Preliminary Ecological Appraisal and Preliminary Roost Assessment Survey

The Elms, Columbas Drive, Spaniards Road Hampstead, London, NW3 7JD

Elms Nominees Limited

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Guidelines

This assessment has been designed to take into account when forming a professional opinion:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal Second Edition, December 2017';
- Chartered Institute of Ecology and Environmental Management 'Guidelines for Ecological Impact Assessment in the UK and Ireland. Terrestrial, Freshwater, Coastal and Marine, September 2018'; and
- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England.
>
> The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

In consequence of the scale and intensity of the proposed development, the low impact on ecological receptors identified through both the site survey and search of local biological records, and the passive interface with the mitigation hierarchy, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

Executive summary

Arbtech Consulting Limited was commissioned by Elms Nominees Limited to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at The Elms, Columbas Drive, Spaniards Road Hampstead, London, NW3 7JD. The survey was completed on 10th August 2021. The aim of the survey was to complete an Extended Phase 1 Habitat Survey of the survey area (all land that will be impacted by the proposals) and to search for bats or field signs of bats and to consider the value and suitability of the structures for roosting bats, and analyse this against a desk study to assess any ecological constraints.

The development proposals are for two extensions to the existing building. A planning application is being prepared for submission to the London Borough of Camden.

Summary of Recommendations - ***This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent.***

Ecological Factor	**Survey assessment conclusions (with justification)**	**Foreseen impacts**	**Recommendations**	**Enhancements** The Local Planning Authority has a duty to ask for enhancements under the NPPF (2019)
Designated sites	The site itself is not subject to any statutory or non-statutory designations. Hampstead Heath Woods SSSI is located ~250m east of the site. Belsize Wood LNR and Big Wood LNR are also found within 2km. The nearest European site is the Lee Valley Ramsar site, located ~8km east of the site.	The proposed development is not of a sufficient scale to have an impact on the nearby designated sites. There will be no net increase in residential units, traffic, recreational pressure etc and therefore the development is not expected to affect the nearby European site.	No further surveys or assessment are required.	N/A.

Notable habitats and plants	The Magic database shows that there are no priority habitats on site. The site is bordered to the east by deciduous woodland and to the west by ancient woodland; in addition, traditional orchards, BAP woodpasture and parklands, lowland heathland and good-quality semi-improved grassland habitats are all known within 2km.	There is potential for the priority habitats located within the zone of influence of the proposed works to be impacted by the development (e.g. noise and dust).	A construction method statement (CMS) will be required to show how pollution associated with the development will be controlled to protect the priority habitats.	N/A.
Invasive / Non-native species	No Schedule 9 species recorded on site.	No impacts are foreseen.	No further surveys are required, though the landowner should remain vigilant.	None.
Bats – B1	The building overall has low habitat value for rooting bats, based on a small number of potential roosting features (loose roof tiles) that bats could exploit. The areas that will be affected by the works offer negligible habitat suitability for roosting bats. The Magic database shows that a common pipistrelle roost has been recently destroyed within 1km of the site. Displaced bats from these roosts could find suitable roosting features on site.	There are unlikely to be any direct impacts on bat roosts. However, bats roosting in other parts of the building, that will not be directly affected by the works, could be indirectly affected by e.g. noise or vibrations.	A Bat Mitigation Plan should be produced showing how the works to B1 can proceed without harming any bats that may be roosting in other areas of the building.	To be confirmed in the Bat Mitigation Plan.

Bats – B2, B3 & B4	These buildings will not be impacted by the development and were therefore not surveyed for roosting bat potential.	These buildings will not be affected by the development. No impacts are foreseen.	No further surveys are required.	The installation of three woodcrete bat boxes on mature trees around the site boundary will provide extra habitat value for bats. Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.
Bats – Trees & Wider Site	Some of the mature trees on site offer roosting value for bats. The garden areas will offer foraging and commuting value for bats.	Commuting and foraging bats may be impacted by the installation of artificial lighting.	The rear garden should remain a dark space for foraging and commuting bats and any new lighting scheme should follow guidance from the Bat Conservation Trust and the Institution of Lighting Professionals' "Guidance Note 08/18 Bats and artificial lighting in the UK Bats and the Built Environment series" publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting The lighting on the site will: - Use narrow spectrum light sources to lower the range ofspecies affected by lighting - Use light sources that emit minimal ultra-violet light - Avoid white and blue wavelengths of the light spectrum toreduce insect attraction and where white light sources are required, in order to manage the blue short wave length content, they should be of a warm / neutral colour temperature <4,200 kelvin. - Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. - External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on.	The wildflower area will provide excellent foraging value for bats, especially if pale, night-scented flowers are added to attract insects overnight.

			- Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. - All lighting on the developed site will make use of the most up to date technology available.	
Birds	The site will provide habitat value for nesting birds, though it is not thought to offer habitat value for schedule 1 birds, such as barn owls. The buildings are regularly maintained and no evidence of bird nesting on or inside any of the buildings was observed during the survey.	As the works are restricted to the main building, no impacts on breeding birds are foreseen. The garden is monitored daily by a gardener.	If the works are to take place within the bird nesting season (March to August inclusive), the nearby vegetation should be carefully inspected. If any birds' nests are found within 5m of the work area, the work will not be able to commence until the chicks have fledged.	The installation of three bird boxes on mature trees on site will provide additional habitat value for nesting birds.
Reptiles	The site will offer limited habitat value for reptiles as it is regularly maintained, and due to a lack of native botanical habitats for reptiles to exploit. However, the wildflower and compost areas to the east of the site may offer habitat value for low numbers of reptiles.	The works are extremely unlikely to affect any reptiles that may be present towards the eastern boundary of the site.	To minimise the risk of killing or injuring reptiles, any site clearance works should be carried out under a precautionary method of working. The development area should be kept largely clear of vegetation in order to make it unattractive to reptiles. This clearance should be to ground level and be carried out in two stages, the latest stage undertaken at least 2 days prior to topsoil removal or other works to allow any reptiles present to move away. The first cut should be at about 15cm from the ground (the current state of the site) and the second (between 1 and 3 days later) close to the ground, thereby preventing injury to reptiles during clearance. The vegetation should then be maintained at a very short level (less than 5 cm) even if there are delays in development. Likewise, compost heaps or vegetation, log or rubble piles should be moved by hand prior to commencement of any work. A buffer around the boundaries and reptiles fencing to ensure any reptiles are restricted from accessing the site during development is recommended.	Waste materials created during the development e.g. log piles, brash, rocks etc. can be used to create hibernacula and refugia for common reptiles. These should be positioned on the site boundaries.
Amphibians	The fishpond on site is deep, with steep sides, and is extremely unlikely to offer habitat value for amphibians. It will not be affected by the development, in any case. The terrestrial habitats on site are not likely to provide good-quality habitat for amphibians either, as they	The works are extremely unlikely to affect amphibians.	No further surveys are required. If a Great Crested Newt is found during development, all works should stop, and a licensed ecologist should be contacted for further guidance.	A shallow wildlife pond (no fish) would provide the greatest benefits to amphibians.

	are regularly maintained, and the grass is closely mown. No ponds are known within 250m, further decreasing the likelihood that protected amphibians would be found on site at any time of year.			
Other Terrestrial Mammals	**Badgers** The site offers limited foraging resources that badgers could exploit. No signs of badger foraging were observed on site, and no setts are known within 30m.	**Badgers** No impacts on any badger setts are foreseen. However, foraging badgers could be injured or killed during the works if precautionary measures are not taken.	**Badgers** The following recommendations are given in order to mitigate against potential harm to badgers during the development works. • Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in. • Security lighting to be directed away from the undergrowth. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.	**Badgers** Planting fruit trees on the developed site will provide additional foraging resources for badgers.
	Water Vole No suitable habitat.	**Water Vole** No impacts foreseen.	**Water Vole** No further surveys required.	**Water Vole** N/A.
	Otter No suitable habitat.	**Otter** No impacts foreseen.	**Otter** No further surveys required.	**Otter** N/A.
	Dormice No suitable habitat.	**Dormice** No impacts foreseen.	**Dormice** No further surveys required.	**Dormice** Planting native hedgerows (e.g. hazel) would provide the greatest benefits for dormice.
	Hedgehogs	**Hedgehogs** Any hedgehogs present during the	**Hedgehogs** The recommendations given for badgers above will also protect hedgehogs and other terrestrial mammals from coming to harm during the works.	**Hedgehogs** Gaps should be created in boundary

	The site provides suitable habitat for hedgehogs.	works could be injured or killed.		fences to provide commuting routes through the developed site for hedgehogs.

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1.0 Introduction and Context

1.1 Background

Arbtech was commissioned by Elms Nominees Limited to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at The Elms, Columbas Drive, Spaniards Road Hampstead, London, NW3 7JD. The survey was completed on 10th August 2021. The aim of the survey was to complete an Extended Phase 1 Habitat Survey of the survey area (all land that will be impacted by the proposals) and to consider the value and suitability of the structures for roosting bats. The PRA is informed by the Bat Conservation Trust publication, *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, 2016).

No previous ecological reports are known for the site by Arbtech or others.

1.2 Site Context

The site is located at National Grid Reference TQ 26564 86925 and has an area of approximately 1ha. The site consists of three residential buildings, and large landscaped gardens with mature trees, wildflower areas, a fishpond and introduced shrubs, and borders Hampstead Heath to the east.

1.3 Scope of the report

This report describes the baseline ecological conditions at the site; evaluates habitats within the survey area in the context of the wider environment; and describes the suitability of those habitats for notable or protected species. The PRA element of the survey the report provides a description of all features suitable for roosting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It identifies significant ecological impacts as a result of the development proposals; summarises the requirements for further surveys and mitigation measures, to inform subsequent mitigation proposals, achieve Planning or other statutory consent, and to comply with wildlife legislation.

To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary or proposed footprint and including the ‘zone of influence’ of the scheme) have been identified.
- A desk study has been carried out.
- Baseline information on the site and surrounding area has been recorded through an ‘extended phase 1 habitat survey’, including a phase 1 habitat survey (JNCC 2010) and recording further details in relation to notable or protected habitats and species.
- The ecological features present within the survey area have been evaluated where possible (CIEEM, December 2017).
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Likely impacts on features of value, as a result of the development proposals, have been identified.
- Recommendations for further survey and assessment have been made
- Recommendations for mitigation and enhancements of the developed site have been provided based on current information.

A survey plan is presented in Appendix 1, proposed plans in Appendix 2 (where available), desk study results in Appendix 3 and a summary of relevant legislation is presented in Appendix 4.

1.4 Project Description

The development proposals are for two extensions to the existing building. A planning application is being prepared for submission to the London Borough of Camden.

2.0 Methodology

2.1 Desk Study methodology

The desk study included a 2km radius review of statutory and non-statutory designated sites, Biodiversity Action Plan (BAP) Priority Habitats and granted EPSML records for bats held on magic.gov.uk database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

To conform to best practice guidelines, biological records data (BRD) within a 2km radius of the site should be obtained from the local biological records centre (Surrey Biodiversity Information Centre). The data search is confidential information that is not suitable for public release and once received will be analysed and summarised for presentation in this report.

2.2 Site Survey methodology

The survey was undertaken by Nicole Gullan BSc (Hons) AMRSB, Consultant (Accredited Agent to Natural England Bat Licence Number: 2018-33540-CLS-CLS).

Preliminary ecological appraisal methodology:

The methodology for the Phase 1 habitat survey is based on the best practice publication, *Phase 1 habitat survey methodology* (JNCC, 2010). All land parcels are described and mapped according to JNCC Phase 1 habitat classification. Where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management.

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species. The likelihood of the presence of protected species is ranked; the habitats on site are evaluated against their likelihood to provide suitable habitat for protected species.

The ecological value of the survey area has been assessed based on the *Guidelines for ecological impact assessment* (CIEEM, 2018), and the *Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring* (Hill, 2005), using geographic frames of reference. The biodiversity value of any identified designated sites, habitat types and associated species assemblages has been considered. The distribution and extent of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981 as amended 1996) were also noted throughout the survey area.

Preliminary roost assessment methodology:

The methodology for the PRA is informed by the Bat Conservation Trust publication, *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, 2016). All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for bats and signs of bat activity.

Buildings:

A non-intrusive visual appraisal was made from the ground using binoculars, external features of the building(s) were inspected for potential access or egress points and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of any relevant features within the roof space.

Trees:

A visual inspection was from ground level using binoculars and - where accessible - an internal inspection of suitable roosting features using an endoscope, torch and ladders was also made. The surveyor made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds and the suitability of the site for barn owls.

2.3 Suitability Assessment

The likelihood of occurrence of protected species is ranked according to the criteria listed in Table 1. The habitats on site were evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Table 1: showing criteria considered when assessing the likelihood of occurrence of protected species

Present	**Species are confirmed as present from the current survey or historical confirmed records.**
High	Habitat and features of high quality for species or species assemblage. Species known to be present in wider landscape (desk study records). Good quality surrounding habitat and good connectivity.
Medium	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat or ecological conditions required by the species or assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance or poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features or conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor-quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species or species assemblage.

For the PRA element of the survey all affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 2 and 3 below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 2: Features of a building that are correlated with use by bats

Likelihood of bats being present	Feature of building and its context
Higher	Buildings or structures with features of particular significance for roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data).
Lower	A small number of possible roost sites or features, used sporadically by more widespread species. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.

Table 3: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	A tree with 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, conditions and surrounding habitat.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.4 Limitations – evaluation of the methodology

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

- There were no specific factors (either abiotic or biotic) or issues (such as access or visibility) that would act as limitations to the survey. Therefore, the results of the survey are considered an accurate baseline to support the conclusions and recommendations of this report.

3.0 Results and Evaluation

3.1 Desk Study Results

The desk study methodology as outlined in section 2.1 has been carried out, and any relevant findings regarding sites, habitats or species will be incorporated into the conclusions and recommendations section of this report (section 4.2) for ease of reading.

3.2 Field Survey Results

The site consists of three residential buildings, and large landscaped gardens with mature trees, wildflower areas, a fish pond and introduced shrubs, and borders Hampstead Heath to the east. It is illustrated in the map in Appendix 1. The weather conditions recorded at the time of the survey are shown in Table 4.

Table 4: Weather conditions during the survey

Date: 10/08/2021	
Temperature	20°C
Relative Humidity	64%
Cloud Cover	100%
Wind	4mph
Rain	None

3.3 Site Feature descriptions and photos

Phase 1 habitat codes are given in brackets where they first appear in the text.

Photo 1: North-west corner of the site.

The site is accessed via a private gate in the north-west corner of the site and is bordered by ornamental hedges [J2.1] and security fences [J2.4].

Photo 2: B1 – western elevation

Building B1 [J3.6] is a detached residential dwelling with pitched roofs clad in slate roof tiles.

The brickwork appears to be in excellent condition across the building, with no visible gaps in which bats could roost. Climbing plants cover the brickwork in some places, but the excellent condition of the brickwork elsewhere indicates that gaps under the climbing plants are extremely unlikely to be present. No gaps under soffits or around chimney columns are present that could provide access to the interior of the building; B1 is therefore considered to provide negligible roosting value for void-dwelling bats such as brown long-eared bats *Plecotus auritus.*

Photo 3: B1 – south-western corner (where the building will be extended)

The gabled roof of the south-western corner of the building (where the building will be extended to accommodate a larger swimming pool) has slate tiles which appear to be in excellent condition, with no gaps that bats could exploit. The wooden window and door frames appear to be intact and lead flashing associated with these structures lies flat. There are no suitable roosting features on this area of the building for bats to exploit. In addition, no evidence of nesting bird activity was found anywhere on the building; it is thought that regular maintenance deters nesting activity.

Buildings B2-B4 will not be affected by the works and were not surveyed. Various outbuildings within the site boundaries will offer negligible roosting value for bats due to a lack of suitable roosting features that bats could exploit.

Photo 4: B1- western elevation

There are very few loose or raised slate tiles on the building (approximately 5%) and likewise, the ridge is mostly intact. Any slate tiles that are raised or missing will provide roosting value for crevice-dwelling bats, such as common pipistrelles *Pipistrellus pipistrellus*. None were located along the roof section to the south-west that will be affected by the proposals.

Photo 5: B1 – eastern elevation

The yellow arrow indicates where a new single-storey extension will be added to the north-east corner of B1. No suitable roosting features for bats were observed in this area; it is considered extremely unlikely that any bat roosts would be destroyed or blocked off by the works.

Photo 6: Rear garden, east of B1..

Areas of hardstanding are present in the front and rear garden areas and are interspersed with areas of ornamental planting [J1.4] and scattered trees [A.3].

Large areas of closely-mown amenity grass [J1.2] will provide limited habitat value for protected species.

Photo 7: Looking north along the rear garden of the site.

There are three ponds [G1] within the site boundaries. The photo opposite shows a large fish pond in the southern part of the rear garden. The presence of fish stocks, lack of native submerged vegetation for egg laying, and steep sides indicate that this pond will not be suitable for occupation by breeding amphibians, such as great crested newt *Triturus cristatus.* Likewise, the other two ponds are ornamental, with artificial liners, steep sides and lack of native submerged vegetation. The site is considered to offer negligible habitat value for aquatic-phase amphibians, though terrestrial-phase amphibians may find shelter and foraging opportunities in the woodland and scrub that are present along the edges of the site. Hampstead Heath is adjacent to the east and is not thought to support GCN due to the presence of fish in the large lakes within the Heath.

Photo 8: Near the eastern boundary of the site, looking south.

A compost area to the west of the site will offer habitat value for common reptiles, particularly slow worms *Anguis fragilis*. Grass snakes are also known to be present at Hampstead Heath, which is seen behind the green fence to the left in the photo opposite and may be able to access the site through gaps under the fence.

Photo 7: Looking north along the rear garden of the site.

A wildflower meadow area is present in the rear garden and will provide foraging value for a variety of protected species, particularly insects. The resulting increase in insect diversity is likely to attract foraging bats. There are few artificial lights in the garden area and it is likely to represent a dark space for foraging bats.

Photo 8: Mast – south of the site.

To the south of the site is a mast, under the same ownership as the rest of the site. The mast building is surrounded by poor semi-improved grassland [B6], with a low forb diversity indicative of nutrient-rich soil, and tall ruderal [C3.1] including bramble *Rubus fruticosus* and *Buddleja* sp. that will provide some foraging value for protected species activity. No evidence of badger *Meles meles* was observed; the site is mostly quite flat and will not offer suitable sett-making habitat for badgers, though setts may be present in the Hampstead Heath woodland to the east.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat. The likelihood of occupancy of protected species is ranked according to the criteria listed in Table 1.

Where this report supports a planning application, the ecological interest of the study area (including the survey area) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity. It is clearly stated where a preliminary value can be given and where further information is required.

Likelihood of the presence of bats

There are three possible outcomes of the PRA element of the survey, each with specific recommendations. These are outlined below:

Confirmed bat roost

Best practice survey guidelines (Collins, 2016) recommend additional surveys for confirmed roosts. Three further surveys are required to characterise the bat roost present including species, roost type and access points to inform a European Protected Species Mitigation Licence (EPSML) application with Natural England. Surveys must be completed during the active bat season (May – September). At least two of the surveys should be completed during the optimal survey period mid-May to August, and at least on the surveys should be a dawn re-entry survey (Collins, 2016).

Low, moderate or high likelihood of a bat roost present

Best practice survey guidelines (Collins, 2016) recommend additional surveys for features assessed as having low to high suitability for roosting bats. One, two or three further surveys are required to confirm presence or likely absence of a bat roost, based on a low, medium or high roost likelihood evaluation. Surveys must be completed during the active bat season (May – September). If more than one survey is recommended, at least one of them should be completed during the optimal survey period mid-May to August, and at least one the surveys should be a dawn re-entry survey (Collins, 2016). If two or one further survey is recommended these surveys must be completed during the optimal survey period (mid-May to August). For low and moderate roost likelihood evaluation the survey effort recommended at this stage is iterative and if bats roosts are confirmed in the building, a further survey will be required to provide sufficient information to inform an EPSML application to Natural England.

Negligible likelihood of a bat roost present

Buildings assessed as comprising negligible suitability for roosting bats do not normally require further surveys. However, if bats are found during any stage of the development, work should stop immediately, and a suitably qualified ecologist should be contacted for further advice.

Appropriate justification for this assessment is provided in Section 2.3 of this report.

4.2 Evaluation

Taking the desk study and site survey results into account, the following conclusions for ecological factors has been reached.

Table 5: Evaluation of site

Ecological Factor	**Survey assessment conclusions (with justification)**	**Foreseen impacts**	**Recommendations**	**Enhancements** The Local Planning Authority has a duty to ask for enhancements under the NPPF (2019)
Designated sites	The site itself is not subject to any statutory or non-statutory designations. Hampstead Heath Woods SSSI is located ~250m east of the site. Belsize Wood LNR and Big Wood LNR are also found within 2km. The nearest European site is the Lee Valley Ramsar site, located ~8km east of the site.	The proposed development is not of a sufficient scale to have an impact on the nearby designated sites. There will be no net increase in residential units, traffic, recreational pressure etc and therefore the development is not expected to affect the nearby European site.	No further surveys or assessment are required.	N/A.
Notable habitats and plants	The Magic database shows that there are no priority habitats on site. The site is bordered to the east by deciduous woodland and to the west by ancient woodland; in addition, traditional orchards, BAP	There is potential for the priority habitats located within the zone of influence of the proposed works to be impacted by the development (e.g. noise and dust).	A construction method statement (CMS) will be required to show how pollution associated with the development will be controlled to protect the priority habitats.	N/A.

	woodpasture and parklands, lowland heathland and good-quality semi-improved grassland habitats are all known within 2km.			
Invasive / Non-native species	No Schedule 9 species recorded on site.	No impacts are foreseen.	No further surveys are required, though the landowner should remain vigilant.	None.
Bats – B1	The building overall has low habitat value for rooting bats, based on a small number of potential roosting features (loose roof tiles) that bats could exploit. The areas that will be affected by the works offer negligible habitat suitability for roosting bats. The Magic database shows that a common pipistrelle roost has been recently destroyed within 1km of the site. Displaced bats from these roosts could find suitable roosting features on site.	There are unlikely to be any direct impacts on bat roosts. However, bats roosting in other parts of the building, that will not be directly affected by the works, could be indirectly affected by e.g. noise or vibrations.	A Bat Mitigation Plan should be produced showing how the works to B1 can proceed without harming any bats that may be roosting in other areas of the building.	To be confirmed in the Bat Mitigation Plan.
Bats – B2, B3 & B4	These buildings will not be impacted by the development and were therefore not surveyed for roosting bat potential.	These buildings will not be affected by the development. No impacts are foreseen.	No further surveys are required.	The installation of three woodcrete bat boxes on mature trees around the site boundary will provide extra habitat value for bats.

				Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.
Bats – Trees & Wider Site	Some of the mature trees on site offer roosting value for bats. The garden areas will offer foraging and commuting value for bats.	Commuting and foraging bats may be impacted by the installation of artificial lighting.	The rear garden should remain a dark space for foraging and commuting bats and any new lighting scheme should follow guidance from the Bat Conservation Trust and the Institution of Lighting Professionals' "Guidance Note 08/18 Bats and artificial lighting in the UK Bats and the Built Environment series" publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting The lighting on the site will: - Use narrow spectrum light sources to lower the range ofspecies affected by lighting - Use light sources that emit minimal ultra-violet light - Avoid white and blue wavelengths of the light spectrum toreduce insect attraction and where white light sources are required, in order to manage the blue short wave length content, they should be of a warm / neutral colour temperature <4,200 kelvin. - Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. - External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. - Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. - All lighting on the developed site will make use of the most up to date technology available.	The wildflower area will provide excellent foraging value for bats, especially if pale, night-scented flowers are added to attract insects overnight.
Birds	The site will provide habitat value for nesting birds, though it is not thought to offer habitat value for schedule 1 birds, such as barn owls. The buildings are regularly maintained and no evidence of bird nesting on or inside	As the works are restricted to the main building, no impacts on breeding birds are foreseen. The garden is monitored daily by a gardener.	If the works are to take place within the bird nesting season (March to August inclusive), the nearby vegetation should be carefully inspected. If any birds' nests are found within 5m of the work area, the work will not be able to commence until the chicks have fledged.	The installation of three bird boxes on mature trees on site will provide additional habitat value for nesting birds.

	any of the buildings was observed during the survey.			
Reptiles	The site will offer limited habitat value for reptiles as it is regularly maintained, and due to a lack of native botanical habitats for reptiles to exploit. However, the wildflower and compost areas to the east of the site may offer habitat value for low numbers of reptiles.	The works are extremely unlikely to affect any reptiles that may be present towards the eastern boundary of the site.	To minimise the risk of killing or injuring reptiles, any site clearance works should be carried out under a precautionary method of working. The development area should be kept largely clear of vegetation in order to make it unattractive to reptiles. This clearance should be to ground level and be carried out in two stages, the latest stage undertaken at least 2 days prior to topsoil removal or other works to allow any reptiles present to move away. The first cut should be at about 15cm from the ground (the current state of the site) and the second (between 1 and 3 days later) close to the ground, thereby preventing injury to reptiles during clearance. The vegetation should then be maintained at a very short level (less than 5 cm) even if there are delays in development. Likewise, compost heaps or vegetation, log or rubble piles should be moved by hand prior to commencement of any work. A buffer around the boundaries and reptiles fencing to ensure any reptiles are restricted from accessing the site during development is recommended.	Waste materials created during the development e.g. log piles, brash, rocks etc. can be used to create hibernacula and refugia for common reptiles. These should be positioned on the site boundaries.
Amphibians	The fishpond on site is deep, with steep sides, and is extremely unlikely to offer habitat value for amphibians. It will not be affected by the development, in any case. The terrestrial habitats on site are not likely to provide good-quality habitat for amphibians either, as they are regularly maintained, and the grass is closely mown. No ponds are known within 250m, further decreasing the likelihood that protected amphibians would be found on site at any time of year.	The works are extremely unlikely to affect amphibians.	No further surveys are required. If a Great Crested Newt is found during development, all works should stop, and a licensed ecologist should be contacted for further guidance.	A shallow wildlife pond (no fish) would provide the greatest benefits to amphibians.

Other Terrestrial Mammals	**Badgers** The site offers limited foraging resources that badgers could exploit. No signs of badger foraging were observed on site, and no setts are known within 30m.	**Badgers** No impacts on any badger setts are foreseen. However, foraging badgers could be injured or killed during the works if precautionary measures are not taken.	**Badgers** The following recommendations are given in order to mitigate against potential harm to badgers during the development works. • Any trenches dug should either be covered at night or have a rough sawn plank placed in them to act as a ramp for any wildlife which may fall in. • Security lighting to be directed away from the undergrowth. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.	**Badgers** Planting fruit trees on the developed site will provide additional foraging resources for badgers.
	Water Vole No suitable habitat.	**Water Vole** No impacts foreseen.	**Water Vole** No further surveys required.	**Water Vole** N/A.
	Otter No suitable habitat.	**Otter** No impacts foreseen.	**Otter** No further surveys required.	**Otter** N/A.
	Dormice No suitable habitat.	**Dormice** No impacts foreseen.	**Dormice** No further surveys required.	**Dormice** Planting native hedgerows (e.g. hazel) would provide the greatest benefits for dormice.
	Hedgehogs The site provides suitable habitat for hedgehogs.	**Hedgehogs** Any hedgehogs present during the works could be injured or killed.	**Hedgehogs** The recommendations given for badgers above will also protect hedgehogs and other terrestrial mammals from coming to harm during the works.	**Hedgehogs** Gaps should be created in boundary fences to provide commuting routes through the developed site for hedgehogs.

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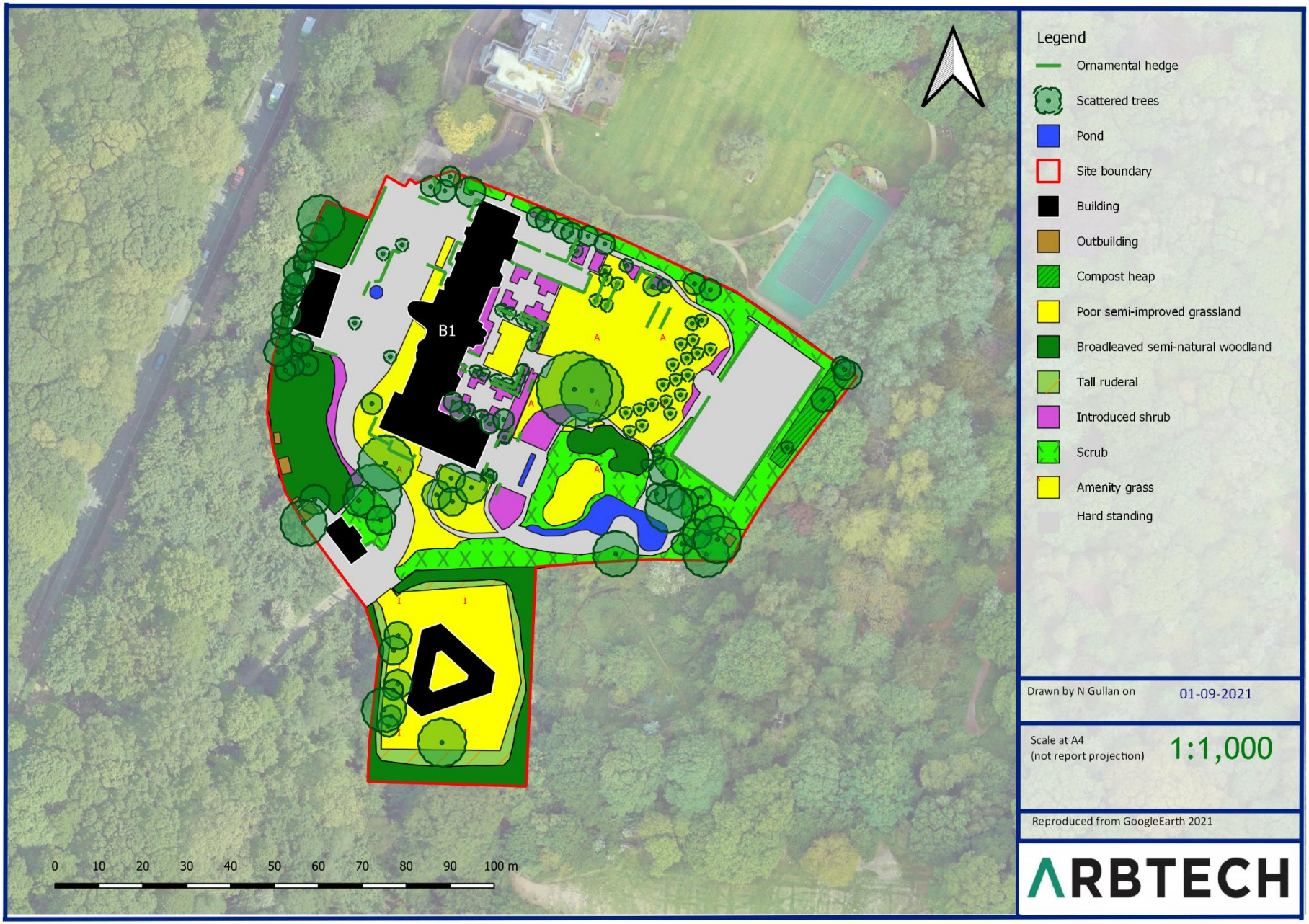
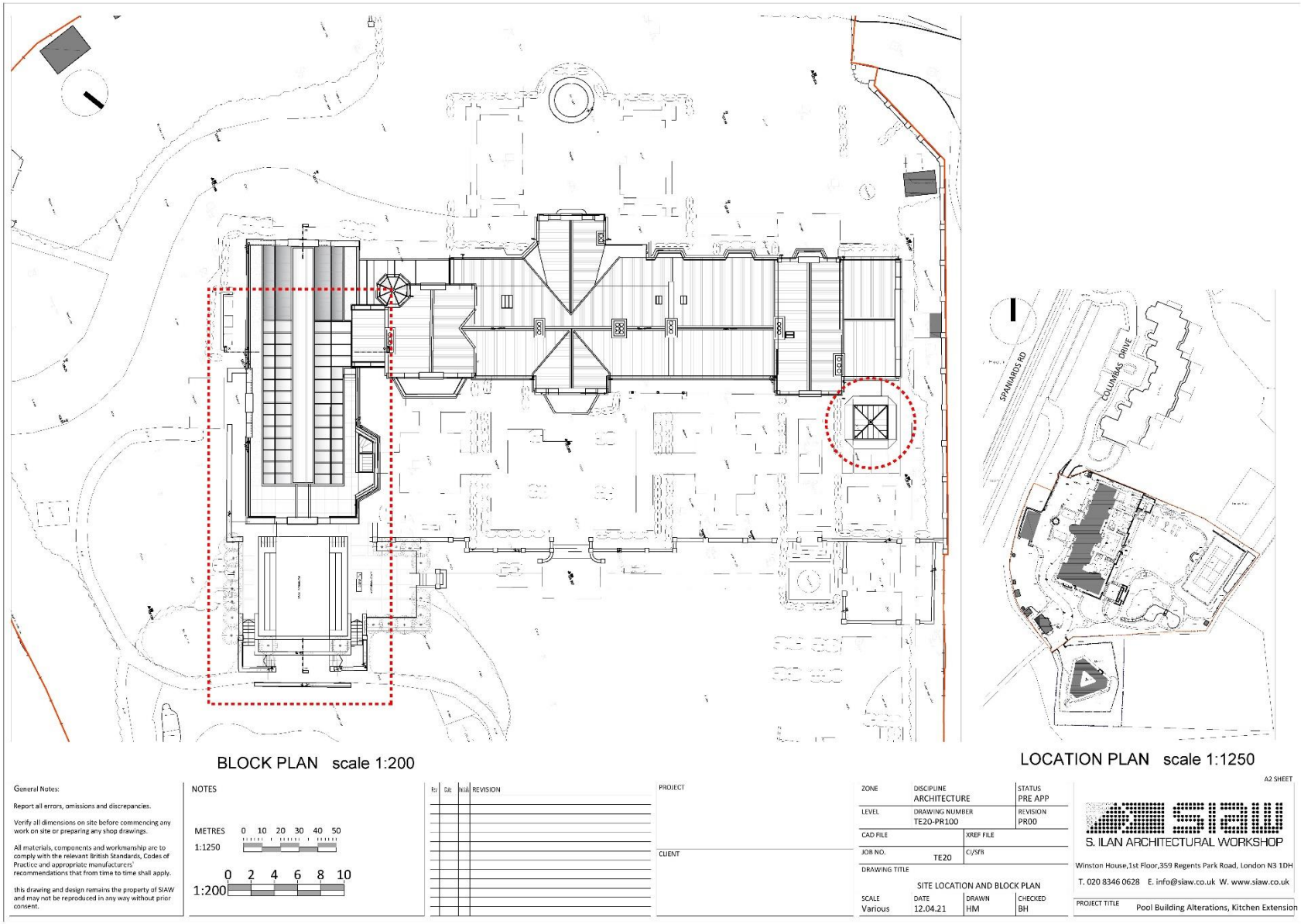
Appendix 1: Phase 1 Habitat Survey Map



Appendix 2: Proposed Site Plan

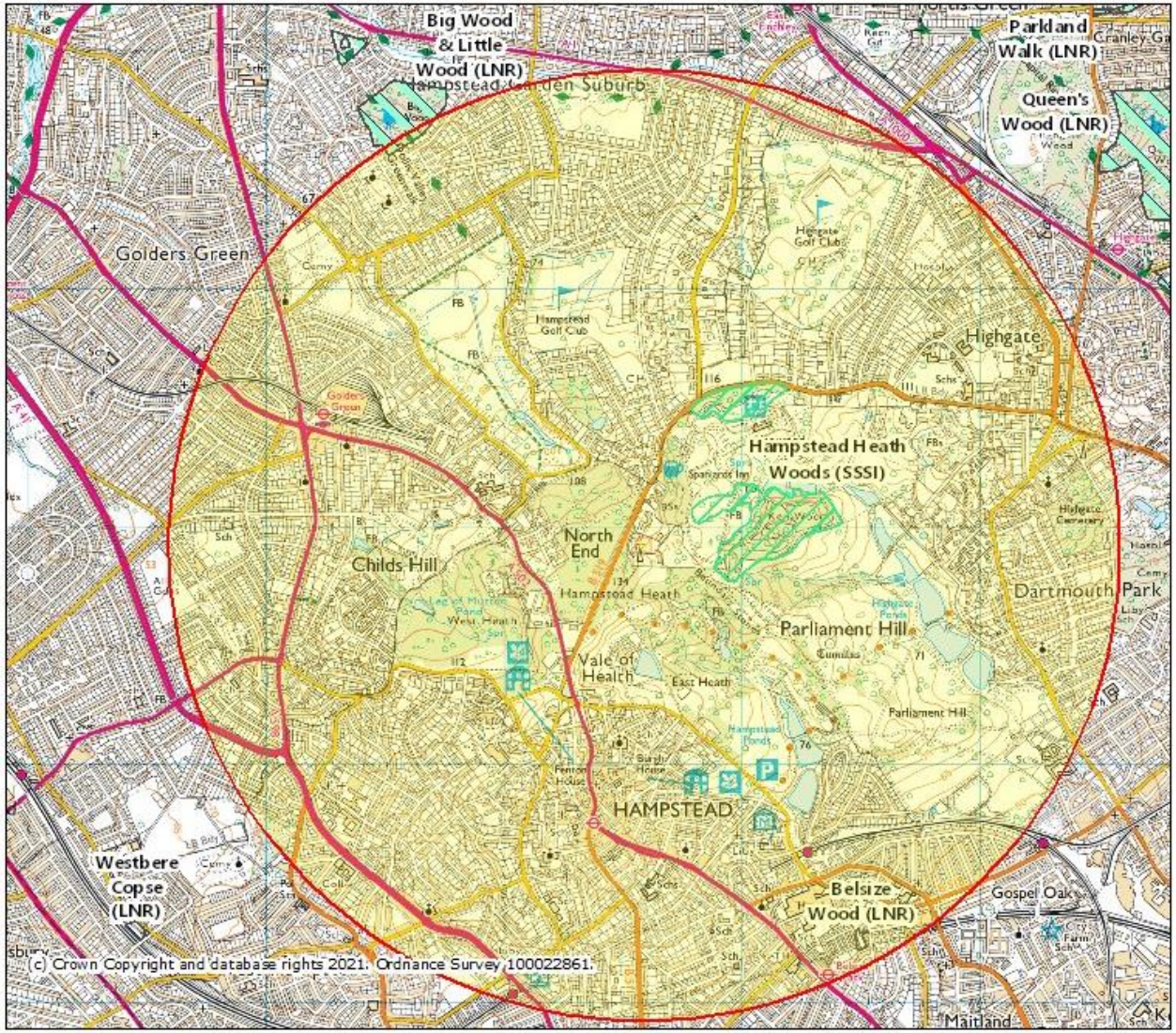


Appendix 3: Desk Study Information

Full historical records can be provided on request.

MAGiC

Designated Sites



Legend

- Areas of Outstanding Natural Beauty (England)
- Local Nature Reserves (England)
- National Nature Reserves (England)
- National Parks (England)
- Ramsar Sites (England)
- Sites of Special Scientific Interest (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)
- Biosphere Reserves (England)

Projection = OSGB36
xmin = 521400
ymin = 184700
xmax = 531300
ymax = 189400

0 0.45 0.9
km

Map produced by MAGIC on 1 September, 2021.
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MAGiC

Habitats

Legend

- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Upland Hay Meadows (England)
- Priority Habitat Inventory - Lowland Heathland (England)
- Priority Habitat Inventory - Lowland Fens (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)

Projection = OSGB36
xmin = 521500
ymin = 184800
xmax = 531400
ymax = 189200

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km

Map produced by MAGIC on 1 September, 2021.
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MAGiC

EPSLs

Legend

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile

Projection = OSGB36
xmin = 521500
ymin = 184800
xmax = 531400
ymax = 189200

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km

Map produced by MAGIC on 1 September, 2021.
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Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1.000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.

Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status.

SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles from the coast (i.e. 'territorial waters') are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994.

The Conservation of Offshore Marine Habitats and Species Regulations 2017 consolidate and update the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. The 2017 Regulations introduce amendments which transfer responsibility for European nature conservation in the Welsh offshore region to Welsh Ministers. This gives Welsh Ministers similar powers in Welsh offshore waters to those currently exercised by Scottish Ministers in Scottish offshore waters. These regulations transpose into national law Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), and elements of Council Directive 2009/147/EC on the conservation of wild birds (Wild Birds Directive) in the UK offshore area. They came into force on 30th November 2017. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Conservation of Habitats and Species Regulations 2017 form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12nm in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as "*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*".

However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect ‘important’ countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). This has been amended by the Conservation of Habitats and Species Regulations (amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements and protected sites after the UK leaves the EU.

The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests':

- The action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof

- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as "Schedule 1" birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Reptiles (Amphibians and reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

<u>Effects on development works:</u>

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

An EPSM Licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Dormice

Hazel Dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof
- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

An EPSM licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of planted listed on Schedule 5 of the Conservation or Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any land owner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

National Planning Policy Framework (England)

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

Scottish Planning Policy (Published: 23 Jun 2014)

The SPP sits alongside the Scottish Government planning policy documents. The National Planning Framework (NPF) provides a statutory framework for Scotland's long-term spatial development. The NPF sets out the Scottish Government's spatial development priorities for the next 20 to 30 years.

A Natural, Resilient Place - Valuing the Natural Environment (National Planning Framework Context) Paragraph 193. The natural environment forms the foundation of the spatial strategy set out in NPF3. The environment is a valued national asset offering a wide range of opportunities for enjoyment, recreation and sustainable economic activity. Planning plays an important role in protecting, enhancing and promoting access to our key environmental resources, whilst supporting their sustainable use.

Policy Principles: Paragraph 194. The planning system should:

- Facilitate positive change while maintaining and enhancing distinctive landscape character;
- **Conserve and enhance protected sites and species, taking account of the need to maintain healthy ecosystems and work with the natural processes which provide important services to communities;**
- Promote protection and improvement of the water environment, including rivers, lochs, estuaries, wetlands, coastal waters and groundwater, in a sustainable and co-ordinated way;
- Seek to protect soils from damage such as erosion or compaction;

- Protect and enhance ancient semi-natural woodland as an important and irreplaceable resource, together with other native or long-established woods, hedgerows and individual trees with high nature conservation or landscape value;
- Seek benefits for biodiversity from new development where possible, including the restoration of degraded habitats and the avoidance of further fragmentation or isolation of habitats; and
- Support opportunities for enjoying and learning about the natural environment.

Planning Policy Wales (Draft 2018)

Paragraph 5.42 of the document refers to Biodiversity and Ecological Networks and states:

The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement. Addressing the consequences of climate change should be a central part of any measures to conserve biodiversity and the resilience of ecosystems. Information contained in The State of Natural Resources Report (SoNaRR) (published by Natural Resources Wales and Area Statements should be taken into account. Development plan strategies, policies and individual development proposals must take into account the need to:

- Promote the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- Ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- Ensure statutorily designated sites are properly protected and managed;
- Safeguard protected species; and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil; and
- Seek enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

Environment (Wales) Act 2016 and the Biodiversity Duty

The Environment (Wales) Act introduces a new biodiversity duty, which highlights biodiversity as an essential component of ecosystem resilience. This new duty replaces the biodiversity duty in the Natural Environment and Rural Communities Act 2006 (referred to as the NERC Act). Part 1 of the Act deals with Sustainable management of natural resources including Biodiversity and Resilience of Ecosystems Duty. The Environment Act enhances the current NERC Act duty to require all public authorities, when carrying out their functions in Wales, to seek to “maintain and enhance biodiversity” where it is within the proper exercise of their functions. In doing so, public authorities must also seek to “promote the resilience of ecosystems”. As under the NERC Act the new duty will apply to a range of public authorities such as the Welsh Ministers, local authorities, public bodies and statutory undertakers. This ensures that biodiversity is an integral part of the decisions that public authorities take in relation to Wales. It also links biodiversity with the long term health and functioning of our ecosystems, therefore helping to align the biodiversity duty with the framework for sustainable natural resource management provided in the Act.

Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty)

5.44 Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

a) Diversity between and within ecosystems;

b) The connections between and within ecosystems;

c) The scale of ecosystems;

d) The condition of ecosystems (including their structure and functioning); and

e) The adaptability of ecosystems.

5.45 In fulfilling this duty, planning authorities must have regard to:

a) The list of habitats of principal importance for Wales, published under Section 7 of the Environment (Wales) Act 2016;

b) The State of Natural Resources Report (SoNaRR), published by NRW; and

c) Any Area Statement that covers all or part of the area in which the authority exercises its functions.

5.46 A proactive approach towards facilitating the delivery of biodiversity and resilience outcomes should be taken by all those participating in the planning process. In particular, planning authorities should demonstrate that they have sought to fulfil the duties and requirements of Section 6 of the Environment Act by taking all reasonable steps to maintain and enhance biodiversity in the exercise of their functions. The broad framework for implementing the duty and building resilience through the planning system includes addressing:

- Diversity: to ensure mechanisms are in place to minimise further loss and that circumstances allow for species' populations to expand and recolonise their natural range (former range) or adapt to future change. This means development should provide a net benefit for biodiversity, and at the very least, with no significant loss of habitats or populations of species, locally or nationally;
- Extent: to ensure mechanisms allow for the maintenance of existing assets and networks and promote the restoration of damaged, modified or potential habitat and the creation of new habitat. This means that planning choices should incorporate measures which seek the creation and restoration of green networks and linkages between habitats and maintaining and
- enhancing other green infrastructure features and networks;
- Condition: this is more complex to address, not least because of the interactions of various factors which underpin habitats. At the very least planning approaches should not compromise the condition of ecosystems. By taking an integrated approach to development, for example, which considers both direct and wider impacts and benefits it should be possible to make a positive contribution through the planning system; and
- Connectivity: to take opportunities to develop functional habitat and ecological networks across landscapes, building on existing connectivity and quality and encouraging habitat creation and restoration. The opportunities could include enlarging habitat areas, developing buffers around designated sites or other biodiversity assets or corridors (including transport and river corridors) and the creation of 'stepping stones' which will strengthen the ability of habitats and ecological networks to adapt to change, including climate change.