Table 4.

Table 4: Roosting suitability

Suitability	Definition ³
Negligible	No features present suitable for use by roosting bats.
Low	Structures: A structure with one or more potential roost sites that could be used by a small number of bats opportunistically. However features do not provide enough space, shelter, protection or environmental conditions to be used on a regular basis or by larger number of bats (i.e. unlikely to be a maternity or hibernation roost).
	Trees: A tree of sufficient size and age to contain potential roosting features, but with none seen from the ground. May contain a small number of features with only very limited roosting potential.
Moderate	A structure or tree that supports one or more potential roost sites that could be used by bats due to their size and conditions, but unlikely to support a roost of high conservation status with respect to roost type.
High	A structure or tree which supports one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time, due to their size, shelter, protection, condition and / or surrounding habitat.
Confirmed	Evidence of bats recorded during site visit or based on historical information.

4.7 Assessment of development proposals

- 4.7.1 The information collected during the desk study and UK Hab habitat survey was used to assess whether the proposals could adversely affect species and habitats that are protected and/or of conservation concern.
- 4.7.2 This was achieved by determining how the proposed development proposals could impact the ecological features recorded by looking at the proximity of the ecological features to the proposed development and their susceptibility to impacts.

4.8 Limitations

PEA

4.8.1 Extended UKHab surveys can be undertaken at any time of year, with the optimal season being between March and September, when most plant species are visible. Where feasible, all efforts were made to schedule the survey in optimal weather conditions and time of year. Nevertheless, field surveys usually fail to record all species present for various reasons, including the seasonal absence of some species, and short survey duration. Rare or cryptic species are often missed in short surveys.

³ Adapted from Collins ed. 2016.



- 4.8.2 Based on the above, a full appraisal of the plant species and habitats present could be undertaken at the time of the survey.
- 4.8.3 As the primary purpose of the investigation was to assess the habitats present and their suitability to support protected species and species of conservation concern, the desk study, combined with the field survey, were sufficient to complete this aspect of the assessment.
- 4.8.4 Bat PRAs can be undertaken at any time of the year.
- 4.8.5 This report is valid for a maximum of two years, provided site conditions do not significantly change. If more than two years have lapsed between the site survey and works being undertaken, an updated survey may be necessary to ensure recommendations for further survey, mitigation and enhancements remain valid.
- 4.8.6 This report is based on the proposed development plans provided by Camden Council – drawing number 11358-LD-PLN-101. Any changes to the plans may require the recommendations and proposed mitigation and/or enhancement measures to be updated accordingly.
- 4.8.7 This report is valid for a maximum of two years, provided site conditions do not significantly change. If more than two years have lapsed between the site survey and works being undertaken, an updated survey may be necessary to ensure recommendations for further survey, mitigation and enhancements remain valid.

5 **Baseline Conditions**

5.1 **Designated sites**

- 5.1.1 Three statutory designated sites were recorded within 2 km of the survey area, including one SSSI and two LNRs.
- 5.1.2 There are 18 non-statutory designated sites, comprising Sites of Importance for Nature Conservation (SINCs), were recorded within 2 km of the survey area.
- 5.1.3 The distance of these statutory and non-statutory designated sites from the survey area is presented in Table 5.



Table 5: Statutory and non-statutory designated sites desk study results

Site name	Brief description	Distance from survey area (m)
	Statutory designated sites	
Hampstead Heath Woods SSSI	Hampstead Heath Woods are examples of long-established high forest woodlands with an exceptional structure and abundance of old and over-mature trees providing dead wood habitat for a range of invertebrate species.	1200m
Belsize Wood LNR	The site is deeply shaded and has a rich variety of species, especially insects. The understorey is dominated with hawthorn and elder and the most common canopy trees are ash, sycamore and Swedish whitebeam.	1800m
Westbere Copse	The site is mainly woodland, with the main trees being sycamore oak, aspen and ash. The understorey is composed of snowberry, elder, elm, blackthorn and hawthorn, with ground plants which are tolerant of shade such as cow parsley, nettles and ivy.	1900m
	Non-statutory designated sites	
Branch Hill SINC	Consists of several individual blocks of woodland with small areas of grassland. Some of which lies within Branch Hill Allotments.	On and adjacent to Survey Area
Hampstead Heath SINC	Ancient woodlands contain an exceptional number of old and over-mature trees providing dead wood habitat for a range of specialist invertebrates.	100m
Hampstead Parish Churchyard SINC	Site supports mature trees and grassland. There are patches of diverse and well-established tall herbaceous vegetation.	200m
Belsize Wood LNR and Russel Nurseries Woodland Walk SINC	Site supports a diverse woodland.	700m
Hampstead Cemetery SINC	Cemetery has large number of mature trees, particularly ash.	1100m
Hampstead Green SINC	Hampstead Green is a small triangular grassland area supporting Yorkshire-fog, common bent and meadow foxtail.	1300m
Frognal Lane Gardens SINC	This is an attractive community garden surrounded by housing. A good number of trees form the high canopy including ash and holm oak.	1300m



Site name	Brief description	Distance from survey area (m)
Kentish Town City Farm SINC	The rail sides are varied and support a variety of habitat including blocks of secondary woodland dominated by sycamore, ash and silver birch.	1300m
West Hampstead Railside SINC	The site is composed of a number of sections of railside, an old orchard at Medley Gardens, Westbere Coper LNR and The Jane Evans Nature Reserve in West Hampstead. Dominated with secondary woodland.	1600m
Turners Wood SINC	Small patch of ancient woodland.	1600m
Broadhurst Gardens Meadow SINC	The communal garden consists of a meadow of varying grass heights and perimeter of belt of trees and shrubs.	1600m
Frognal Court Wood SINC	Many different trees make up the canopy of this dense wood particularly sycamore, ash and hybrid black poplars.	1600m
Green Triangle SINC	This is an attractive community garden surrounded by housing. A good number of trees form the high canopy including sessile oak, sycamore, yew and rowan.	1700m
Kings College Hampstead Campus SINC	Good range of mature trees including native and non-native species.	1700m
Gondar Gardens Covered Reservoir SINC	Covered reservoir with grassland that supports wildlife.	1700m
Fitzroy Park Allotments SINC	Large allotment site with several ponds and surrounded by mature trees.	1900m
Mill Lane Community Garden SINC	A small community garden with trees and shrubs and very attractive pond	1900m
Frognal Lane Gardens SINC	This is an attractive community garden surrounded by housing. A good number of trees form the high canopy including ash and holm oak.	1900m



5.2 Habitats

Desk study

5.2.1 A single parcel of ancient woodland was identified within 1 km of the survey area, which is 600 m from the survey area.

UKHab habitat survey results

5.2.2 Six habitats were recorded during the UKHab habitat survey. The location of these is presented in Figure 1 and photographs are presented in Figure 3. A summary of each habitat is provided in Table 6.

PEA & Bat PRA Branch Hill Allotments

Camden Council Table 6: UKHab habitat survey results



Phase 1 habitat	Map code	Photo No.	Description	HPI	Suitable for protected species and/or species of conservation concern
Other neutral grassland	g3c	1	Other neutral grassland habitats were previously used as short-sward grassy paths to access between the horticultural patches, associated with a previously active allotment. Given the allotment had been left un- managed, this formerly short-sward grassland supported a longer sward (approx. 20-30cm) but was lacking a significant tussock assemblage as a result of being left un-managed.	No	Amphibians Badger Bats Birds Invertebrates
			The grassland supported cock's-foot, common bent, cut-leaved cranesbill, false brome, false oatgrass, hedge bindweed, perennial ryegrass (less than 25% coverage) and Yorkshire fog.		Reptiles Other mammals
			The grassland supported wildflowers but had no sedges. The wildflowers had a less than 30% coverage.		
			Within this habitat, there were fruit trees present which included semi- mature and young apple and pear trees.		
Bramble scrub	h3d	N/A	Scrub was present in one small patch (approx. 25 sqm) and was dominated with bramble. No other woody species were present within this habitat. The scrub had no age range across the habitat.	No	Amphibians Badger Bats Birds
					Invertebrates Reptiles
					Other mammals

PEA & Bat PRA

Branch Hill Allotments

Camden Council



Phase 1 habitat	Map code	Photo No.	Description	НРІ	Suitable for protected species and/or species of conservation concern
Line of trees	wlg6	2	A line of mature trees (which lie within the Branch Hill SINC) were present along the north, south, and west survey area boundaries. The line of trees present have a near continuous canopy. They have at least 1/3 of the expected fully mature height and gaps between the canopy make up less the 10% of the total length. Understory species include hawthorn, hazel, elder and silver birch whilst upper canopy species include ash, common elm, common lime and pedunculate oak.	No	Amphibians Badger Bats Birds Invertebrates Reptiles Dormouse Other mammals
Horticulture	clf	3	There were numerous plots which had been formerly used as patches to grow vegetables, fruit and herbs. Given the allotment has been dis- used, the patches supported over-grown vegetables, fruit species, herbs and also native colonising plants. Vegetables, fruits and herbal species recorded within the patches included apple, asparagus, beetroot, borage, chives, fennel, fig, globe artichokes, mint, potatoes and strawberry. Native colonising plants included common bent, creeping buttercup, groundsel, common mallow and oxeye daisy.	No	Amphibians Badger Bats Birds Invertebrates Reptiles Other mammals
Buildings	uib5	4	Three buildings were present within the survey area. These buildings are sheds built from breeze blocks and wood panelling and corrugated metal pitched roofs.	No	Birds
Standing open water and canals	rl	5	A single pond (approx. 3m x 2m) was present amongst the overgrown horticultural habitats. The pond was inundated with yellow-flag iris, resulting in very little exposed water.	No	Amphibians



Waterbodies

- 5.2.3 A single pond was present within the survey area and one additional pond (Whitestone Pond) was present 275m northeast of the survey area.
- 5.2.4 Other small garden waterbodies that were not on available mapping may be present.
- 5.3 Species

Desk study

5.3.1 Protected species and species of conservation concern recorded within 2 km of the survey area were returned as part of the desk study. Suitable habitat within the survey area existed for one invertebrate, three birds, three amphibians, two reptiles and 10 mammal species. An assessment of whether these are likely to be present and could be impacted by the proposed development is presented in Section 6.

Fauna

- 5.3.2 Evidence of the following fauna species were recorded:
- Blackbird
- Robin
- Wood pigeon

Flora

5.3.3 A total of 63 vascular plants were recorded during the survey. This is a fairly high number given the habitats present and the time of year. A list of vascular plant species recorded within each habitat type and their abundance is provided in Appendix 1.



6 **Discussion**

- 6.1.1 The potential ecological constraints and the indicative potential impacts is presented in this section. Recommended surveys need to be undertaken before planning permission is sought, in line with current best practice (CIEEM 2017b).
- 6.1.2 Without mitigation, the proposed development could result in:
- Loss, degradation or fragmentation of other neutral grassland and bramble scrub.
- Loss and/or disturbance to habitats used by protected species.
- Disturbance to protected species during construction activities or site clearance.
- Direct and indirect mortality/injury of protected species.
- 6.1.3 The impact of the proposed development on each ecological receptor is presented in the sections below.

6.2 **Designated sites**

6.2.1 The proposed development is located within:

• 1200m of Hampstead Heath Woods SSSI.

- 6.2.2 Based on the current development proposals, these are unlikely to be significantly impacted by the proposed development given:
- The lack of hydrological connections between the designated sites and the survey area.
- The distance between the designated sites and the survey area.
- The small-scale nature of the proposals (i.e vegetation clearance and raising beds only).
- Recreational activity is unlikely to increase due to no additional housing proposals.
- 6.2.3 The proposed development is located:

• Within Branch Hill SINC.

- 6.2.4 Based on the current development proposals, these are unlikely to be significantly impacted by the proposed development given:
- All mature trees within the SINC are being retained.
- Works will be carried out under a Construction Environmental Management Plan to reduce the potential of pollution potential from machinery used to cut vegetation.

Recommendation

- 6.2.5 Line of trees associated with Branch Hill SINC will be protected during vegetation clearance using root protection fencing around the root zones in accordance with British Standards BS 5837 2012: Trees in Relation to Construction.
- 6.2.6 It is recommended that no vegetation is removed along the tree lines. This includes removal of understorey shrubs and marginal grassland.
- 6.2.7 Any fuel not being used for machinery is kept off site or within a large fuel spill kit.
- 6.2.8 Enhancement measures detailed in Section 7.



6.3 Habitats

- 6.3.1 The following habitat types were recorded during the survey:
- Other neutral grassland
- Bramble scrub
- Line of trees
- Horticulture
- Buildings
- Standing open water and canals
- 6.3.2 Impacts to these are detailed in Table 7. Those that will not be impacted by the development will not be discussed further. Implications for habitats that will be impacted are detailed in the sections below.

Table 7: Habitat loss

Habitat Type	Area (ha)	Key Ecological Function	Impact
Other neutral grassland	0.25	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	Temporary Loss
Bramble scrub	0.0015	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	Permanent loss
Horticulture	0.13	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	Temporary loss



Habitat Type	Area (ha)	Key Ecological Function	Impact
Standing open water and canals	0.0046	Provides foraging opportunities for amphibians and invertebrates.	Disturbance

Other Neutral Grassland

- 6.3.3 The proposed development will result in the temporary loss of 0.25 ha. The neutral grassland will be cut down to the original sward lengths, when previously used for grassy paths between the horticultural patches. Because of the existing grassland vegetation structure (20-30cm sward and no tussocks), the loss of this grassland is considered not significant.
- 6.3.4 An area of neutral grassland can be retained within the 'Wildlife Area' as stipulated within Figure 2. This will encourage this area of grassland to develop a tussock and will be subject to enhancement planting. Areas of grassland will also be retained along the lines of trees.

Bramble Scrub

6.3.5 The proposed development will result in the loss of 0.0015ha ha of bramble scrub. This impact will be permanent. This habitat is lacking botanical diversity and has a limited age range, therefore the loss of this habitat is considered to be not significant.

Horticulture

6.3.6 The proposed development will result in the loss of 0.13ha of horticultural habitat. This impact will be temporary because the horticultural habitat will re-instated within the scheme. Therefore, the impact is considered to be not significant.

Standing Open Water and Canals

6.3.7 The pond will be retained within the scheme. Due to the level of vegetation clearance within close proximity to the pond, disturbance is considered to be caused by vibrations from machinery. However, given the lack of size of the pond and being inundated with vegetation, the pond currently supports low ecological value. Therefore, the impact is considered to be not significant.

Recommendation

6.3.8 Vegetation clearance to be undertaken under a Construction Environmental Management Plan.



Woodland

Ancient woodland and veteran trees

- 6.3.10 The NPPF 2021 states that planning permission should be refused for development resulting in the loss of deterioration of irreplaceable habitats, including ancient woodland and veteran trees.
- 6.3.11 The closest parcel of ancient woodland is within 600m of the survey area. Impacts to these are unlikely given the distance and no hydrological or vegetative connections between the survey area and ancient woodland.
- 6.3.12 Ancient woodland will not be affected by this development.

6.4 Species

- 6.4.1 Suitable habitat was identified in the survey area for:
- Amphibians
- Badger/foxes
- Bats
- Birds
- Invertebrates
- Reptiles
- Other mammals
- 6.4.2 Further information on these and recommendations are provided in the following sections.
- 6.4.3 No suitable habitat was identified in the survey area for:
- Otter and water vole because of no suitable waterbodies within close proximity.
- Dormice because woodland copses adjacent to the site are very isolated, small in size and not connected to more suitable habitat in the much wider landscape. Furthermore, no records were returned within the desk study.
- 6.4.4 Given an absence of suitable habitat, these species are not discussed further in this report.

Amphibians

- 6.4.5 Records of great crested newt was recorded 1.7km from the survey area. Other records include common frog, common toad and palmate newt, both nearest records are 100-200m from site.
- 6.4.6 No amphibians were recorded during the site visit.
- 6.4.7 Great crested newt and common toad are a Species of Principal Importance (SPIs).
- 6.4.8 A single pond (approx. 3m x 2m) was present amongst the overgrown horticultural habitats within the survey area. The pond was inundated with yellow-flag iris and pendulous sedge, resulting in a very limited area of exposed water surface. The roots of the iris and sedges were dominating the pond leaving a significantly reduced open water column. Therefore, is considered to have a limited suitability for amphibians. An additional pond (Whitestone Pond) was also present 275m northeast of the survey area.



6.4.9 Terrestrial habitat considered suitable for amphibians within the survey area include other neutral grassland, bramble scrub, lines of trees and horticultural habitats. The intervening habitats (urban infrastructure such as busy roads and buildings) surrounding the survey area act as a barrier between other more suitable aquatic/terrestrial habitat (i.e areas where records of GCN and other amphibians are present and Whitestone Pond). Therefore, the likelihood of GCN and other amphibians being present on site is considered unlikely.

Recommendation

- 6.4.10 Amphibians are considered unlikely to be present within the survey area. However, following a precautionary approach to vegetation removal is recommended. Therefore, best-practice methods should be implemented to reduce potential impacts to amphibians during the active season (April to October). Following a precautionary approach, vegetation should be cut to 10 cm at least one day before the works commence so that amphibians can move away from the site of their own accord. On the day of vegetation removal, the area should be carefully cleared with a closer cut in the first instance and using a toothed bucket before deeper digs are made. Any logs, compost heaps, dead wood or rubble piles should be dismantled by hand and relocated to retained areas stipulated within Figure 2.
- 6.4.11 The above works will be supervised by an ecologist.
- 6.4.12 In the unlikely event that great crested newt be identified during works, works must cease and an ecologist should be contacted.

Badger and Fox

- 6.4.13 The survey area supported suitable badger and fox habitat in the form of other neutral grassland, bramble scrub, lines of trees and horticultural habitats. No signs of badger or fox activity including foraging signs, badger setts or fox dens were observed.
- 6.4.14 The proposed project will result in no significant impact to badgers or foxes, assuming no new setts/dens are dug between now and the works commencing. It is also possible that setts/dens may be revealed during the process of vegetation clearance.

Recommendations

- 6.4.15 The proposed project proposals will not significantly impact badger, given no badger setts were recorded within 30 m of the survey area or fox dens found within the survey area. Notwithstanding this, best-practice construction methods are recommended, including covering any holes or trenches overnight, placing a ramp in larger holes so that fallen animals can escape in the eventuality they fall into the holes.
- 6.4.16 It is possible that in the interim period between the survey and works commencing, badger excavate new setts within 30 m of the works area. To account for this, a survey of the works area and a 30 m buffer must be carried out at least three weeks prior to works commencing to check for the presence of any new setts or dens. If no setts/dens are identified, then another pre-construction check within 24 hours of works commencing should be undertaken. If setts are found, works must not commence and the setts/dens must be surveyed for a minimum of 21 days to establish usage. Following from this, a badger licence may be required. If no setts are found, then the



works can proceed. If fox dens are found, the destruction of this den must be supervised by an ecologist.

Bats

6.4.17 Records of nine bat species were returned as part of the desk study:

- Serotine
- Daubenton's
- Whiskered/Brandt's
- Natterers
- Noctule
- Nathusius pipistrelle
- Common pipistrelle
- Soprano pipistrelle
- Brown long-eared bat.
- 6.4.18 The following habitats were recorded as being suitable for foraging and commuting bats. Details of these are provided in Table 8.

Table 8: Habitats in the survey area suitable for use by bats

Habitat	Suitable Use for Bats
Other neutral grassland	Commuting, foraging
Bramble scrub	Commuting, foraging
Line of trees	Foraging
Horticultural Habitats	Commuting, foraging

- 6.4.19 Other neutral grassland, bramble scrub and horticultural habitats within the survey area are suitable for a diversity of foraging and commuting bats such as pipistrelle species (common species). The proposals no not include lighting, therefore roosting, commuting, and foraging opportunities will remain not impacted by increased light levels.
- 6.4.20 All trees present within the survey area have been assessed as providing negligible suitability.

Recommendations

6.4.21 Enhancement measures to be integrated within the scheme (see Table 9).

Birds

6.4.22 The survey area supports suitable breeding bird habitat within other neutral grassland, bramble scrub, lines of trees and horticultural habitats. Records returned by the desk study indicated the presence of two birds of conservation concern (BoCC). These include dunnock and song thrush, which are red listed on the BoCC. Majority of these habitats (with the exception of line of trees) will be removed within the scheme. However, given the habitats are isolated and not connected to more extensive and suitable nesting habitat in the wider landscape, it is expected that only small numbers



of nesting birds, most of which expected to be of low conservation value, will be nesting within the survey area.

Recommendations

- 6.4.23 Therefore, any clearance of vegetation should be undertaken outside the breeding bird season, namely between March and August, inclusive. Any clearance of vegetation within the breeding bird season should be undertaken under supervision of a suitably experienced ecologist (whilst in line with amphibian and reptile recommendations).
- 6.4.24 Should nesting birds be identified in areas proposed for vegetation clearance, the vegetation should be retained and protected with an appropriate vegetation buffer, until after the young have fledged.

Invertebrates

6.4.25 The data search returned numerous records of invertebrate species within the 2 km search. The most likely invertebrate to use habitats within the survey area is white-letter hairstreak butterfly. The caterpillar foodplant for this species include elm species, one of which (common elm) is present along the line of trees. However, the proposals will result in the loss of pollinating opportunities for other more common invertebrates.

Recommendation

- 6.4.26 The line of trees will be retained within the scheme, therefore no further surveys apply for white-letter hairstreak butterfly. However, more elm can be planted within the scheme.
- 6.4.27 However, these opportunities can be replaced with enhancement planting of wildflowers within the 'Wildlife Areas' and retained areas of vegetation within the margins of the survey area, as stipulated within Figure 2.

Reptiles

- 6.4.28 The survey area, in combination with habitats associated with Branch Hill SINC, support suitable habitat for common lizard, grass snake and slow worm. Records of slow worm, grass snake and common lizard were returned with the desk study, the nearest record being 963m from the survey area.
- 6.4.29 No reptiles were recorded within the survey area during the site assessment.
- 6.4.30 The proposed project would result in the loss and disturbance of habitats suitable for reptiles. The proposals could also injure and kill reptiles.

Recommendation

- 6.4.31 Given all reptiles are protected from killing and injuring, adequate protection measures will be required pre-construction to ensure no individuals are harmed during the vegetation clearance phase of the project. The protection measures and methodology to be followed is provided in the below reptile mitigation strategy.
- 6.4.32 The strategy includes the consideration of short term impacts such as habitat loss, and long term impacts such as the future management of the Branch Hill Allotments. The basis for the mitigation strategy, is for any reptiles present to be retained on the site, thus removing the requirement for an offsite translocation programme. In order to reduce the likelihood of killing and injuring reptiles, all of the project activities which



involve vegetation clearance will be carried out under an ecological clerk of works, working to the methodology provided below from Section 4.4.34.

- 6.4.33 It has been agreed with the Nature Conservation Officer from Camden Council via email⁴ that a precautionary approach to vegetation clearance will be undertaken within the surveys area.
- 6.4.34 Before the vegetation clearance is undertaken, an area of vegetation must be retained (areas suggested are labelled as 'Wildlife Areas' and is shown in Figure 2). These areas must be immediately suitable to support reptiles. In addition, habitat enhancements should be encouraged, such log piles/hibernacula, which would provide summer and winter shelter for any reptiles moved. These features also increase the carrying capacity of the Wildlife Areas for reptiles.
- 6.4.35 To avoid accidental impacts to these Wildlife Areas during the works, the areas should be protected. This could include temporary fencing or signs to make it clear that no vegetation clearance can occur here and no machinery and/or vehicles can be stored here. The Wildlife Areas will be a designated area where reptiles will moved to, if they are found during the ecological clerk of works programme of supervision. These Wildlife Areas and restrictions on access must be in place until the completion of the construction phase of the project.
- 6.4.36 The methodology for vegetation removal, will be habitat manipulation and persuasion throughout the site, which is a three stage process as detailed below. It is carefully designed to avoid the killing and injury of reptiles.
- At least two weeks prior to the start of the works, reptile refugia will be deployed at areas of suitable habitat to be impacted and these will be left in-situ.
- On the first and every day of work when there will be an impact, an ecologist will undertake a fingertip search of the whole habitat area and check the reptile refugia for the presence of reptiles. Any reptiles found will be moved to existing, protected, and suitable reptile habitat (Wildlife Area) within the red line boundary.
- Prior to any works being carried out, an ecologist will provide a toolbox talk to all of the site operatives. The toolbox talk will include a briefing on reptile ecology, the habitats in the woodland, the safe method of working and action to be taken in the case of an unexpected encounter.
- All of the clearance stages must be carried out during the active reptile season (April to September) and in suitable reptile survey conditions. Reptiles can be active in March and October, however, these are post-hibernation and pre-hibernation times, when disturbing and handling reptiles is not advised.
- All potential resting sites such as under debris, logs, decaying wood, and discarded household items should be avoided if possible. If they must be moved, then they will first be checked/dismantled by an ecologist. Any materials such as logs, could be used in the Wildlife Areas. This would be confirmed by the ecologist on-site. Any reptiles found will be captured and released in suitable habitat, unaffected by the works, within

⁴ Nature Conservation Officer. greg.hitchcock@camden.gov.uk. Camden Allotments. 15th July 2021.



the site. Following the completion of the artificial refugia and fingertip search, the ecologist will allow the works to commence using the two stage process. The two stage approach does not permit the immediate scrape back of vegetation and topsoil.

- Prior to the first cut down of vegetation i.e. scrub/tall grass, the ecologist will undertake a nesting bird check. If a nest is present then the works will need to be delayed until the nest has fledged. If not nest is present, then vegetation can be cut down to 30-40cm in height. The ecologist will then carry out a check of the vegetation for reptiles. Any reptiles found will be captured and released in suitable habitat, unaffected by the works, within the site. After the first cut down, the habitat will be left for at least 1 hour to allow reptiles to move or show themselves. The ecologist will check the vegetation and refugia again before the second cut to approximately 10cm. If the ecologist sees a reptile then works will cease until it has moved off or been captured and released.
- When the ecologist is satisfied that no reptiles are present then the vegetation can be cut to ground level. The ecologist will check for root systems, which can shelter reptiles, prior to the cut to ground. When the ecologist is satisfied, the vegetation can either be left at 10cm or if required, be cleared to ground. Where possible, the clearance to ground level will only be done as a last resort, there will be an aim to provide some coverage of vegetation.
- All stages of this process will be monitored to protect reptiles from killing and injury. This technique will only be used when the loss of habitat is unlikely to impact upon the conservation status of reptiles that are present in the habitat.
- 6.4.37 During the operational phase of the project (Upon the completion of the construction phase) it is understood that reptiles will be able to access around the whole Branch Hill Allotment site. In the long term, the allotment should be managed for Wildlife, including reptiles.

6.4.38

Other mammals

- 6.4.39 Historical records of European hedgehog (also a SPI and on the UK Red List) were returned with the desk study. Suitable habitat occurs within the survey area for these species.
- 6.4.40 The proposed developments would result in the loss and disturbance of habitats suitable for hedgehog.

Recommendations

- 6.4.41 Enhancement measures for these species are presented in Section 7.
- 6.4.42 Where possible, any works should avoid disturbing or blocking active mammal holes((if present). Where active mammal holes, not including badger, require removal, this should be undertaken under the supervision of a suitably experienced ecologist following a precautionary method of working to ensure the works comply with the Wild Mammals (Protection) Act 1996.



7 Ecological Constraints and Opportunities

- 7.1.1 The proposed development also has several opportunities in the form of habitat creation and enhancements. In line with the NPPF 2021, the enhancements detailed below should be incorporated into the development design to contribute towards the Government's commitment to halt the overall decline in biodiversity.
- 7.1.2 Habitat creation and enhancement opportunities are detailed in Figure 2, and are summarised in Table 9.
- 7.1.3 General principles for habitat enhancement and habitat creation include:
- Planting for the proposed landscaping scheme would ideally comprise native species or species with a known benefit to wildlife within the 'Wildlife Areas'.
- When solid board fencing is used leave a gap to allow hedgehogs to pass between gardens.
- Install four bird boxes on the north/northeast/northwest aspects of existing sheds/buildings and boundary wall.
- Install four bat boxes on boundary walls.
- Install amphibian/reptile refugia within 'Wildlife Areas'.
- Clear vegetation within and around existing pond. Plant up with native aquatic plant species.



Table 9: Ecological Opportunities

Habitat type	Key ecological function	Opportunities for enhancement	Opportunities for habitat creation
Other neutral grassland	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	 Area of other neutral grassland to be retained within the 'Wildlife Areas', as stipulated within Figure 2. This area will be subject to enhancement planting of native wildflower species including common birds-foot trefoil, oxeye daisy, meadow buttercup, bloody cranesbill and tufted vetch. These species can be purchased as plug plants from www.naturescapes.co.uk Any encroaching bramble will be removed within this area and grass to be cut annually (end of July/August). Install amphibian/reptile refugia within 'Wildlife Areas'. These can include piles of logs and rubble. 	 Hedgehogs and development PTES Leave 13 x 13 cm holes at ground level or hedgehog brick in fencing Leave at least 13 cm gap under gates Leave brick space at the base of brick walls These can be undertaken retrospectively. When essential ground level barriers are created such as high kerbs, steps, terracing, sunken patios, gullies and drains, ensure a sloped access escape route for ground dwelling species. Add sloped constructs or ramps for exits out of ponds. Buy hedgehog home or create your own with 20 bricks and a paving slab. The entrance can be bricks or a drainpipe. Or see RPSB given a hog a home guide. Can add a narrow drainpipe at the back for additional ventilation. The box should be out of direct sunlight. The entrance should be out of the direct wind.



Habitat type	Key ecological function	Opportunities for enhancement	Opportunities for habitat creation
			 Fill chamber with a layer of dead, dry leaves, they prefer small leaves such as birch, oak, hawthorn and hazel
Lines of Trees	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	 Areas (referred to as 'Wildlife Areas' in Figure 2) along the tree line will be retained within the scheme. Vegetation to be retained will include grassy margins and shrubs associated with the tree line. As there are plenty of native shrubs and trees present along this habitat, enhancement planting will focus of wildflowers. Please see section above for wildflower lists and management regimes which will be implemented within this habitat. Install two bird boxes on north/northeast/northwest aspects of trees. These boxes must be installed at least 1.5m high. Box types must include a variety of open-fronted boxes suitable for robins and cavity nest boxes for tit species. These can be purchased from www.nhbs.com. Two bat boxes to be installed on trees, at least 3m high. Box types can be purchased from www.nhbs.com. 	N/A



Habitat type	Key ecological function	Opportunities for enhancement	Opportunities for habitat creation
		 Install amphibian/reptile refugia within 'Wildlife Areas'. These can include piles of logs and rubble. 	
Bramble scrub	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	 Bramble to be removed within the 'Wildlife Area' will likely expose an area of bare ground. This bare ground will be left to allow grass species in the immediate area to colonise whilst also plug planting native plant species, as stipulated for enhancements for other neutral grassland. This area will also be subject to the same management regime. 	N/A
Horticulture	Provides foraging and opportunities for amphibians, badger/fox, bats, birds (including nesting opportunities), invertebrates, reptiles and other mammals.	N/A	N/A
Buildings and Wall	Negligible suitability for wildlife	 Install two bird boxes on north/northeast/northwest aspects of existing sheds/buildings and walls. These boxes must be installed at least 1.5m high. Box types must include a variety of open-fronted boxes suitable for robins and cavity nest boxes for tit species. These can be purchased from <u>www.nhbs.com</u>. 	N/A



Habitat type	Key ecological function	Opportunities for enhancement	Opportunities for habitat creation
		 Two bat boxes to be installed on boundary wall, at least 3m high. Box types can be purchased from <u>www.nhbs.com</u>. 	



8 **References and Bibliography**

- 8.1.1 BCT & ILP (2018) Guidance Note 08/18. Bats and artificial lighting in the UK. *Bats and the Built Environment*. Bat Conservation Trust, London & Institution of Lighting Professionals, Rugby.
- 8.1.2 BSI (2012) BS 5837:2012 Trees in relation to design, demolition and construction Recommendations. British Standard Institution, London.
- 8.1.3 BSI (2013) BS 42020:2013 Biodiversity. Code of practice for planning and development. British Standard Institution, London.
- 8.1.4 CIEEM (2013a) Competencies for Species Survey: Badger. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.5 CIEEM (2013b) Competencies for Species Survey: Barn Owl. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.6 CIEEM (2013c) Competencies for Species Survey: Eurasian Otter. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.7 CIEEM (2013d) Competencies for Species Survey: Hazel Dormouse. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.8 CIEEM (2013e) Competencies for Species Survey: European Hedgehog. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.9 CIEEM (2013f) Competencies for Species Survey: Shrews. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.10 CIEEM (2013g) Competencies for Species Survey: Water Vole. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.11 CIEEM (2013h) Competencies for Species Survey: White-clawed Crayfish. *Technical Guidance Series*. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.12 CIEEM (2013i) Metadata Standards. *Professional Guidance Series 10.* Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.13 CIEEM (2017a) Guidelines on Ecological Report Writing (2nd Edition). Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.14 CIEEM (2017b) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.15 CIEEM (2019a) Advice Note: On the Lifespan of Ecological Reports & Surveys. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.16 CIEEM (2019b) Code of Professional Conduct. Chartered Institute of Ecology and Environmental Management, Winchester.
- 8.1.17 CIRIA (2019) Biodiversity net gain. Good practice principles for development (C776F). CIRIA, London.



- 8.1.18 Collins J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition). Bat Conservation Trust, London.
- 8.1.19 English Nature (2001) Great Crested Newt mitigation guidelines. English Nature, Peterborough.
- 8.1.20 Froglife (1999) Reptile survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation. *Froglife Advice Sheet 10.* Froglife, Halesworth.
- 8.1.21 Hill D, Fasham M, Tucker G, Shewry M & Shaw P (2007) Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring. Cambridge University Press, Cambridge.
- 8.1.22 JNCC (1998) Herpetofauna Workers' Manual. JNCC, Peterborough.
- 8.1.23 JNCC (2004) Bat workers manual (3rd edition). JNCC, Peterborough.
- 8.1.24 JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit. JNCC, Peterborough.
- 8.1.25 Langton T. et al, (2001) Great Crested Newt Conservation Handbook. Froglife, Halesworth.
- 8.1.26 MHCLG (2019) National Planning Policy Framework. Ministry of Housing, Communities and Local Government, London.
- 8.1.27 Mitchell-Jones AJ (2004) Bat mitigation guidelines. English Nature, Peterborough.
- 8.1.28 Natural England (2011) Badgers and Development. A Guide to Best Practice and Licensing (Interim Guidance), Natural England, Peterborough.
- 8.1.29 Natural England (2018) Ancient woodland, ancient trees and veteran trees: protecting them from development. Natural England, Peterborough; Forestry Commission, Edinburgh.
- 8.1.30 ODPM (2005) Government circular: biodiversity and geological conservation statutory obligations and their impact within the planning system. The Stationary Office, London.
- 8.1.31 Poland J and Clement C (2009) The Vegetative Key to the British Flora. Botanical Society of the British Isles, London
- 8.1.32 Rose F (2006) The Wild Flower Key. Penguin Books Ltd, London.
- 8.1.33 Stace CA (2019) New Flora of the British Isles (4th Edition). C&M Floristics, London.
- 8.1.34 TCPA and SWT (2012) Planning for a healthy environment good practice guidance for green infrastructure and biodiversity. Town and Country Planning Association, London & Surrey Wildlife Trust, Pirbright.
- 8.1.35 UK Habitat Classification Working Group (2018) UK Habitat Classification Habitat Definitions V1.0: http://ecountability.co.uk/ukhabworkinggroup-ukhab



Appendix 1: Vascular plant species recorded during Phase 1 habitat survey

Scientific name	Common name	Site abundance	Habitat/s	Abundance in habitat type
Agrostis capillaris	Common bent	F	Other neutral grassland	A
Alcea rosea	Hollyhock	R	Horticulture	0
Alchemilla mollis	Lady's mantle	R	Line of trees	0
Alliaria petiolata	Garlic mustard	F	Other neutral grassland	A
Betula pendula	Silver birch	R	Line of trees	0
Borago officinalis	Borage	R	Horticulture	0
Buddleja sp	Buddleia	R	Horticulture	0
Calystegia sepium	Hedge bindweed	R	Horticulture	0
Carex pendula	Pendulous sedge	0	Standing Water	D
Circaea lutetiana	Enchanter's nightshade	R	Line of trees	0
Cornus sanguinea	Common dogwood	R	Line of trees	0
Corylus avellana	Hazel	0	Line of trees	F
Crataegus monogyna	Hawthorn	0	Line of trees	F
Cucumis sativus 'Variegata'	Cucumber cultivar	R	Horticulture	0
Cynara scolymus	Globe artichoke	R	Horticulture	0
Dactylis glomerata	Cock's-foot	F	Other neutral grassland	A
Dryopteris filix- mas	Male fern	0	Line of trees	F
Epilobium montanum	Broad-leaved willowherb	R	Other neutral grassland	0
Ficus carica	Fig	R	Horticulture	0
Foeniculum vulgare	Fennel	R	Horticulture	0
Fragaria × ananassa	Strawberry cultivar	R	Horticulture	0
Fraxinus excelsior	Ash	0	Line of trees	F



Scientific name	Common name	Site abundance	Habitat/s	Abundance in habitat type
Geranium robertianum	Herb Robert	R	Other neutral grassland	0
Geum urbanum	Wood avens	R	Other neutral grassland	0
Hedera helix	lvy	R	Other neutral grassland	0
Heracleum sphondylium	Common Hogweed	R	Other neutral grassland	0
Holcus lanatus	Yorkshire fog	R	Other neutral grassland	0
llex aquifolium	Holly	0	Line of trees	F
Iris pseudacorus	Yellow flag iris			
Lapsana communis	Nipplewort	R	Other neutral grassland	0
Laurus nobilis	Common bay tree	R	Horticulture	0
Lavandula angustifolia	Lavender	R	Horticulture	0
Ligustrum ovalifolium	Garden privet	R	Horticulture	0
Lolium perenne	Perennial ryegrass	R	Other neutral grassland	0
Lonicera periclymenum	Honeysuckle	0	Line of trees	F
Lysimachia vulgaris	Yellow loosestrife	R	Pond	F
Malus domestica 'Variegata'	Apple cultivar	R	Horticulture	0
Malva neglecta	Common mallow	0	Line of trees	F
Poa annua	Annual meadow grass	R	Other neutral grassland	0
Poa trivialis	Rough meadow grass	R	Other neutral grassland	0
Potentilla reptans	Creeping cinquefoil	R	Other neutral grassland	0
Prunus laurocerasus	Cherry Laurel	R	Horticulture	0
Quercus robur	Pedunculate oak	0	Line of trees	F



Scientific name	Common name	Site abundance	Habitat/s	Abundance in habitat type
Ranunculus repens	Creeping buttercup	R	Other neutral grassland	0
Rheum rhabarbarum	Rhubarb	R	Horticulture	0
Ribes rubrum	Red current	R	Horticulture	0
Ribes uva-crispa 'Variegata'	Gooseberry cultivar	R	Horticulture	0
Rosa sp	Rose sp	R	Horticulture	0
Rubus fruticosus	Bramble	0	Bramble Scrub	D
Rubus idaeus 'Variegata'	Raspberry cultivar	R	Horticulture	0
Rumex obtusifolius	Broad-leaved dock	0	Other neutral grassland	F
Rumex sanguineus	Wood dock	0	Other neutral grassland	F
Salvia rosmarinus	Rosemary	R	Horticulture	0
Sambucus nigra	Elder	R	Other neutral grassland	0
Sonchus arvensis	Perennial sowthistle	R	Other neutral grassland	0
Stachys sylvatica	Hedge woundwort	R	Other neutral grassland	0
Symphytum officinale	Comfrey	R	Horticulture	0
Taraxacum officinale	Dandelion	R	Other neutral grassland	0
Tilia × europaea	Common lime	0	Lien of Trees	F
Tropaeolum sp	Nasturtiums sp	R	Horticulture	0
Ulmus procera	English elm	0	Lien of Trees	F
Urtica dioica	Common nettle	0	Lien of Trees	F



Appendix 2: Scientific names of fauna species referred to in the report

Amphibians

- Bufo bufo common toad
- Triturus cristatus great crested newt
- Rana temporaria common frog

Bats

- Eptesicus serotinus Serotine
- Myotis daubentoniid Daubenton's bat
- Myotis nattereri Natterers bat
- Nyctalus noctula noctule
- Pipistrellus nathusii Nathusius bat
- *Pipistrellus pipistrellus* Common pipistrelle
- *Pipistrellus pygmaeus* soprano pipistrelle
- Plecotus auritus brown long-eared

Birds

- Prunella modularis dunnock
- Pyrrhula pyrrhula bullfinch
- Turdus philomelos song thrush

Mammals (except bats)

- Arvicola amphibius European water vole
- Erinaceus europaeus West European hedgehog
- Lutra lutra European otter
- Meles meles Eurasian badger
- Muscardinus avellanarius hazel dormouse
- Vulpes vulpes Red fox

Reptiles

- Anguis fragilis slow-worm
- Natrix helvetica grass snake
- Zootoca vivipara common lizard

Appendix 3: Legislation and Planning Policy

EU Directives

Habitats Directive (92/43/EEC)

Required protection of natural habitats, wild flora and fauna through the designation of Special Areas of Conservation (SAC) (Natura 2000 site) which support habitats listed on Annex I and species listed on Annex II of the Directive. Special protection measures are afforded to species listed on Annex IV, V and VI (European Protected Species). Introduces the precautionary principal which (with some exception) permits projects only if no adverse effect on site integrity is ascertained. Transposed into English law via the Conservation of Habitats and Species Regulations 2017 (as amended).

Wild Birds Directive (79/409/EEC)

Aims to maintain ornithological and habitat diversity through the creation of Special Protection Area (SPA) (Natura 2000 site) which aim to maintain ornithological and habitat diversity through the entire European range. Provides a framework for the conservation, management and human interaction with wild birds in Europe and includes measures to prevent the introduction of non-native species. Special protection measures are afforded to species listed on Annex I. Transposed into English law via the Conservation of Habitats and Species Regulations 2017 (as amended).

English Legislation

Conservation of Habitats and Species Regulations 2017

Provides for the protection of Natura 2000 sites (SACs, SPAs and Ramsar sites), European Protected Species and habitats. European Protected Species are protected from:

- Deliberate capture, injury or killing.
- Deliberate disturbance of a European Protected Species, such that it impairs their ability to breed, reproduce or rear their young, hibernate or migrate or significantly affect their local distribution or abundance.
- Deliberately take or destroy effect.
- Damage or destroy a breeding site or resting place.
- Keep, transport, sell or exchange any live, dead or part of a European Protected Species.

European Protected Species include, but are not limited to:

- Great crested newt
- Natterjack toad
- Otter
- Smooth snake
- Sand lizard
- All bat species
- Hazel dormouse

Wildlife and Countryside Act 1981 (as amended)

Key piece of legislation consolidating existing wildlife legislation to incorporate the requirements of the Bern Convention and Birds Directive. It includes additional protection measures for species listed under the Conservation of Habitats and Species Regulations 2017

(as amended) and includes a list of species protected under the Act. It also provides for the designation and protection of Sites of Special Scientific Interest (SSSI).

Development which would adversely affect a SSSI is not acceptable except only in special cases, where the importance of a development outweighs the impact on the SSSI when planning conditions or obligations would be used to mitigate the impact. Developments likely to impact on a SSSI will likely require an Environmental Impact Assessment (EIA).

The Impact Risk Zones (IRZs) dataset is a GIS tool which details zones around each SSSI according to the particular sensitivities of the features for which it is notified and specifies the types of development that have the potential to have adverse impacts. Natural England uses the IRZs to make an initial assessment of the likely risk of impacts on SSSIs and to quickly determine which consultations are unlikely to pose risks and which require more detailed consideration. Local Planning Authorities (LPAs) have a duty to consult Natural England before granting planning permission on any development that is in or likely to affect a SSSI.

Further information on specific legislation relating to species protected under the Wildlife and Countryside Act 1981 (as amended) is detailed below, under Protection of Protected Species and Habitats.

Countryside and Right of Way Act 2000

Amends and strengthens the Wildlife and Countryside Act 1981 (as amended). It also details habitats and species for which conservation measures should be promoted.

Natural Environment and Rural Communities Act 2006

Section 40 of the Act places a duty on local authorities to have regard to the conservation of biodiversity in England whilst carrying out their normal functions. Section 41 comprises a list of Habitats of Principal Importance (HPIs) and Species of Principal Importance (SPIs) which should be considered.

Hedgerows Regulations 1997

Under these regulations it is an offence to intentionally or recklessly remove, or cause or permits another person to remove, a hedgerow. Important hedgerows are defined in Section 4 of the Regulations. This includes hedgerows that have existed for over 30 years or satisfies at least one criteria listed in Part II of Schedule 1.

Wild Mammals (Protection) Act 1996

Under this act wild mammals are protected from the intentional unnecessary suffering by crushing and asphyxiation.

Planning policy

National Planning Policy Framework (2021)

Details the Government's planning policies for England and how these should be applied, particularly to contribute to the Government's commitment to halt the decline of biodiversity. When assessing planning applications, LPAs should have regard to conserving and enhancing biodiversity by applying a number of principals, including:

- Avoiding impacts to biodiversity through appropriate site selection.
- Mitigating residual impacts.
- Encouraging the preservation and enhancement of biodiversity.
- Preventing the development of protected sites, such as SSSIs.

- Refusing permission where habitats that cannot be recreated, such as ancient woodland, would be lost.
- Encouraging good design that limits light pollution.

Local planning policy

Camden Local Plan (2017)

Policy A3 Biodiversity

The Council will protect and enhance sites of nature conservation and biodiversity. We will:

a. designate and protect nature conservation sites and safeguard protected and priority habitats and species;

b. grant permission for development unless it would directly or indirectly result in the loss or harm to a designated nature conservation site or adversely affect the status or population of priority habitats and species;

c. seek the protection of other features with nature conservation value, including gardens, wherever possible; Camden Local Plan | Protecting amenity 201

d. assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed;

e. secure improvements to green corridors, particularly where a development scheme is adjacent to an existing corridor;

f. seek to improve opportunities to experience nature, in particular where such opportunities are lacking;

g. require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species;

h. secure management plans, where appropriate, to ensure that nature conservation objectives are met; and

i. work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.

Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation. We will:

j. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;

k. require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;

I. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;



m. expect developments to incorporate additional trees and vegetation wherever possible.

ODPM Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System (2005)

The Government's Office of the Deputy Prime Minister (ODPM) Circular 06/05 (ODPM 2005) presents the legal requirement for planning authorities with regard to statutory designated sites. Planning approval should not be granted where impacts to statutory designated sites that are not connected to the site maintenance for nature conservation, or will have a significant effect on the site's conservation objectives and/or affect the site's integrity. Permission may be granted if the proposed development overrides public interest.

Protection of protected species and habitats

Amphibians

Natterjack toad, pool frog and great crested newt are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are also afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Natterjack toad, common toad, great crested newt and northern pool frog are also SPIs.

Reptiles

Smooth snake and sand lizard are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded additional protection under the Wildlife and Countryside Act 1981 (as amended).

Adder, grass snake, common lizard and slow-worm are all protected from killing and injury under the Wildlife and Countryside Act 1981 (as amended). All UK reptile species are SPIs.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). This includes damage and destruction of their nests whilst in use, or construction. Species listed under Schedule 1 of the Act are afforded protection from disturbance during the nesting season.

The following 50 bird species are SPIs: lesser redpoll, aquatic warbler, marsh warbler, skylark, white-fronted goose, tree pipit, scaup, bittern, dark-bellied brent goose, stone-curlew, nightjar, hen harrier, northern harrier, hawfinch, corncrake, cuckoo, Bewick's swan, lesser spotted woodpecker, corn bunting, cirl bunting, yellowhammer, reed bunting, red grouse, herring gull, black-tailed godwit, linnet, twite, Savi's warbler, grasshopper warbler, woodlark, common scoter, yellow wagtail, spotted flycatcher, curlew, house sparrow, tree sparrow, grey partridge, wood warbler, willow tit, marsh tit, dunnock, Balearic shearwater, bullfinch, roseate tern, turtle dove, starling, black grouse, song thrush, ring ouzel and lapwing.

Badger

Badger is protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to kill or injure a badger; to damage, destroy or block access to a badger sett; or to disturb badger in its sett. The Act also states the conditions for the Protection of Badgers licence requirements.

Bats

All bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended), as detailed above. Bats are further protected under the Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Deliberately or recklessly damage or destroy any structure or place which bat(s) use for shelter or protection.
- Disturb bat(s) while occupying a structure or place which it uses for shelter or protection.
- Obstruct access to any structure or place which they use for shelter or protection.

Furthermore, seven bat species are SPIs, covered under Section 41 of the NERC Act 2006. These include western barbastelle, Bechstein's, noctule, soprano pipistrelle, brown long-eared, lesser horseshoe and greater horseshoe.

Other mammals

West European hedgehog, brown hare, mountain hare, pine marten, harvest mouse, polecat and red squirrel are all SPIs.

The following mammals are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended): wildcat, brown hare (Schedule 5A), mountain hare (Schedule 5A), pine marten and red squirrel.

Habitats of Principal Importance

Section 41 of the NERC Act 2006 details 56 HPIs, divided into 10 broad categories: arable and horticulture, boundary, coastal, freshwater, grassland, heathland, inland rock, marine, wetland and woodland.

Ancient woodland and veteran trees

The NPPF 2021 states that 'Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss'. In addition, Natural England's standing advice for ancient woodland indicates that a 15 m buffer is retained between ancient woodland and any works or development. Ancient woodlands, and ancient and veteran trees, may also be protected by Tree Preservation Orders.