HYBRID ECOLOGY LTD
joined up thinking

Ecological Impact Assessment:

Branch Hill, Hampstead

On behalf of:

Almax Group

Prepared by:
Gemma Holmes BSc (Hons) ACIEEM
Contact: gemma@hybrid-ecology.co.uk

Report version control:
Version 1:
December 2019

Non-technical Summary

Branch Hill (the site) was initially visited in May 2018 in response to proposals for change of use. A Preliminary Ecological Appraisal (PEA) was subsequently issued which recommended further surveys on buildings and trees for bats in addition to presenting several ecological enhancement opportunities.

The site contains "Branch Hill House", an Edwardian manor house, and an adjoining 1960s extension, set in grounds containing a retained area of woodland, notable boundary trees and a narrow garden to the rear.

The proposal involves the demolition of the 1960s extension and external alterations to Branch Hill House The woodland and boundary trees will remain and the grounds will be landscaped to include wildlife friendly planting.

Key issues:

- The woodland and notable tree specimens will be afforded suitable protection during the construction phase. All protective measures should accord with approved plans and BS 5837 (2012) Trees in Relation to Design, Demolition and Construction – Recommendations.

- Branch Hill House was assigned 'high' bat roost potential due to the close proximity to Hampstead Heath, presence of loft voids and external crevices. Three dedicated emergence/re-entry surveys were recommended in the PEA, and subsequently undertaken. No roosts were identified. Spedan Close was identified as a commuting corridor for low numbers of common pipistrelle bats. Foraging activity is focused around groups of trees and the woodland edge. Lighting will be controlled to ensure this behaviour continues.

- Trees on/bordering the site are likely to support breeding birds March-August inclusive. It is recommended that tree work avoids this period wherever practically possible. Where this is not possible, nest checks will be required immediately before work commences.

- The grassland to the west of Branch Hill House has potential to attract transient reptiles, if left unmanaged. Precautionary measures and habitat management recommendations are included in this report.

Key opportunities:

Re-development presents an opportunity for biodiversity net-gain, including woodland management, externally mounted bat roost boxes (summer and winter), bird boxes, insect boxes and wildlife friendly planting.

There are further opportunities to enhance the site for local Priority Species – as described in the Opportunities section of this report.

The above measures would contribute to Government aims under paragraph 170d of the National Planning Policy Framework (2019); which requires all development to demonstrate biodiversity net-gain.

Table of Contents

1.0 Introduction

This report has been prepared by Gemma Holmes; Consultant Ecologist at Hybrid Ecology Ltd. Gemma is a qualified ecologist with 11 years' experience in professional survey work, holding licences to survey for great crested newt and bats in the UK (Licence numbers 2015-19096-CLS-CLS and 2016-27305-CLS-CLS respectively).

Almax Group instructed Hybrid Ecology to produce an Ecological Impact Assessment for Branch Hill, Hampstead. The site is located to the north-west of Hampstead, centred on grid reference TQ 26039 86068. It covers approximately 0.63 hectares. A Location Plan and Aerial View are provided in Figures 1 and 2, respectively.

Accessed through wrought iron gates, Branch Hill House is an imposing detached property largely reconstructed in the early Edwardian era and set within a wooded enclave with views from the rear balconies of the surrounding area. Previously used as a residential care home by Camden Council, the main property is arranged over four floors including mansard roof and lower ground floor. The rear elevation is complimented with large balconies supported on columns. The property was enlarged by a two-storey extension constructed in the 1960s to provide further accommodation in its use as a residential care home. Branch Hill Lodge has been disused since 2015.

The development involves change of use of Branch Hill House from care home (Use Class C2) to residential (Use Class C3) and associated external alterations, demolition of the 1960s extension and erection of replacement building, including basement, comprising residential accommodation (Use Class C3), ancillary plant, access and servicing and car parking.

This EcIA has been provided to:

1) Identify and describe all potentially significant ecological effects associated with the proposed development.

2) Set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects

3) Identify how mitigation measures will/could be secured

4) Provide an assessment of the significance of any residual effects

5) Identify appropriate enhancement measures

Figure 1. Location plan

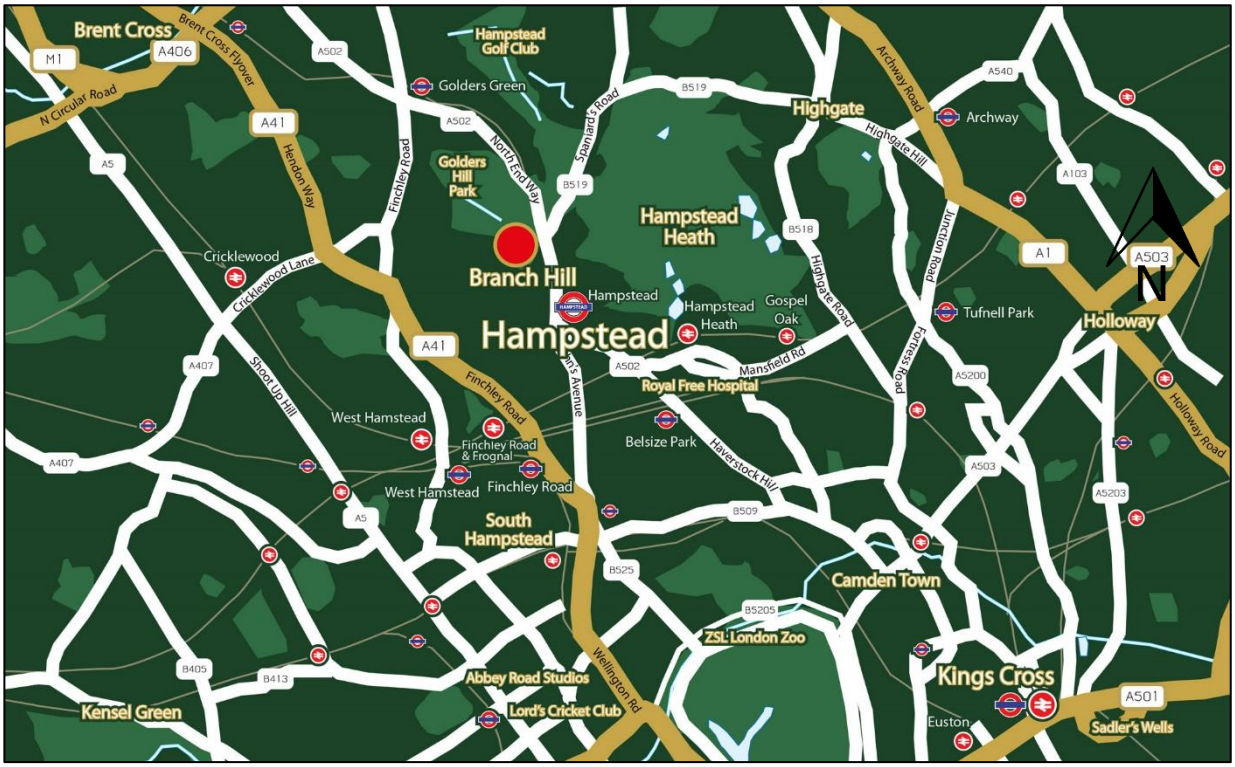


Figure 2. Aerial view

2.0 Planning Policy and Legislation

Relevant Local Planning Policy: Camden Local Plan - Policy A3 Biodiversity

Please note, the following text has been lifted directly from the Camden Local Plan.

The Council 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;*

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.*

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;*

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

Relevant National Planning Policy and Legislation

National Planning Policy Framework (2019) Conserving and enhancing the Natural Environment Paragraph 170 – 177

The following policies are relevant to this site:

170 Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

175 (d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

The following legislation is relevant to work on this site:

- *The Conservation of Habitats and Species Regulations (2017) in respect of roosting bats in buildings and trees.*
- *The Protection of Badgers Act (1992) in respect of badger.*
- *Wildlife and Countryside Act (1981, as amended) in respect of reptiles (all UK species) and nesting birds)*
- *The Natural Environment and Rural Communities Act (2006) in respect of Priority Habitats and Species*

3.0 Methodology: Desktop Study

Scope of assessment

The Zone of Influence for a project is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities. In addition to the red line boundary, the survey included a walkover of Heysham Lane and the adjoining development to the west as well as disused land to the south.

The following ecological features have been considered in this EcIA:

- **Habitats**: Buildings, woodland, semi-improved grassland, amenity grassland, ornamental planting and individual trees
- **Protected species:** Bats, reptiles, badger and nesting birds

Consultation has been undertaken with the following parties over the course of Hybrid Ecology's involvement in this site:

- Almax Group: Coordination of the planning documents and provision of the site layout
- Planit-ie for landscaping proposals
- Caroline Birchall – Ecologist for Camden Council

Landscape context

Aerial imagery (Google Earth Pro, 2019) was used to examine the landscape context of the site.

Designated sites and Priority Habitats

Greenspace Information for Greater London (GIGL) mapping was used to determine any statutory and non-statutory designations within a two-kilometre radius of the site including:

- **Statutory sites:** Ramsar, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs)
- **Non-statutory sites and protected habitats:** Sites of Importance for Nature Conservation (SINCs) Special Roadside Verges (SRVs), ancient woodland and Priority Habitats

Data search

Greenspace Information for Greater London (GIGL) was commissioned on 31st May 2018 to undertake a data search for protected sites, priority habitats and protected and priority species within a 2km radius of the site.

4.0 Methodology: Habitats and Species

Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey was carried out on 29th May 2018 by ecologist Gemma Holmes (BSc hons ACIEEM) and assistant surveyor Oliver Coyne. The weather conditions were sunny and windy with an air temperature between 10-12°C. The survey was undertaken in accordance with the Handbook for Phase 1 Habitat Survey (JNCC 2010). Habitats on and adjacent to the site were mapped and target notes added for any interesting or notable biodiversity features.

Protected/priority species scoping

A scoping assessment was undertaken for the presence of legally protected and priority species using the methodologies below and overleaf.

Bats

Preliminary Roost Assessment (PRA)

A PRA was carried out on Branch Hill House and the extension on 29th May 2018. A hibernation survey, following the same methodology as below was undertaken on the basement in December 2018 and January 2019.

A search was made of the exterior of both buildings and basement to identify potential or actual bat access points and roosting places (although it should be noted that often features are not visible from ground level) and to locate any evidence of bats such as live or dead specimens, bat droppings, urine splashes, fur-oil staining and/or squeaking noises. The search included the ground, particularly beneath potential access points for field signs including droppings.

A systematic search was made of the interior of both buildings to identify potential or actual bat access points and roosting places and to locate evidence of bats including specimens, droppings, urine splashes, fur-oil staining and feeding remains.

The PRA was carried out quietly and features were checked in a systematic manner, working upwards from the entrance. Lofts were inspected last.

Trees on site were also inspected from ground-level for potential roost features. Such features include woodpecker holes, wounds, cavities, fluting and hazard beams.

Emergence/Re-entry Surveys

Branch Hill House was assigned “high” roosting potential due to presence of suitable internal loft voids and external crevices. The extension was assigned negligible bat roost potential due to absence of voids and crevices. Branch Hill House was subject to three separate dusk and dawn surveys (in accordance with Bat Conservation Trust Guidelines (2016)) on 23rd June, 10th July and 24th July 2018.

Surveys were undertaken by a team of surveyors that are appropriately qualified, licensed and suitably experienced.

Surveyors were stationed to cover all external access points identified during the PRA and were equipped with Echo Meter Touch 2 Pro bat detectors and Clu-lite torches with red filters.

Survey timings, in accordance with BCT Guidelines were:

- Dusk: Survey commenced 30 minutes prior to dusk and continued up to 120 minutes after dusk
- Dawn: Survey commenced 2 hours prior to dawn until 15 minutes after sunrise

Surveys were undertaken when temperatures exceeded 10 degrees C, in dry and calm conditions. Notes and recordings were made for any bats emerging or re-entering or for any foraging or commuting occurring on or adjacent to the site.

Aerial bat inspections on trees

One tree was subject to an aerial inspection. This was undertaken on 18th December 2018 and involved a team of two qualified climbers ascending to the features via rope and harness and inspecting with a Rigid CA350 endoscope. Any signs of roosting bats were identified.

Other legally protected species

In addition to bats, the survey also included an assessment of the site's potential to support other legally protected species; or Species and Habitats of Principal Importance, as identified by Section 41 of the Natural Environment and Rural Communities Act 2006, including great crested newt, otter, dormouse, badger, nesting birds (including barn owl) and invasive plants.

Where best practice guidelines exist, these have been used to assess the likelihood that individual species will be present, for example Habitat Suitability Index for Great Crested Newt (Oldham et al, 2000).

5.0 Limitations

General

Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. Wildlife is transient and mobile, and results of a survey can reasonably vary from one day to the next or across the seasons.

This report does not constitute a full botanical survey. It is considered unlikely, however, given the use of the site and its management that there would be any protected or noteworthy plants present.

The protected species assessment provides a view of the likelihood of protected species occurring on the site based on the known distribution of species in the local area (obtained via the local records office) and the suitability of the habitat. It should not, however, be taken as providing a full and definitive survey of any protected species/group.

Biological records can be patchy, and some areas/species are under recorded, therefore absence of records for a species or group does not necessarily mean that there is a lack of ecological interest. Equally, the presence of records does not necessarily mean the habitat is still suitable for the species/group in question.

Site-specific

Dense insulation covered rafters in the loft voids, which prevented a thorough inspection on health and safety grounds. To provide confidence, further emergence/re-entry surveys were carried out in the middle of the bat active season and were spread two weeks' apart in line with current Guidelines to ensure the best possible spread of data.

6.0 Results: Desktop Study

Landscape context

Branch Hill House is located on the western side of Branch Hill, approximately 250m to the west of Hampstead Town Centre. The site is bound by Heysham Lane to the north, Branch Hill to the east, allotments to the south and the Grade II listed Spedan Close Estate to the West. There is an access road which dissects the site into two distinct halves, known as Spedan Close.

The character of the location is suburban. Medium density housing immediately surrounds the site, along with significant green corridors including areas of woodland, allotments and associated grassland generally extending to the south and west of the site. Branch Hill is located within its own grounds in a conservation area and exclusive part of Hampstead.

The most significant landscape feature is Hampstead Heath, c. 250 metres north-east of the site beyond Heath Street at its closest point. Hampstead Heath contains a Site of Special Scientific Interest (SSSI): Hampstead Heath Woods, and is designated as a Site of Importance for Nature Conservation (SINC) in its own right – see below.

Designated sites and protected habitats

A search was made via Greenspace Information for Greater London (GIGL) for any designated sites within and beyond 2km of the development site in order that possible impacts could be identified and mitigated.

The following were identified:

- Sites of Special Scientific Interest (SSSI): Hampstead Heath Woods
- Local Nature Reserves (LNR)
- Sites of Importance for Nature Conservation (SINCs)

Sites of Special Scientific Interest (and Local Nature Reserves) – see Figure 3.

Hampstead Heath Woods are examples of long-established high forest woodlands with an exceptional structure, comprising an abundance of old and over-mature trees providing dead wood habitat for a range of invertebrate species. The SSSI also includes an adjacent small valley containing an acidic flush with developing bog-moss communities. These woods are approximately 1.2km north-east of the site. There are no ecological or hydrological links between the site and the SSSI and given the small-scale of works proposed, impacts are not anticipated.

Whilst the development site lies within the Impact Risk Zone for this SSSI, Natural England clarify this scale and type of development does not warrant further consultation.

Belsize Wood and Westbere Copse lie c. 1.7km south-east and south-west of the site respectively. There are no ecological connections between the sites and significant urban land-use exists in between. Impacts are unlikely.

Sites of Importance for Nature Conservation – see Figure 4

There are 16 SINCs within a 2km radius of the site. The site lies on the eastern boundary of CaBI02: Branch Hill. It contains areas of woodland and grassland that include the private grounds of three houses – although Branch Hill Lodge is not specifically mentioned in the citation – see below.

'Branch Hill consists of several individual blocks of woodland, interposed with small areas of grassland. It also incorporates the private grounds of three large houses: Combe Lodge, Oak Hill House and Heysham House. Branch Hill Allotments are also included in the site. The largest individual block of woodland is Oak Hill Wood, this is secondary woodland which includes sweet chestnut (Castanea sativa), horse-chestnut (Aesculus hippocastanum), sycamore (Acer pseudoplatanus), oak (Quercus sp.), white poplar (Populus alba), common lime (Tilia x europaea) and holly (Ilex aquilifolium). Other species have colonised, including silver birch (Betula pendula), downy birch (B. pubescens), elm Ulmus sp.), ash (Fraxinus excelsior) and elder Sambucus nigra).'

Whilst the site contains a block of woodland included in the SINC designation, the applicant is retaining the woodland and all tree-lined boundaries. The woodland is in deteriorating condition with dominance of cherry laurel and rhododendron and would benefit from management. Management in principle was discussed and agreed with Caroline Birchall, Ecologist for Camden Council during a site meeting on 18th December.

MO72 Hampstead Heath (including Hampstead Woods) is designated as a SINC of Metropolitan Importance. This area of land lies c. 70 metres north-east of the site, beyond Spedan Close and Branch Hill; both minor roads. The development is strictly confined to the existing buildings and hard standing and retains a wooded buffer between the site and this SINC. Whilst the close proximity is noteworthy, impacts are not anticipated.

Figure 3. Statutory Designations

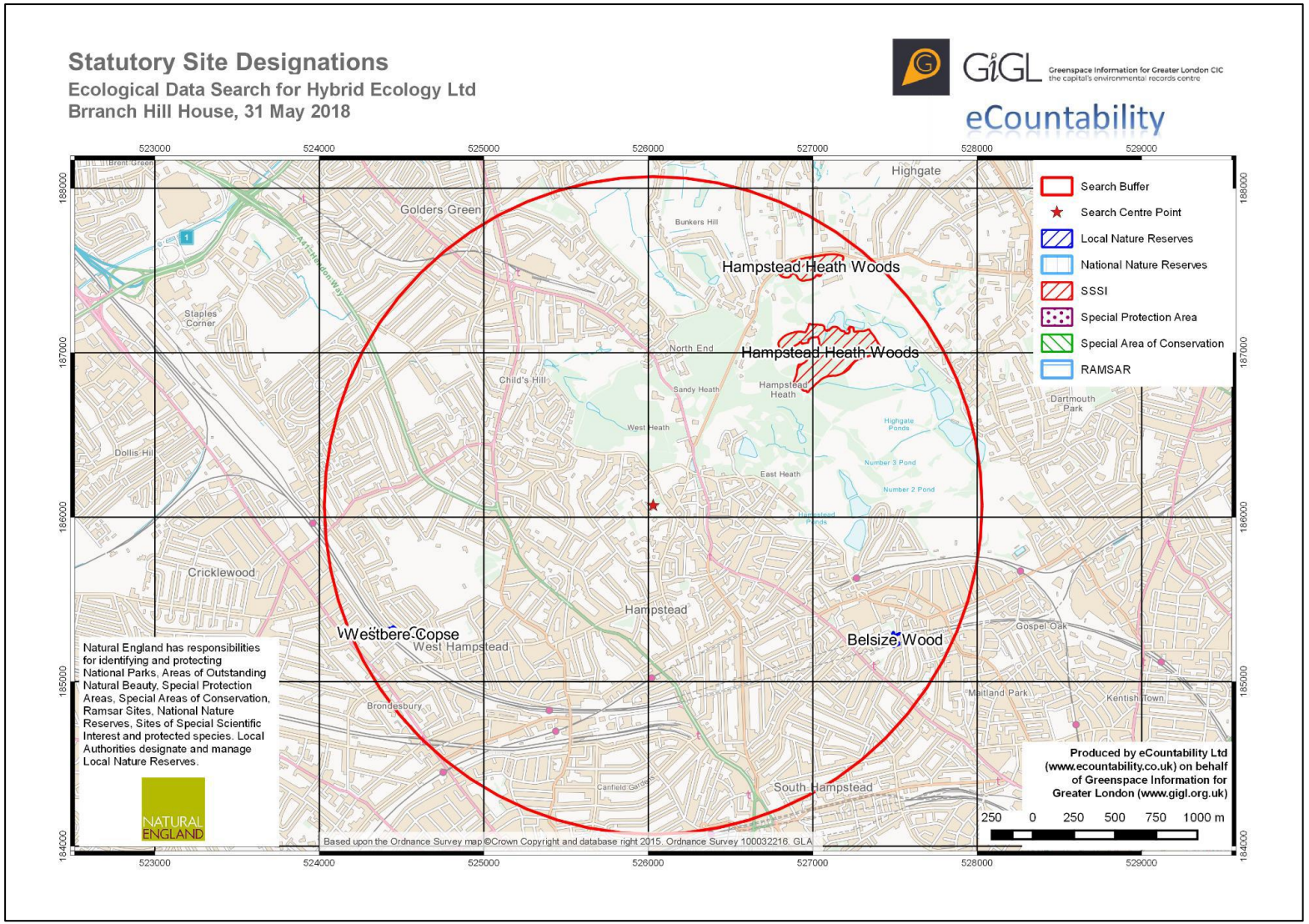
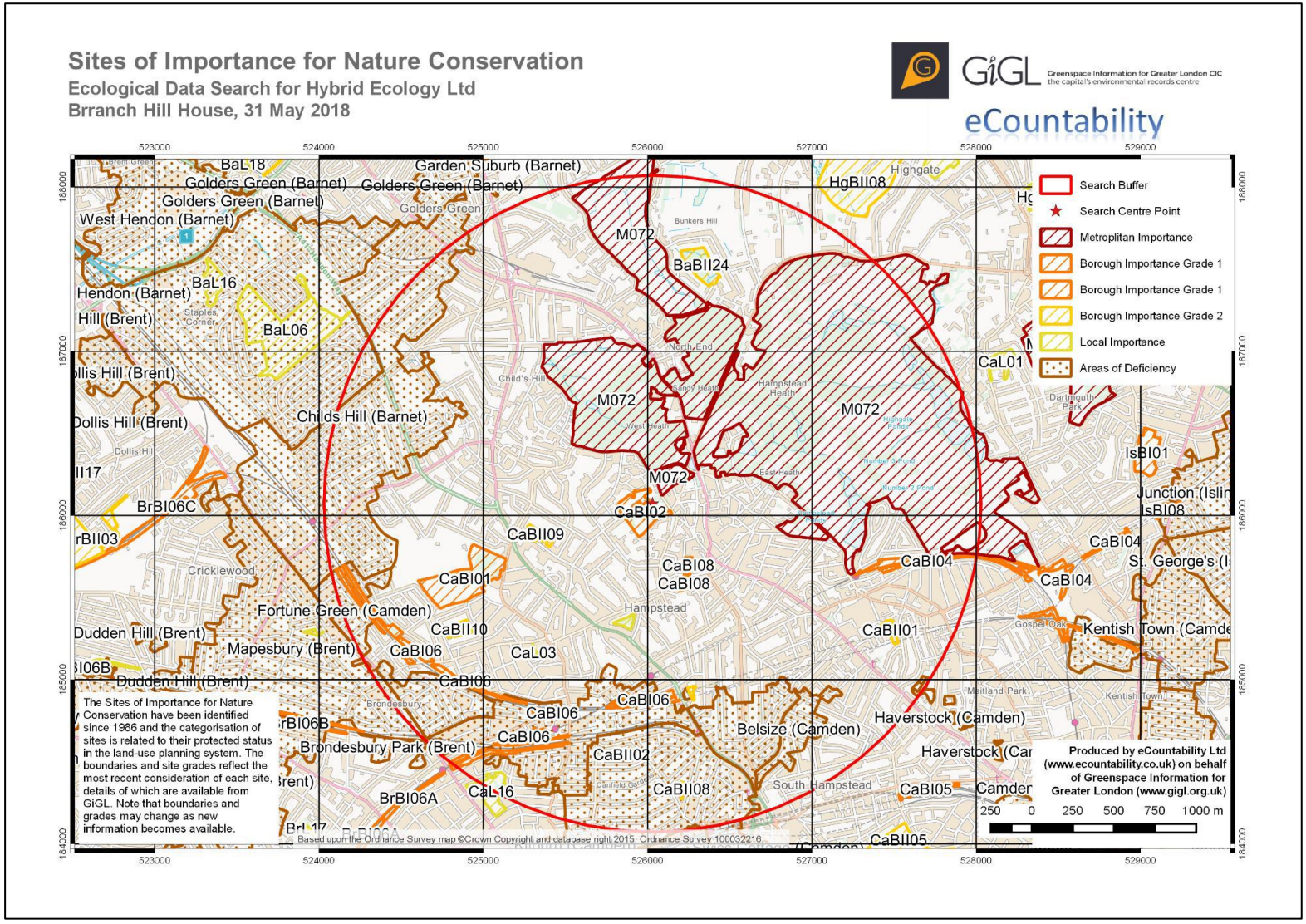


Figure 4. Sites of Importance for Nature Conservation



7.0 Results: Data Search

Protected and Priority Species records returned from Greenspace Information for Greater London (GIGL) are shown in Table 1. GIGL returned extensive records for the local area. Only those relevant to habitats within the site have been included below. They are cross-referenced where appropriate in later sections of this report.

The full GIGL report has been issued to Almax Group in accordance with the Terms and Conditions of data use.

Table 1. Greenspace Information for Greater London Records Search

Species/species group	Level of legal protection	Closest distance recorded from site (m)	Bearing from site	Year last recorded
Bats – Common and soprano pipistrelle, natterer's, noctule, Leisler's, serotine	Conservation of Habitats and Species Regulations (2017). Protected from killing, injury, habitat destruction.	122	N	2010
Great crested newt		1744	N	2002
Slow worm	Wildlife and Countryside Act (1981, as amended) Schedule 5. Protected from killing and injury.	1383	SW	2013
Common lizard		2030	N	2002
House sparrow	Priority species. Protection via the NERC Act (2006)	621	N	2017
Hedgehog		626	N	2000

8.0 Results: Phase 1 Habitat Survey

Habitats

A Phase 1 plan and target notes are provided in Figure 6 accompanied by habitat descriptions below. Target notes are described/expanded upon in the text throughout Section 5. Photographs are provided in Figure 9.

The site is accessed off Spedan Close, which joins Frognall Rise to the south-east and Heysham Lane to the north-west.

Buildings

Two buildings (B1 and B2) exist on site.

B1 (Branch Hill House – TN1) is a large, 3-storey Victoria mansion house arranged over four floors including mansard roof and lower ground floor. The rear elevation is complimented with large balconies supported on columns. The construction is brick with timber window frames, slate tiled roof sections and decorative concrete additions. The exterior is largely well-sealed with limited signs of damage or disrepair other than two sections of lifted lead flashing. There are numerous pitched roof sections covered with slate tiles. There are three large loft voids, all of which have been fitted with roof vents.

To the north of Branch Hill House is a basement comprising three rooms. They are all accessible to wildlife to varying degrees; through drilled holes at the top of timber doors on the southern aspect and through a gap around a drain cover at ground level which allows access into one of the rooms.

B2 is a 1960s addition, constructed from brick, with a flat roof and PVC windows and door frames. It is intact and well-sealed from the exterior with no areas of damage or disrepair noted.

Mixed woodland

An area of mixed woodland covering c. 0.3 hectares exists to the north/east of the site in a triangular shape. It contains mature sycamore, cherry laurel, rhododendron, monkey puzzle, yew, holm oak, Norway maple and silver birch trees. The topography slopes steeply uphill to the north. Ground flora is largely absent owing to the dense canopy layer shading the woodland floor, observable species include ivy, scattered bramble, colt's foot, wood avens and green alkanet. A fox den was identified close to the northern boundary of the woodland (TN2). A disused badger sett was identified close to the northern corner, approximately 30 metres from Spedan Close.

Individual trees

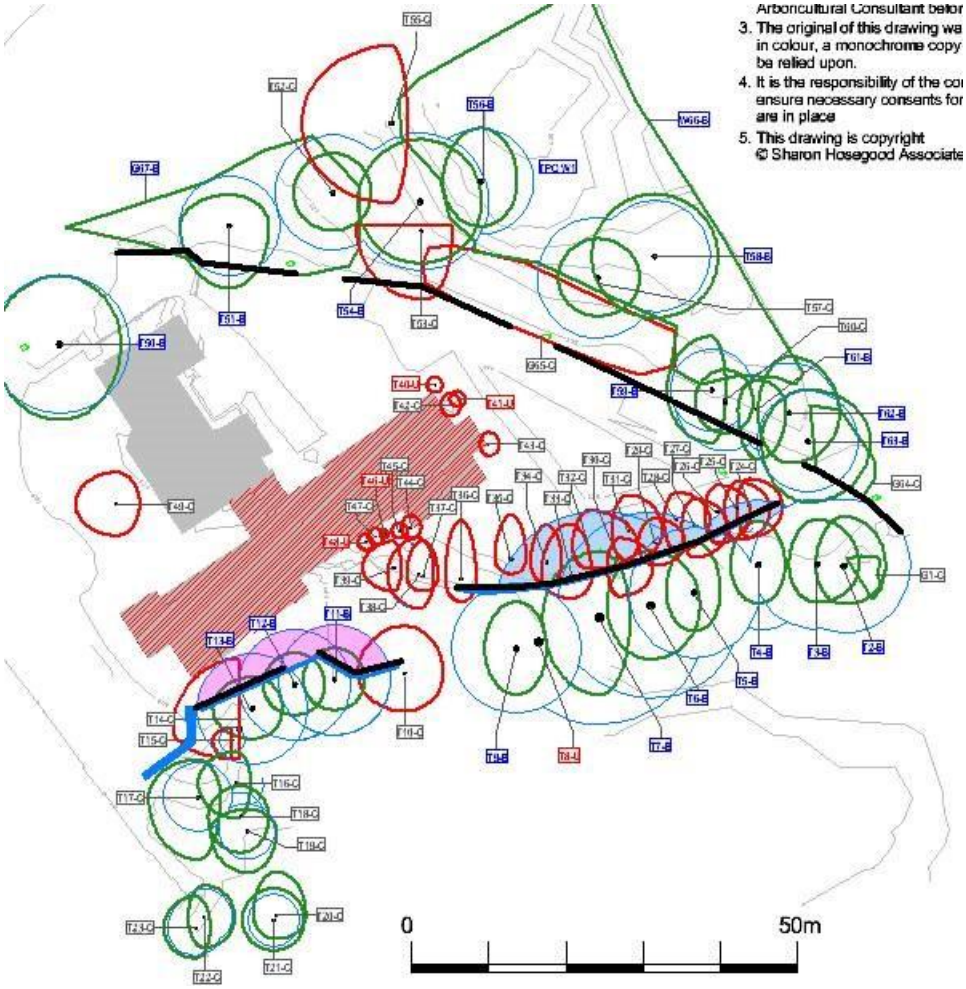
Several trees exist throughout the site and in the immediate surroundings. To the north-west of B1 is a group of trees including a mature, ivy-clad sycamore tree and younger copper beech and holly. They are raised above ground behind a retaining wall adjacent to Spedan Close. To the north of this group is a smaller group of cherry laurel, sycamore, holly and privet.

To the north of the semi-improved grassland is an historic lime pollard.

A prominent row of mature lime and horse chestnut trees extend west from the site entrance, to the south of a footpath. Immediately to the north of the path is a high retaining wall beyond which are several mature holly trees. A group of mature horse chestnut, lime, sycamore and beech trees exist in the southern corner. To the north-west of Branch Hill House is a mature sycamore, beyond which is a group containing a mature lime pollard, with cherry laurel and sycamore (off-site).

Trees have been surveyed by Sharon Hosegood Associates. An extract from the Tree Survey and Constraints Plan, illustrating tree removals is provided in Figure 5 below.

Figure 5. Tree removals (extract from Sharon Hosegood Associates Tree Constraints Plan)



Semi-improved grassland

An isolated area of semi-improved grassland exists on a bank to the west of Branch Hill House. It is essentially an overgrown amenity lawn comprising common grasses and herbs including cocksfoot, annual meadow grass, ground-elder, yarrow, meadow foxtail, meadow buttercup, sorrel, red clover, mallow, ribwort plantain. A mammal track crosses this grassland north to south.

Tall ruderal

A small area of tall ruderal vegetation exists in the southern corner of the site. Observable species include common nettle, white-dead nettle, wood avens, spear thistle and ligularia. This area is heavily shaded by mature sycamore and lime trees.

Amenity grassland

An isolated area of mown amenity grassland exists around the 1960s extension. A small lawn also exists to the north of B1. It contains willow herb, dandelion, creeping thistle, hedge garlic, daisy, creeping buttercup, colts foot, common ragwort and mouse-ear chickweed.

Hard standing

Hard standing surrounds both buildings and covers a car park in front of B1. A hard-standing driveway enters the site south-east and exits north-west.

Ornamental planting

There are several small ornamental planting beds surrounding B1 and B1. Species include rose, cherry laurel, palm and mahonia.

Value of ecological receptors

None of the habitats on site are "irreplaceable" in planning terms. There is no ancient woodland, unimproved grassland nor any veteran trees within the site boundaries.

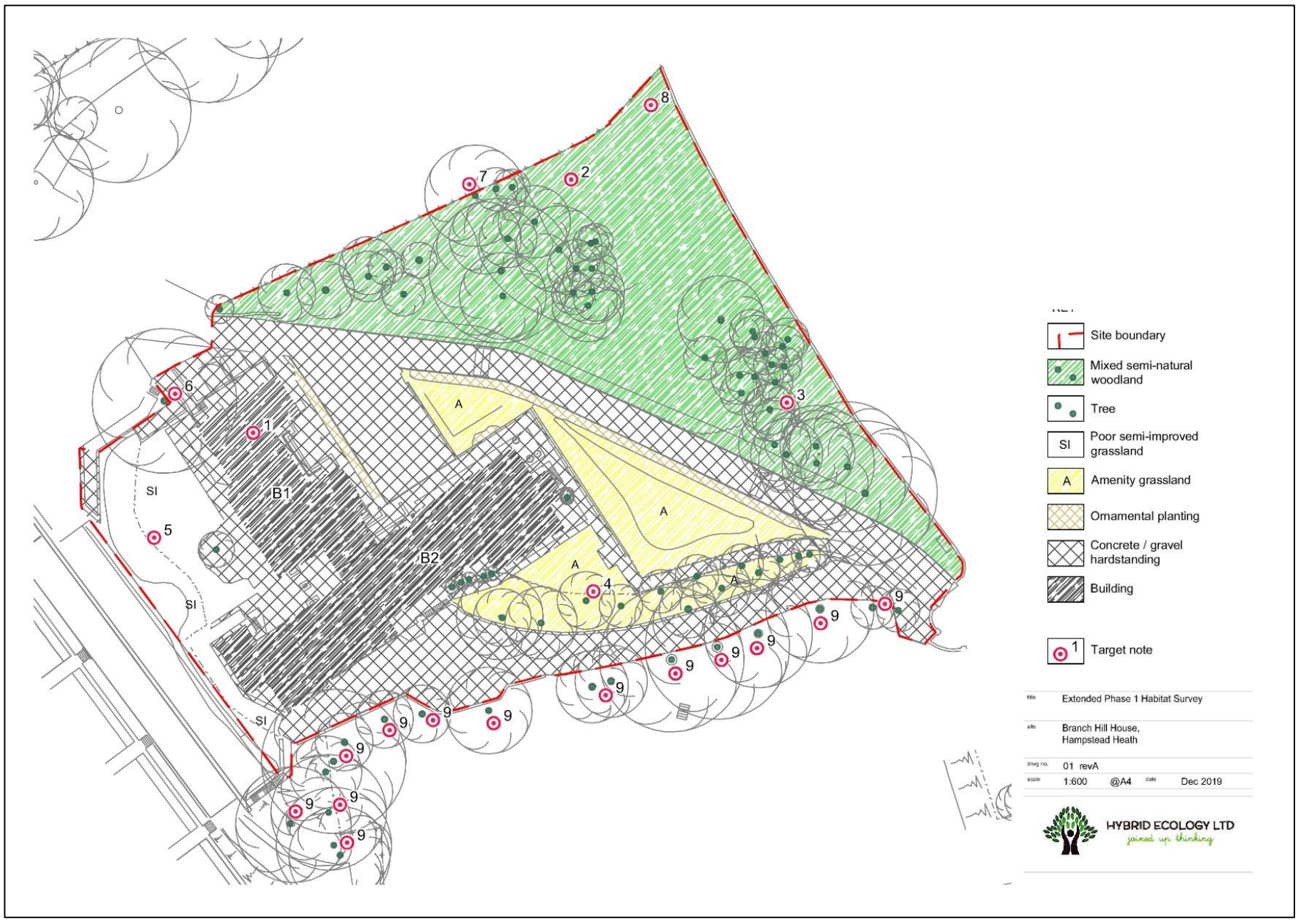
The woodland to the north of the site is noteworthy for its value to nesting birds and mammals including hedgehog, badger and fox. The microclimate it provides attracts insects particularly along the southern edge which in turn provides good conditions for foraging and commuting bats. The development presents an opportunity to improve the conditions of the woodland for wildlife.

There are several mature trees on the site. All trees have been subject to an Arboricultural Impact Assessment and will be protected in accordance with BS 5837 (2012): Trees in Relation to Design, Demolition and Construction – Recommendations. Retention of the woodland and all healthy tree specimens will ensure continued habitat connectivity.

All other habitats on site are common and widespread, they are indicative of a managed environment, albeit with small, isolated areas which may attract wildlife and facilitate dispersal through the local landscape.

The ecological assets on site will remain largely unaffected, thus there will be no impacts to ecological connectivity as a result of the proposed works.

Figure 6. Phase 1 Habitat Plan and Target Notes



Target Note	Description
TN1	B1 Branch Hill House. Large Victorian house with some minor areas of lifted lead flashing. Large loft spaces suitable for several bat species.
TN2	Fox den on the northern boundary of the mixed woodland.
TN3	Mixed woodland on a steep slope containing mature broadleaved and coniferous specimens.
TN4	Mature holly tree with potential roost feature.
TN5	Semi-improved grassland bank.
TN6	Mature sycamore tree.
TN7	Holm oak tree with potential roost features.
TN8	Outlier badger sett.
TN9	Prominent row of mature lime trees.

9.0 Results: Protected/Priority Species Scoping

Bats

GIGL returned records for common pipistrelle, soprano pipistrelle, Leisler's, noctule and natterer's bats. The closest record is a common pipistrelle, 122m north of the site.

Common pipistrelle is found in modern houses, in/under external fixtures including weatherboarding, tiles, lead flashing and boxed eaves but can also be found in tree crevices. Noctule and Leisler's bats roost almost exclusively in tree holes. Natterer's bats are more generalist, roosting in trees, stone buildings, barns and modern buildings with large, airy loft spaces.

In addition to safe, sheltered, dry roosting spaces, bats also require foraging and commuting habitat. Both are important as a food resource and to aid dispersal through the landscape.

Bats are legally protected under the Conservation of Habitats and Species Regulations (2017) from killing, injury, roost destruction, roost disturbance and roost obstruction.

Preliminary Roost Assessment

Branch Hill House (including basement)

- Two areas of lifted lead flashing were noted externally on B1 - see Figure 7.

- Branch Hill House contains three large loft spaces. Rafters and purlins are modern cut timber, lacking the crevices that traditional timber provides. There is no lining, and all timber is exposed. Several plastic vents have been fitted in all loft spaces - they appeared to have been fitted recently. Drafts were felt through the vents, but on external inspection it was clear that mesh was fitted, preventing bat access. Loft voids are large and uncluttered, with a floor to ridge height of approximately 3 metres, providing good conditions for roosting bats. All lofts were accessed but a deep covering of insulation meant some areas could not be inspected. All three lofts are linked via gaps in dividing breeze block walls. No bats, droppings or other signs of roosting were noted in any of the loft spaces inspected. No light was seen to enter from the exterior.

- Despite the lack of roosting evidence, B1 was classified as having high roosting potential, owing to the large, airy loft spaces, access features and the position in the landscape. Three separate dusk or dawn surveys were required in accordance with BCT Guidelines, spaced two weeks apart and between May and September inclusive to determine the presence or likely absence of roosting bats and to inform mitigation/licensing as appropriate.

- The basement to the north of B1 presented good conditions for hibernating bats. As such, two hibernation surveys were undertaken in December and January 2018 to quantify this potential.

1960s extension

- No features externally or internally were identified which could facilitate roosting behaviour. As such, the extension was assigned negligible roosting potential and required no further survey.

Trees

One small potential roost feature (PRF) was identified on a holly tree close to the southern boundary (TN4). It is recommended that the feature is inspected immediately prior to felling.

A holm oak tree close to the northern boundary of the woodland (TN7) contained two possible roost features. As this tree could be removed on safety grounds, an aerial inspection was recommended to rule out bat presence before any tree work is undertaken.

Foraging/commuting

The site environment fits within the high habitat suitability threshold (BCT, 2016) for foraging and commuting bats, as it has direct connectivity to Hampstead Heath north/east and woodland/allotments in very close proximity. However, from a bat activity perspective, it is unlikely the development would impact the favourable conservation status of common bat species in their natural range - as foraging habitat will be retained and commuting corridors will not be severed.

Further survey results:

Presence/absence surveys on Branch Hill House

As the proposal involves external alterations to Branch Hill House, further dusk/dawn surveys were required in accordance with Bat Conservation Trust Guidelines to quantify bat potential and inform mitigation as appropriate. The surveys were undertaken as recommended. Surveyor positions are provided in Figure 8. The full results are provided in Table 2.

Figure 7. Plan showing external access features.

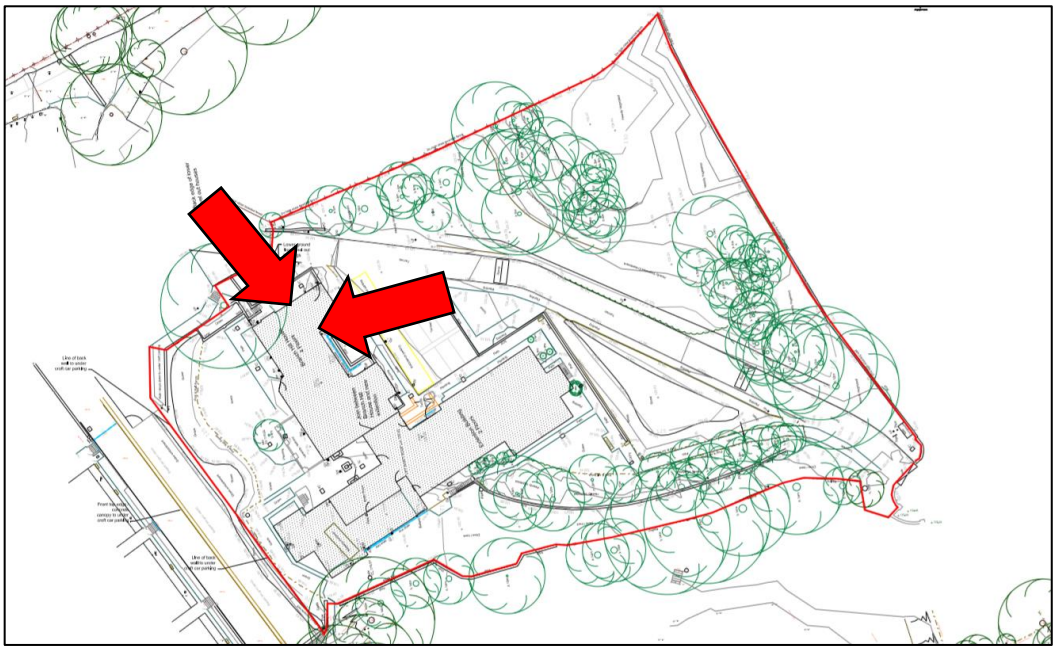


Figure 8. Surveyor positions for dusk/dawn surveys

Table 2. Results of presence/absence (dusk/dawn) surveys at Branch Hill House (BHH)

Date	Sunset / Sunrise Time	Start Time	End Time	Temperature (°C)		Wind (Beaufort)	Rain	Cloud Cover
				Max	Min			
23rd June 2018	21:22	20:50	23:22	20	18	0-1	None	20%
10th July 2018	04:45	02:41	05:00	15	13	1	None	Clear
24th July 2018	21:00	20:30	23:00	27	24	0-1	None	Clear

Date	Surveyor location	Summary
Dusk 23rd June	S1: North of BHH	First bat: 21:31 (common pipistrelle) Last bat: 23:00 (common pipistrelle) **Small numbers of individual common pipistrelle bats recorded commuting along the access road west to east and briefly foraging around trees along the northern boundary. No emergence.**
	S2: North-east of BHH	First bat: 21:31 (common pipistrelle) Last bat: 22:59 (common pipistrelle) **Small numbers of individual common pipistrelle bats recorded commuting along the access road west to east. No foraging activity observed. No emergence.**
	S3: Southern aspect	First bat: 20:50 (common pipistrelle) Last bat: 23:00 (common pipistrelle) **Most bats were heard but not seen. Small numbers of individual common pipistrelle bats were seen passing in front of Branch Hill House from west to east. No emergence.**
Dawn 10th July	S1: North of BHH	First bat: 02:41 (common pipistrelle) Last bat: 04:26 (common pipistrelle) **Several species detected including common pipistrelle, soprano pipistrelle, noctule and myotis sp. The last bat, a common pipistrelle was heard 34 minutes before sunrise. No bats seen re-entering**.
	S2: North-east of BHH	First bat: 03:01 (common pipistrelle) Last bat: 04:27 (common pipistrelle) **All bats were heard but not seen. No bats seen re-entering**.
	S3: Southern aspect	First bat: 02:52 (common pipistrelle) Last bat: 04:19 (common pipistrelle) **Last bat heard 41 minutes prior to sunrise. Small numbers of common pipistrelle bats were seen but not heard. No bats seen re-entering.**
Dusk 24th July	S1: North of BHH	First bat: 21:36 (common pipistrelle) Last bat: 22:40 (common pipistrelle)

		First bat detected 36 minutes after sunset commuting NW to SE along the woodland edge. Small numbers of bats were identified foraging around trees to the north. No bats seen emerging.
	S2: North-east of BHH	First bat: 22:02 (common pipistrelle) Last bat: 22:46 (common pipistrelle) **First bat detected over an hour after sunset. All bats detected were heard but not seen. No emergence.**
	S3: Southern aspect	First bat: 21:44 (common pipistrelle) Last bat: 22:51 (common pipistrelle) **Only four contacts during the survey period, all common pipistrelle, heard but not seen. No emergence.**

Summary of emergence/re-entry activity:

- Detection times were consistent with bats emerging from/re-entering to other buildings/trees and commuting through the site, rather than emergence from/re-entry to structures or trees on site.
- Small numbers of common pipistrelle bats were identified foraging around trees to the north of Branch Hill House
- Small numbers of common pipistrelle bats were identified commuting generally west to east along the southern edge of the woodland.
- Several other species including soprano pipistrelle, myotis sp. and noctule were heard infrequently but were not seen, indicating they are active away from the site, potentially in adjoining woodland/gardens.

Hibernation surveys

The basement rooms were inspected on 5th December 2018 and 22nd January 2019 for the purposes of identifying any hibernating bats. Temperatures were conducive to hibernation with the previous night having been below zero and there was a persistent frost on both occasions. One dropping, characteristic of pipistrelle was identified on an internal wall on 5th December 2018. No bats were seen. No droppings or bats were identified during the repeat inspection on 22nd January 2019. It is likely that the dropping was deposited by an opportunistic small bat such as pipistrelle sp. visiting on a single occasion. This is not considered to constitute a hibernation roost since no other field evidence was seen.

Aerial bat inspection

One holm oak tree, close to the northern boundary of the woodland was climbed and inspected on 18th December 2018. Two features, including a small cavity and wound were inspected with a Rigid CA350 endoscope. No bats or any signs of previous roosting (such as droppings) were identified in either feature.

In the unlikely event that bats are encountered during tree work, work must cease until the advice of an ecologist has been sought.

Great crested newt

GIGL returned records for GCN, the closest of which is 1.7km from the site.

Great crested newt *Triturus cristatus* (GCN) require both terrestrial and aquatic habitats. They return to aquatic habitat to breed March-June, using small to medium ponds with no fish and suitable marginal vegetation including watercress and aquatic grass (Froglife 2001). Terrestrial habitat includes refuges and foraging and dispersal opportunities (e.g. rough grassland and broad-leaved woodland) as well as hibernation sites such as rubble piles or mammal burrows. Whilst GCN migrate onto land to forage, shelter and hibernate, it is rare to find them over 250 metres from a breeding pond (Cresswell & Whitworth 2004).

There are no ponds on site or within the commonly accepted commuting distance (maximum 250 metres).

Great crested newt presence is scoped out and further surveys are not necessary.

Dormouse

EFC returned no records for dormouse.

The hazel dormouse *Muscardinus avellanarius* requires wooded habitats, usually semi-natural woodland containing hazel coppice and oak, and a rich understorey cover through which to disperse safely between trees (English Nature 2006).

The habitat on site offers negligible value for this species. The structure of the woodland provides poor conditions for this species, that favour ancient woodland with a developed understorey and dense stands of bramble, hazel and honeysuckle.

Dormouse presence is scoped out and further surveys are not necessary.

Otter and water vole

No otter or water vole records were returned.

There is no suitable habitat for either species on or adjacent the site.

Presence of otter and water vole is scoped out and further surveys are not necessary.

Reptiles

Records for slow worm and common lizard were returned for locations 1.3 and 2km from the site respectively.

Reptiles (common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*) require mosaic habitats with features in which to bask, forage and shelter. These habitats need to have onward connectivity for dispersal. Suitable habitats include grassland with scrub edges or small woodland coppices (Edgar et al. 2010).

The development footprint is largely built form (buildings and hard standing) and is unsuitable for reptiles. Grassland areas are very isolated and in all cases are surrounded by hard standing.

Whilst reptile presence is unlikely given the isolation of habitats and lack of data records, it is recommended the site is managed (i.e. grassed areas regularly mown) until the point development commences to discourage colonisation.

Birds

Birds (all species) are protected under national law by the Wildlife and Countryside Act (1981; as amended). It is an offence to kill, injure, take or possess (alive or dead) any wild bird; take, damage or destroy a nest that is in use or being built; or take, destroy or possess an egg.

No nests were observed on site during the survey. Nonetheless, birds' nest in trees between March and August (inclusive). Any necessary tree work is recommended between September and February (inclusive) in this regard.

Badger

GIGL returned no badger records.

European badger *Meles meles* require habitats in which to build their setts and in which to forage. Badgers preferentially choose sloping banks (road verges, railway embankments, woodlands) with easy-dig substrate for sett building where foraging habitat is available in close proximity.

An outlier badger sett was identified close to the northern corner of the woodland on 18th December 2018. This sett showed limited signs of activity, no fresh spoil was evident, and the aperture was partially blocked by leaves. This sett is 30 metres from Spedan Close and is unlikely to be affected by the development since all foraging habitat will be retained and dispersal ability will not be hindered. As a precautionary measure, it is recommended that the woodland is subject to a re-survey for badger immediately before work commences.

A fox den was found in the woodland to the east of the site but there were no signs to indicate this is in use by badger. A mammal track runs north-south along the grassed bank rear of Branch Hill House and it is likely that mammals including fox use the site to commute through.

Legally protected plants

EFC returned no records for legally protected plants.

Further botanical surveys are not unnecessary.

Legally protected invertebrates

EFC returned no records for legally protected invertebrates. It is unlikely given the habitats on site and management regime that any such invertebrates would occur.

Figure 9. Photographs

a) B1: Lifted lead flashing next to window

b) B1: Lifted flashing next to ridge

c) Loft vents fitted into loft space in B1

d) B2. Flat roof

e) B1 frontage

f) B2 frontage

g) Mature, ivy-clad sycamore tree

h) Basement rooms viewed from ground level

i) View north-east through woodland showing steep topography and lack of ground flora

j) View south-east down Spedan Close showing dominance of cherry laurel in the woodland

10.0 Summary of Ecological Constraints and Opportunities

The development involves change of use of Branch Hill House from care home (Use Class C2) to residential (Use Class C3) and associated external alterations, demolition of the 1960s extension and erection of replacement building, including basement, comprising residential accommodation (Use Class C3), ancillary plant, access and servicing and car parking. A new trail and informal play area will be provided in the woodland.

Bats

No roosts were identified in Branch Hill House or basement. Since bats are transient, highly mobile species, it is recommended that a repeat inspections of both the loft voids and basement rooms are undertaken immediately before any soft stripping works begin, to account for any changes. Any soft stripping required on the roof will involve the materials being carefully removed from the top of the roof downwards. Tiles will be checked for bats before being discarded /stored for re-use. If bats are encountered at any point during any work on site, work must cease until the advice of an appropriately experienced ecologist has been sought.

Lighting along the woodland edge and alongside the row of lime trees should comply with the specification below, as recommended in the "Bats and Artificial Lighting" Guidelines, 2018:

- Warm spectrum LED (2700k)
- Downward light component only, 770mm from ground
- Low brightness @ 5W
- Small beam angle @ 25 degrees
- Light spread at 50% intensity, 336mm diameter
- Set on short timers – quickly switched off when not in use

Nesting birds

As a general recommendation, management of vegetation should either be undertaken between September and February inclusive, when nesting birds are absent, or follow a nest check by an ecologist.

Badger

A repeat woodland walkover is recommended before work begins to account for any changes to badger activity and identify any setts within 20 metres of works.

General: Habitat management and tree protection

As a general measure, it is recommended that the site continues to be managed up until the point that development commences to avoid colonisation of transient species groups including reptiles.

All retained trees should be protected in accordance with BS 5837 (2012) Trees in relation to Design, Demolition and Construction – Recommendations.

Opportunities

Woodland management

The development presents an opportunity to implement woodland management. The woodland directly to the north of the site is in declining condition with dominance of cherry laurel and other undesirable species including rhododendron. It is recommended that a management plan, informed by ecological and arboricultural information is prepared to secure the long-term viability of the woodland as a biodiversity feature. It is proposed to introduce a path through the woodland and informal play area which will help to connect new residents to nature. It is recommended that the detail of the management plan is secured by condition. The following could be included:

- Walkover to identify dead, dying, diseased specimens
- Removal of cherry laurel and rhododendron
- Selective removal of low-quality specimens to promote light into the woodland
- Planting of woodland wildflowers
- Measures to ensure a sustainable relationship between the residents and biodiversity

Landscaping

The Masterplan includes new areas of planting. Any new planting should be native and reflect local provenance. Fruit and berry-bearing species should be included for wildlife where the environment is appropriate. Wildflower planting should be included to benefit invertebrates. A recommended "plants for pollinators" species list can be found here: https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-pollinators.

Habitat boxes

There is scope to install the following habitat boxes/features on the site:

- The lime trees along the footpath to the south of the extension would be particularly suitable as they allow a clear flight path and have direct connectivity to the gardens directly south. Three summer bat roost boxes should be installed at eastern, southern and western aspects on two retained lime trees on the southern boundary. The recommended boxes are "Improved crevice boxes" (see Figure 10) suitable for the small British crevice-dwelling bats - the Pipistrelles, Soprano Pipistrelles and Barbastelle's.

- One hibernation bat box is recommended to be installed on the mature sycamore tree to the north of Branch Hill House.

- One house sparrow box is recommended to be installed at 3 metres or above on an external wall, facing either north or east.

- An insect hotel could be created as a resident's initiative and placed in a sheltered location in the woodland. Recommended locations for habitat boxes are provided on Figure 11.

Figure 10. Recommended habitat boxes

a) Improved crevice bat box (https://www.nhbs.com/improved-crevice-bat-box) to be installed on retained lime trees

b) Hibernation bat box to be installed on retained sycamore tree (Schwegler 1FW or similar)

c) Sparrow terrace

d) Insect hotel

Figure 11. Masterplan with indicative enhancements

11.0 Conclusions

Ecological surveys and a desktop study have been undertaken to support a planning application for change of use at Branch Hill, to understand the impacts of the development on legally protected species and to identify opportunities for biodiversity net-gain.

The development will retain and protect the adjoining SINC woodland, striving to improve woodland conditions through positive conservation management and actively engaging the residents through improved access.

Work will be compliant with wildlife legislation. No bat roosts were identified through the course of surveys. Repeat inspections of Branch Hill House and basement are recommended to provide confidence in the absence of roosting bats before any soft stripping or demolition commences. A repeat woodland walkover is also recommended for badger to account for any changes in activity before work begins.

Lighting along the woodland edge will be controlled to ensure bat foraging and commuting behaviour is maintained. Mitigation measures are also provided for nesting birds. General habitat maintenance is recommended to discourage colonisation of transient species groups such as reptiles.

It is recommended that a condition is imposed requiring the details of a Woodland Management Plan, which should be a collaboration between Hybrid Ecology and the project Arboriculturist to ensure recommendations are holistic.

The development presents an opportunity for biodiversity net-gain, including woodland management, wildlife friendly planting, summer and hibernation bat roost boxes, bird boxes and insect hotel. These new features will improve conditions on site for protected and Priority Species, in accordance with the Camden Local Plan and will ensure the development meets the criteria under Paragraph 170d of the National Planning Policy Framework.

References

BCT, 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). The Bat Conservation Trust, London. http://www.bats.org.uk/pages/batsurveyguide.html?_sm_au_=ijVSrSJrZMlR1Psj

BSI, 2013. BS 42020:2013 Biodiversity. Code of practice for planning and development. British Standards Institute. Available at: http://shop.bsigroup.com/ProductDetail/?pid=000000000030258704

BTO, 2015. Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Birds. https://www.britishbirds.co.uk/wp content/uploads/2014/07/BoCC4.pdf

CIEEM, 2015. Guidelines for Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester. Available at: http://www.cieem.net/data/files/Publications/Ecological_Report_Writing_23.12.2015.pdf

CIEEM, 2016. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester. Available at: http://www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf

Conservation of Habitats and Species Regulations, 2017. Available at: http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi_20100490_en.pdf

English Nature, 2001. Bat Mitigation Guidelines.

English Nature, 2006. The Dormouse Conservation Handbook, 2nd edition. English Nature. Available at: https://ptes.org/wp-content/uploads/2014/06/Dormouse-Conservation-Handbook.pdf?_sm_au_=ijVSrSJrZMlR1Psj

Froglife, 2001. Great Crested Newt Conservation Handbook. Suffolk: Froglife. Available at: http://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf

Froglife, 2001. Advice Sheet 10. Surveying Reptiles. Available at: http://www.froglife.org/wp-content/uploads/2014/01/FAS_10.pdf

Harris, S., Cresswell, P., Jefferies, D., 1989. Surveying Badgers. London: The Mammal Society. Available at: http://www.mammal.org.uk/sites/default/files/Surveying%20Badgers%20%201989%20-%20Whole%20Book.pdf

HM Government, 2019. National Planning Policy Framework. London: Department for Communities and Local Government. Available at: http://planningguidance.communities.gov.uk/blog/policy/

HM Government, 2015a, as amended. Protected species and sites: how to review planning proposals. Available at: https://www.gov.uk/guidance/protected-species-and-sites-how-to-review-planning-proposals

JNCC, 2004b. Common Standards Monitoring Guidance for Reptiles and Amphibians. JNCC. Available at: http://jncc.defra.gov.uk/pdf/CSM_reptiles_amphibians1.pdf

JNCC, 2010. Handbook for Phase 1 habitat survey: A technique for environmental audit. JNCC. Available at: http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf?_sm_au_=ijVN1vPTstvVv1Dt

JNCC, 2014, as amended. Protected areas designations directory. JNCC. Available at: http://jncc.defra.gov.uk/page-1527

Natural Environment and Rural Communities Act (NERC Act), 2006, as amended. Available at: http://www.legislation.gov.uk/ukpga/2006/16/contents

Protection of Badgers Act, 1992. Available at: http://www.legislation.gov.uk/ukpga/1992/51/pdfs/ukpga_19920051_en.pdf