Preliminary Ecological Appraisal Survey

Channing Junior School, 1 Highgate High Street, Camden, London N6 5JR

Channing Junior School

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Guidelines

This assessment has been designed to meet:

- Chartered Institute of Ecology and Environmental Management 'Guidelines for Preliminary Ecological Appraisal' (2013); 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 Ltd. undertook a Preliminary Ecological Appraisal (PEA) on the site of Channing Junior School, 1 Highgate High Street, Camden, London N6 5JR on 12th October 2017. The aim of the survey was to complete an Extended Phase 1 Habitat Survey of the survey area (for all the land that will be impacted by the proposals), and to analyse these against a desk study.
- This report is prepared in order to support a new planning application with the London Borough of Camden. This is described below:
    - **Planning application [unsubmitted]**

      The Proposed rear ground floor extension to the main building, alteration to the southern wing to provide additional teaching space and a subterranean extension for recreation changing facilities adjacent to existing tennis courts.

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 and circular 06/2005: Biodiversity and Geological Conservation. Para.99
Designated sites	The site itself is not subject to any designation, however there are several statutory	The proposed development is of limited scope, primarily replacing existing hard	No further surveys are required; however, mitigation and enhancement are recommended.	After the Himalayan balsam is eradicated (see below) a 2m wide strip of long meadow grass

	and non-statutory nature sites in the local landscape (see map in figure 1, in the desk study results). Of the four non-statutory sites within 500m, one of these is adjacent to the south of the survey site (Waterlow Park CaBI03). In the BRD summary, this is '*The largest park Camden Council runs* [10.16ha]*, with good wildlife habitats….*'. Its habitats are listed as: Amenity grassland, Hedge, planted shrubbery, pond/lake, ruderal, scattered trees, scrub, semi-improved neutral grassland, Tall herbs, wet grassland.	standing with the new building extension, including a subterranean section under the existing playground (see photo 5 above in the results section). These works as planned are thus very unlikely to have any long-term negative effects on the adjacent non-statutory site's biodiversity or abiotic baseline. From the site survey undertaken, it can be seen that none of the noteworthy habitats of the adjacent non-statutory site (see left) are found within the survey site. Therefore, no change in the species or habitat quality or composition of the adjacent SINC is expected.	➢ All materials should be handled and stored according to their COSHH advice and stored away from the southern boundary to avoid any run off into the park, and afterwards disposed of correctly. ➢ Measures to prevent dust blowing into the adjacent non-statutory wildlife site should be implemented: • Any transport entering the site will not have materials open, rather sheeted to avoid dust escape. • Dust extraction technology or water suppression will be used with drilling and grinding equipment, with wetted surfaces where applicable to avoid the generation of dust. • If the site is dry for long periods, spoil and debris will be periodically wetted to avoid becoming a source of dust. Such heaps will be positioned into a fence and covered, alongside other containers to avoid dust being blown by wind.	along the southern boundary would act as both a buffer and an enchantment to the non-statutory park site.

		No physical impacts from the works on the adjacent site are anticipated, However, some disturbance and pollution from noise/dust may occur if the works are left totally unmitigated. The proposed development is also concluded to have negligible impact upon the wider network of sites, designated as the *Hampstead Ridge Wildlife Corridor*. As long as appropriate lighting mitigation is followed. The amount of semi-natural green spaces and habitats will be unchanged, and the development Is very unlikely to affect commuting or foraging activities along this succession of 'green islands.		

Notable habitats and plants	There no plants or botanical habitats of intrinsic value on site or close by.	None foreseen	No further action required.	Green or brown roofs are encouraged for any flat areas of the proposed development, as are 'green walls' of climbing plants that could also be installed. Any new trees and areas of ornamental planting should comprise of native species.
Invasive / Non-native species	Present Himalayan balsam was found in the south-west of the survey area, between the gazebo and tennis courts, down the slope in a damp area.	Himalayan balsam can out-compete native plants through dense shading, and could be spread elsewhere as the proposed works may distribute its seeds.	The Himalayan balsam on site should be eradicated, ideally before works start. A dedicated problematic species management plan should be written to manage this.	N/A
Invertebrates	Negligible The suburban site offers only limited habitat for even generalist invertebrates.	None foreseen	No further surveys required, but invertebrate enhancements are recommended.	Habitat boxes for generalist invertebrates should be installed on site. ➢ Install 2 Butterfly Houses on the walls of the new buildings facing planting areas. ➢ Install 2 invertebrate

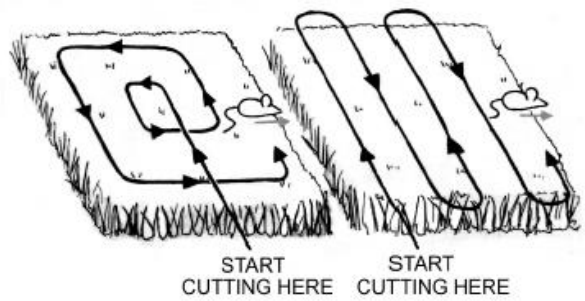
				hotels/insect towers on new buildings facing planting areas.
Bats	Negligible (roosting) There are no suitable buildings or trees on the development site for bat roosting, due to a lack of features. Bats may, however be using the adjacent tree lines to the as dark corridors for commuting.	None foreseen	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice. • Lighting will be controlled across the developed site to avoid any effects on bats foraging on the adjacent tree lines. • The lighting on the developed site will be limited to new buildings only. No lighting will be installed facing the tree lines, thereby maintaining the existing dark areas within the developed site for bats. • Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust "Bats and Lighting" publications: http://www.bats.org.uk/pages/bats_and_lighting.html • The lighting on the site will: - Use narrow spectrum light sources to lower the range of species affected by lighting - Use light sources that emit minimal ultra-violet light - Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources	➢ Two Schwegler 2FR bat tubes should be inserted into the southern elevations of the new buildings. This will provide permanent roosting provision for local bats, and link to the green corridors in the local area. These tubes should be built into the fabric of the building with a gap created in the brickwork to correlate with the bat tube entrances. The tubes should be positioned side by side in pairs and will provide access to the wall cavity as shown in the figure below. The tubes should be no less than three meters off ground level. No artificial light should shine on the tubes and

			are required in order to manage the blue shortwave 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 positioned below the eaves, 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. All of the above will ensure that the replacement bat roosts within the developed site will not be affected by any external lighting ensuring their long-term use.	clear flight paths to and from the boxes should be considered. If these tubes are not possible based on the final material of the building, then ➢ Install a minimum of 3 Schwegler type 1WQ bat boxes on the new buildings/ retained trees facing planting areas. They will face in a south/south-westerly direction approximately 3 – 5m above ground level and have clear flight paths to and from the entrances. No new lighting will illuminate any of the bat boxes or trees.

			Habitat enhancements for bats are also recommended.	
Barn owls	Negligible There is no suitable roosting or foraging habitat on site for barn owls. They are not urban birds.	None foreseen.	No further surveys required.	None applicable.
Birds	High Birds could use the trees or shrubs on site for nesting.	Active nests could be destroyed during any vegetation removal.	Any vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged. Habitat enhancements are also recommended.	Habitat Boxes: All boxes should be of the Schwegler type. These are made from woodcrete and are known to be used by those individual species they are designed for. The materials used in their construction means that minimal maintenance is required with an expected lifespan of 25 years plus can be expected. The house sparrow is a London (Biodiversity Action Plan) BAP priority species and also a

				London Species action plan (SAP) Species. ➢ 2x 1SP Schwegler Sparrow Terraces should be installed either within the walls or on the new buildings. These will provide nesting provision for sparrows. Elsewhere, install Schwegler bird boxes on the new buildings and/or retained trees on site e.g. ➢ 2x Schwegler 1B nest boxes ➢ 2x Schwegler 2H Robin Boxes These nest boxes should be positioned 3-5m in height.

Reptiles	Negligible The site provides no suitable habitat for any reptiles. There is no appropriate cover.	The proposed development will have no impacts on widespread or rarer reptiles.	**Mitigation** Avoidance measures during works Below is a methodology to avoid harm to herptiles during the development works. ➢ Clearance of logs, brash, stones, rocks or piles of similar debris will be undertaken carefully and by hand, and then removed and used to create habitat piles in longer grass outside of the development area. ➢ If the grass around the development area grows above 100mm before the works start, it would need to be cut using a specific methodology to avoid harm to herptiles: • Firstly, before any cutting the site should be walked over carefully from the north to the south, disturbing herptiles to encourage them to move outside of the development site. Care should be taken not to flatten the grass as it makes It more difficult to cut. • After the walkover, the clearance of vegetation should be undertaken on a warm day without rain, using a strimmer or brush cutter with all cuttings raked and removed the same day to create habitat piles outside of the development	Install two log piles on the western boundary of the site to act as refugia. Grass left long across the southern boundary would be beneficial for herptile cover.
Amphibians	Negligible Although there are ponds near to the survey site, (three are mentioned present within Waterlow park, 140m to the south) which may provide aquatic habitat for great crested newts or other protected amphibians, the survey and construction site itself does not offer suitable terrestrial habitat (hard standing and mown grass only). As these are both critical for their breeding and life cycle, it is very unlikely that they would be found on site at any time of year.	None foreseen		

	No great crested newts are known from the biological records search either.		area. Cutting will only be undertaken in a phased way which will include: • Cutting vegetation to a height of no less than 10mm (to avoid harm to reptiles in the basal zones of grasses), working to a pattern which avoids trapping reptiles in the middle and increasing the risk of injury (see figure below). • On this site, it would be appropriate to work east to west and back in rows to encourage reptiles to move into the nature reserve to the south.  Two cutting patterns used to avoid harm to reptiles. • Following removal of tall vegetation using the methods outlined above, remaining vegetation will be maintained at a height of 10mm through regular mowing or strimming to discourage common reptiles from returning.	

			• Ground clearance of any remaining low vegetation (if required) and any ground works will only be undertaken after a fingertip search of the areas. • Any trenches left overnight will be covered or provided with ramps to prevent common reptiles from becoming trapped. • Any building materials such as bricks, stone etc. will be stored on pallets to discourage reptiles from using them as shelter. Any demolition materials will be stored in skips or similar containers rather than in piles on ground. Should any herptiles be discovered during construction, which are likely to be affected by the development, works will cease immediately. The developer will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.	
Other Terrestrial Mammals	**Badgers** Negligible. No setts or commuting evidence found. **Water Vole**	No impacts foreseen on any other protected mammals.	No further surveys are required.	Fruit trees could be planted on site in the new gardens to increase the carrying capacity of the site.

	Negligible. No suitable habitat. **Otter** Negligible. No suitable habitat. **Dormouse** Negligible. No suitable habitat on site.			

For full justification of these recommendations, please go straight to section 4.0 Conclusions, Impacts and Recommendations. Otherwise, the full report starts below.

Contents

1.0 Introduction and Context

1.1 Background

- Arbtech Consulting Ltd was commissioned by Channing Junior School to undertake a Preliminary Ecological Appraisal (PEA) on the site of Channing Junior School, 1 Highgate High Street, Camden, London N6 5JR, including an Extended Phase 1 Habitat Survey assessment of the survey area (all land that will be impacted by the proposals) and analysis of this with a desktop study.

- No other ecological survey of the site has been undertaken by Arbtech Consulting Ltd, or is known by others.

1.2 Site Context

- The survey site is located at National Grid reference TQ 2863 8730, and has an area of approximately 5140m^2. The site currently consists of a main school building, outbuildings, hard standing playgrounds, amenity grass lawns, ornamental planting and scattered trees.

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. 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.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. Establishing the baseline conditions for future monitoring. To achieve this, the following steps were taken:

- The desk study area and field survey area (generally 50m from the site boundary/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, 2006)
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act [WCA]) 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 opportunities for enhancement have been provided based on current information

A survey plan is presented in Appendix 1, the proposed Project Plan is included in Appendix 2 (where available), desk study results are provided in Appendix 3, and a summary of relevant legislation can be found in Appendix 4.

1.4 Project Description

- This report is prepared in order to support a new planning application with the London Borough of Camden. This is described below:

  - **Planning application [unsubmitted]**

    The Proposed rear ground floor extension to the main building, alteration to the southern wing to provide additional teaching space and a subterranean extension for recreation changing facilities adjacent to existing tennis courts.

The currently proposed site plan is included in Appendix 2.

2.0 Methodology

2.1 Desk Study methodology

- Existing biological records data relating to the site and a surrounding 2km radius (the study area) are required to conform with national guidelines and these have been requested from the local environmental records centre, Greenspace Information for Greater London (GIGL). The data search is confidential information that is not suitable for public release.

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

- The survey was undertaken by Craig Williams BSc, MSc, GradCIEEM, MRSB (Natural England Protected Species Licence Numbers: [Bats] (2015-11169-CLS-CLS) [Great Crested Newts] (2015-16682-CLS-CLS) [Barn Owls] (CL29/00097) on 12th October 2017.

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 (see site map in Appendix 1). 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.

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.

Preliminary roost assessment bat survey methodology:

Buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/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 numerous features within the roof space.

The ecological value of the survey area has been assessed based on the Guidelines for Ecological Impact Assessment (CIEEM, 2006), and the Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring (David 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) were also noted throughout the survey area.

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/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/ecological conditions required by the species/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/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/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/species assemblage.

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 limitations to the survey regarding internal or external access, biotic or abiotic factors (e.g. wasps, asbestos) visibility, safety, or adverse weather.
- Therefore, this survey is considered a reliable baseline for its eventual conclusions and recommendations.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below, more details are included in Appendix 3

3.2 Designated sites

Table 3 provides details of any designated sites including their reasons for notification. Any relevant locations and extents are illustrated in Appendix 5.

Table 2: Designated sites within 2km radius of the site

Designated Site Name	**Distance from Site (approx.)**	**Reasons for Notification from Natural England and/or BRD or LPA policy maps**
Statutory Sites		
Parkland Walk LNR	~630m north	Local nature reserve *The predominant habitat at Parkland Walk is secondary woodland. A large area of naturalised wild plum are present in the Islington section of Parkland Walk. English elm is occasionally present and most abundant in the Islington section. The Islington stretch is also very important for a range of wildlife and includes the borough's only area of acidic grassland which is home to several rare plants and insects.*
Hampstead Heath Woods SSSI	~1220m west	Site of special scientific interest 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 site also includes an adjacent small valley containing an acidic flush with developing bog-moss communities.
Queen's Wood LNR	~975m north	Local nature reserve *The wood is an ancient oak-hornbeam woodland. English oak and occasional beech stand above hornbeam, midland hawthorn, hazel, mountain ash, field maple, cherry, holly and both species of lowland birch. The ground flora is particularly rich for somewhere so close to central London. It includes a large population of wood anemone, native bluebells, wood goldilocks and a thriving population of wood sorrel. Over one hundred species of spiders have been spotted and a nationally rare jewel beetle is widespread*.

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Closest non-statutory Sites		
Waterlow Park CaBI03	Adjacent to the south of the site	Borough Grade II *This park has a good variety of habitats. There are three spring-fed ponds with overhanging trees and shrubs. Marginal plants include great willowherb (Epilobium hirsutum), jointed rush (Juncus articulatus), water figwort (Scrphularia auriculata) and bittersweet (Solanum dulcamara). Waterfowl present include coot, moorhen, mallard, mute swan, tufted duck and Canada goose. Beside the smallest of the ponds, to the north, is an area of damp grassland. Here marsh foxtail (Alopecurus geniculatus), floating sweet-grass (Glyceria fluitans), hairy sedge (Carex hirta), creeping buttercup (Ranunculus repens) and common sorrel (Rumex acetosa) occur. Beside this damp grassland is an area of waste ground, a result of placing pond dredgings over an old council yard. A flora composed of tall herbs, ruderals and ephemerals and neutral grassland is present. Plants include fool's-parsley 9Aethusa cynapium), scarlet pimpernel (Anagallis arvensis), mugwort (Artemisia vulgaris), wild turnip (Brassica rapa ssp. Arvensis), shepherd's purse (Capsella bursa-pastoris), great willowherb, hoary cress (Lepidium draba), annual mercury (Mercurialis annua)and various goosefoots (Chenopodium spp.). The park has a number of specimen trees, which include some fine copper beeches (Fagus sylvatica var purpurea), maidenhair tree (Gingko biloba), Indian bean-tree (Catalpa bignonioides), oak (Quercus sp.), ash (Fraxinus excelsior) and crack willow (Salix fragilis), and extensive dense planted shrubberies.*
Harrington Site HgL05	~130m north	Local *Beside the Harrington site is a small developing woodland. The young canopy is dominated by sycamore (Acer pseudoplatanus) with the odd silver birch (Betula pendula) and tree-of-heaven (Ailanthus altissima). The ground flora is mostly nettle (Urtica dioica), ground elder (Aegopodium podagraria) and bramble (Rubus fruticosus agg.), with male fern (Dryopteris felix-mas) and a range of common woodland flowers.*
Highgate Cemetery M088	~180m south-west	Metropolitan *This site comprises the paired Victorian cemeteries at Highgate, of great historic and cultural interest. Secondary woodland of ash (Fraxinus excelsior) and sycamore (Acer pseudoplatanus) has become established amongst the ornate tombs and mausolea, and the stonework supports a diversity of lichens, ferns and mosses. A rich assemblage of plants, invertebrates and birds occurs in the woodland and glades, including many unusual species for this central location. Examples include great horsetail (Equisetum telmateia), prickly sedge (Carex muricata ssp. lamprocarpa) and the nationally scarce ivy broomrape (Orobanche hederae); spotted flycatcher and willow warbler. The nationally scarce liverwort, Luisier's*

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
		tufa-moss (Gymnostomum viridulum) has recently been found here at its easternmost site in the UK. This combination of high historical and biodiversity interest presents an extraordinary opportunity as an educational resource.
Archway Road Cutting IsbI02	~370m east	Borough Grade I *The steep cutting bridged by the Archway is well-wooded on both sides; the larger part to the south of the bridge is in Islington while a small extension to the north is in Haringey. Secondary and planted woodland here is composed of sycamore (Acer pseudoplatanus), poplars (Populus spp.) and various other exotic species. Ivy (Hedera helix) and common nettle (Urtica dioica) are both prominent in the ground flora and the site also features an impressive display of planted daffodils (Narcissus spp.) and other bulbs, visually at their best in the spring. An area of rough grassland and trees to the south of St Aloysius' College is also included in the site. Plants here include coltsfoot (Tussilago farfara) and hop trefoil (Trifolium campestre), and this area is used by the college for outdoor educational activities. The eastern bank of the cutting is scrubbier and supports a variety of common breeding birds. A number of bat-boxes have been erected in the woodland here as part of a wider wildlife enhancement project.*
Holly Lodge Gardens CaL01	~500m south-west	Local *The site consists of two formally managed parkland areas separated by a wide wooded avenue of mature common lime (Tilia x europaea) and other (mostly non-native) trees. A variety of native shrubs and wild flowers can be found beneath the trees, including elder (Sambucus nigra), wood avens (Geum urbanum), enchanter's-nightshade (Circaea lutetiana) and foxglove (Digitalis purpurea). The larger of the more open formal areas is laid out around holm oaks (Quercus ilex) and cedars of Lebanon (Cedrus libani). Generally, the surrounding grassland has few wild flowers within its sward. However, the uncommon mouse's-ear hawkweed (Pilosella officinarum) has been recorded here. The site is edged with dense scattered trees, particularly holly (Ilex aquilifolium), with a ground cover of ivy (Hedera helix). This area attracts a number of small birds including wren, robin, great tit and blue tit.*
Elthorne Park and Sunnyside Gardens IsBII01	~1120m east	Borough Grade II *Elthorne Park is a landscaped public park with a children's play area, games pitch and numerous features of value to a range of common plants and animals. Planted native trees include field maple (Acer campestre), rowan (Sorbus aucuparia), hawthorns (Crataegus spp.) and holly (Ilex aquifolium), which are all important in their various ways as arboreal larders for birds, butterflies and other insects. The Philip Noel-Baker Peace Garden is an ornamental walled garden, open during daytime and planted with an eclectic mix of exotic shrubs and flowers including many aromatic culinary herbs. Across the road, Sunnyside Community Garden is also open in daylight hours and has been similarly designed to support common*

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
		urban wildlife, including a small pond. Management of the garden is influenced and partly undertaken by a local community association. Many features across the design of the whole open space have been purposefully included to welcome disabled visitors.
Kentish Town City Farm, Gospel Oak Railsides and Mortimer Terrace Nature Reserve CaBI04	~1335m south	Borough Grade I *The railsides of the complex junction at Gospel Oak support a mosaic of habitats. Sizeable blocks of secondary woodland, dominated by sycamore (Acer pseudoplatanus) and silver birch (Betula pendula), are interspersed with scrub, grassland and tall herbs. Railway safety and operational efficiency must, of course, be the primary concerns in managing railsides, but nature conservation should also be taken into account. Mortimer Terrace Nature Reserve is managed by London Wildlife Trust. It is mostly sycamore woodland, though a wide range of native trees and shrubs have been planted, as have bluebells (Hyacinthoides non-scripta) and other woodland flowers. Kentish Town City Farm has good wildlife garden with a pond planted with native marginal plants such as reed sweet-grass (Glyceria maxima), yellow iris (Iris pseudacorus) and water mint (Mentha aquatica). This is home to a healthy population of common frogs. Most of the hedges and trees planted on site are native species although self-established sycamore is quite common. There are sheep-grazed pastures with plants of disturbed ground at their edges. The farm has an excellent bog-garden where insectivorous plants are grown, including all three native species of sundew (Drosera. spp.). A new area of land has recently been leased to the farm, 'Kiln Place Embankment'. This is covered chiefly in tall herbs typical of wastelands. A few scattered trees also occur (mostly sycamore). The farm is a good place to see butterflies and one of the few places in Camden that still supports a healthy population of house sparrows.*

3.3 Landscape

Priority habitats within 2km of the site are listed in Table 3.

Table 3: Priority Habitat Inventory within 2km (Magic.gov.uk):

Habitat	**Closest distance from site**
Deciduous Woodland	Within site to east
National forest inventory	Within site to east
Lowland heathland	~300m south
Wood-pasture and Parkland	~870m south-west
Good quality semi-improved grassland	~880m west
Ancient woodland	~930m north
Traditional orchard	~1000m south
Lowland fens	~1750m west

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local habitat is described below:

- The survey site is situated in a suburban area of north London. Moderate density buildings and gardens are the dominant land use immediately around the site in most directions for several kilometres. These would provide limited habitat value to protected species in general. To the west, east and south of the site lies Waterlow Park, which has grass and scattered trees, and leads to denser areas of woodland in Highgate Cemetery and beyond. These would provide much better habitat for protected species. Ornamental ponds lie 160m to the south, which may be of limited wildlife value.

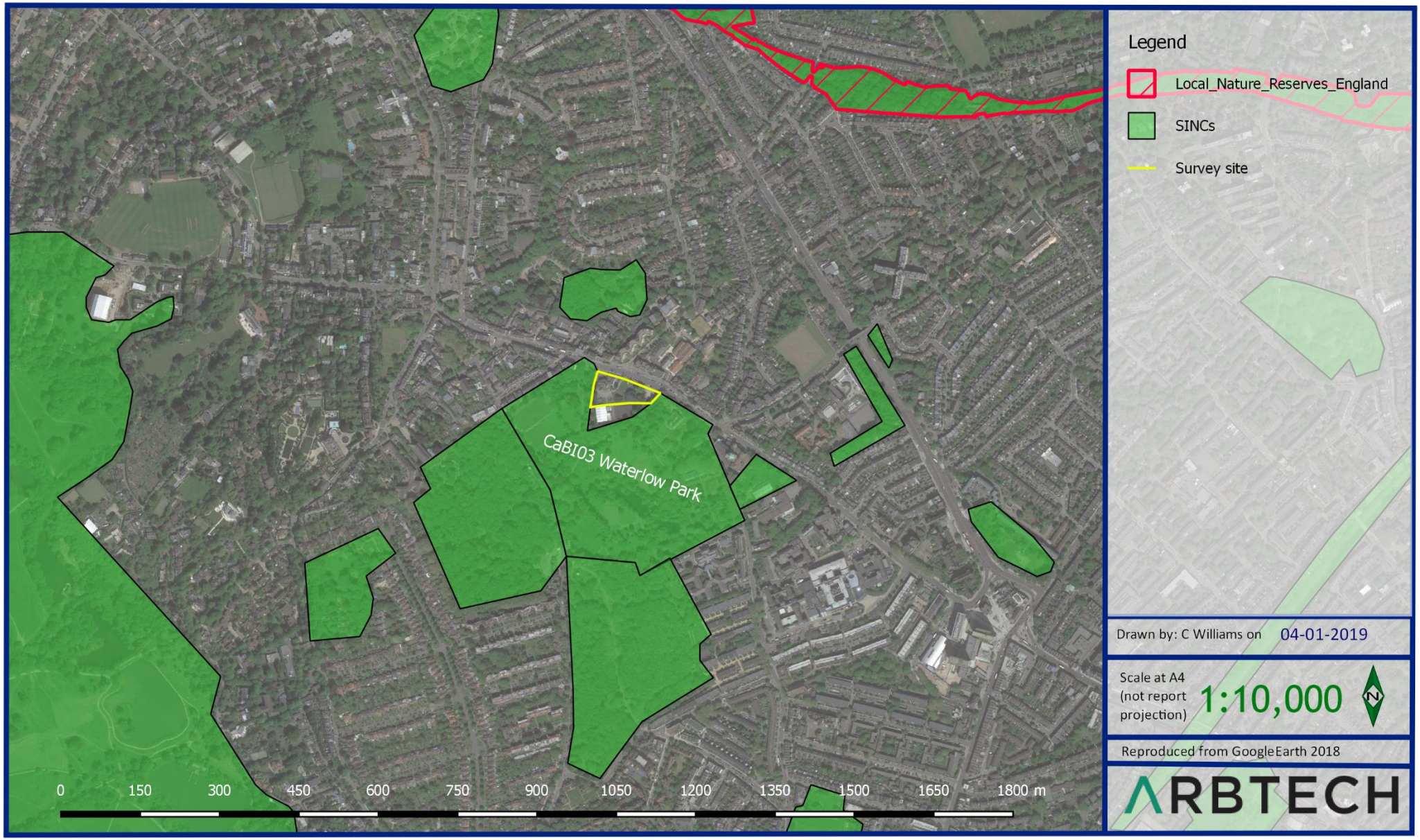


Figure 1: Aerial photo of site's location, showing landscape structure

3.4 Historical records

- A search of relevant biological records has been commissioned from SGIGL for a 2km radius around the site to satisfy best practice guidelines. These are summarised in Table 4 below:

Table 4: Historical record of terrestrial protected species summary within 2km of the site

Taxon Group	**Common name**	**Scientific binomial**	**Distance (m) of nearest record**	**Date of most recent record**
Reptiles	Grass Snake	*Zootoca vivipara*	1709	Jun 2008-Aug 2008
	Common Lizard	*Zootoca vivipara*	997	2001-2002
	Adder	*Vipera berus*	Confidential	1963
Bats	Serotine	*Eptesicus serotinus*	406	Aug 2012
	Daubenton's Bat	*Myotis daubentonii*	210	Aug 2012
	Natterer's Bat	*Myotis nattereri*	12	Aug 2012
	Lesser Noctule	*Nyctalus leisleri*	406	Aug 2012
	Noctule Bat	*Nyctalus noctula*	210	23/07/2015
	Nathusius's Pipistrelle	*Pipistrellus nathusii*	406	10/09/2014
	Common Pipistrelle	*Pipistrellus pipistrellus*	210	03/08/2015

	Soprano Pipistrelle	*Pipistrellus pygmaeus*	210	03/08/2015
	Brown Long-eared Bat	*Plecotus auritus*	406	03/08/2015

A search was undertaken of the magic database for granted European Protected Species Mitigation Licences (EPSMLs) within a 2km radius. The results of this is provided in Table 5 below.

Table 5: Granted EPSMLs within 2km of the site

Case reference of granted application	**Approx. distance from site**	**Species Effected**	**Licence Start Date:**	**Licence End Date:**	**Impacts allowed by licence**
EPSM2010-2225	~1800m east	C-PIP	21/06/2011	30/09/2012	destruction of a resting place
EPSM2012-4532	~1890m west	S-PIP	06/08/2012	31/08/2015	destruction of breeding site

3.5 Field Survey Results

- The survey site is illustrated in the map in Appendix 1. The site currently consists of a main school building, outbuildings, hard standing playgrounds, amenity grass lawns, ornamental planting and scattered trees.

- The environmental variables recorded at the time of the survey are shown in Table 6.

Table 6: Environmental variables during the survey

Date: 12/10/2017	
Temperature	13°C
Humidity	75°C
Cloud Cover	100%
Wind	2 m/s
Precipitation	None

[A3.1] Broadleaf trees

There are scattered broadleaf trees around the site, including cherry, elder, ash, beech, lime, maple, holm oak, holly, sycamore, mountain ash and whitebeam. None have any holes or crevices of roosting value.

[A3.2] Coniferous trees

Yew and cedar trees are found around the site. Neither have any holes or crevices of roosting value.

[B4] Amenity grass

Amenity grass lawn is found to the centre and east of the site, including down a slight slope from the playground to the tennis courts.

[J1.5] Garden

The 'garden' habitat is used to describe any complicated mosaics of flowerbeds, ornamental shrubs, vegetable patches, ornamental hedges etc. that do not fall neatly within the P1 code for England. Therefore, greater spatial variation exists within these than it may appear on the survey map in appendix I.

- On this site are a neatly trimmed privet hedge runs along part of the northern boundary. Elsewhere are small shrubs and saplings in ornamental borders, as well as vegetable plots. The non-native and problematic species, Himalayan balsam is found in a clump in the western end of the grass slope, where it is damper.

[J2.4] Fence

Metal railing fence and gates are found around the main school building.

[J2.5] Wall

A boundary brick wall runs along the northern site boundary. More are found around the main school building, and low examples in ornamental areas.

[J3.6] Building and hard standing

B1 is the main school building on site. It is a brick built, four storey structure with the fourth storey in the void of complicated hipped, mansard and flat roofs. The roofs are covered in slate tiles, of an excellent condition without any loose, missing or broken examples. Lead flashing around the roof vertices is unpeeling, and several brick chimney stacks are without cracks or crevices. A small timber deck is present on the roof, accessible by a ladder from which it can be observed more closely. The deck itself is of a good condition. Brick corbels are present around the roof, without holes or gaps. The exterior brickwork is without cracks or crevices, giving no access into a presumed cavity wall. There are no accessible loft voids across the building, with habitable rooms and roof windows instead.

Aside from the main school building, there are several small outbuildings around B1 including a smoking stand, timber sheds, cycle stores and a small timber gazebo.

Hard standing tarmac paving and play areas encircle the main school building and lead to a tennis court to the south of the site.

A hard-standing gravel pathway leads to a car park to the east of the site.

Photo 1: Looking south-west at the front of the main school building, B1.

Photo 2: Looking north at the rear B1.

Photo 3: Looking west at B1.

Photo 4: The roof of B1.

Photo 5: Looking east across the rear playground. This is the main area of the proposed works.

Photo 6: Looking south at the playground and grass downward slope.

Photo 7: Looking north at the eastern lawn and path.

Photo 8: Looking north at the eastern car park.

Photo 9: Looking south-west at the area of Himalayan balsam, in the damp area at the bottom of the grass slope.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Likelihood of the presence of protected species

The habitats on site were 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 will be clearly stated where a preliminary value can be given and where further information is required.

Appropriate justification for this assessment is provided in Section 2.3 and Table 1 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 7: 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 and circular 06/2005: Biodiversity and Geological Conservation. Para.99
Designated sites	The site itself is not subject to any designation, however there are several statutory and non-statutory nature sites in the local landscape (see map in figure 1, in the desk study results). Of the four non-statutory sites within 500m, one of these is adjacent to the south of the survey site (Waterlow Park CaBI03). In the BRD summary, this is '*The largest park Camden Council runs* [10.16ha]*, with good*	The proposed development is of limited scope, primarily replacing existing hard standing with the new building extension, including a subterranean section under the existing playground (see photo 5 above in the results section). These works as planned are thus very unlikely to have any long-term negative effects on the adjacent non-statutory site's biodiversity or abiotic baseline.	No further surveys are required; however, mitigation and enhancement are recommended. ➢ All materials should be handled and stored according to their COSHH advice and stored away from the southern boundary to avoid any run off into the park, and afterwards disposed of correctly. ➢ Measures to prevent dust blowing into the adjacent non-statutory wildlife site should be implemented: • Any transport entering the site will not have materials open, rather sheeted to avoid dust escape. • Dust extraction technology or water suppression will be used with drilling and grinding equipment, with wetted surfaces where applicable to avoid the generation of dust. • If the site is dry for long periods, spoil and debris will be periodically wetted to avoid becoming a	After the Himalayan balsam is eradicated (see below) a 2m wide strip of long meadow grass along the southern boundary would act as both a buffer and an enchantment to the non-statutory park site.

	wildlife habitats….'. Its habitats are listed as: Amenity grassland, Hedge, planted shrubbery, pond/lake, ruderal, scattered trees, scrub, semi-improved neutral grassland, Tall herbs, wet grassland.	From the site survey undertaken, it can be seen that none of the noteworthy habitats of the adjacent non-statutory site (see left) are found within the survey site. Therefore, no change in the species or habitat quality or composition of the adjacent SINC is expected. No physical impacts from the works on the adjacent site are anticipated, However, some disturbance and pollution from noise/dust may occur if the works are left totally unmitigated. The proposed development is also concluded to have negligible impact upon the wider network of sites, designated as the *Hampstead Ridge Wildlife*	source of dust. Such heaps will be positioned into a fence and covered, alongside other containers to avoid dust being blown by wind.	

		Corridor. As long as appropriate lighting mitigation is followed. The amount of semi-natural green spaces and habitats will be unchanged, and the development Is very unlikely to affect commuting or foraging activities along this succession of 'green islands.		
Notable habitats and plants	There no plants or botanical habitats of intrinsic value on site or close by.	None foreseen	No further action required.	Green or brown roofs are encouraged for any flat areas of the proposed development, as are 'green walls' of climbing plants that could also be installed. Any new trees and areas of ornamental planting should comprise of native species.
Invasive / Non-native species	Present Himalayan balsam was found in the south-west of the survey area, between the gazebo and	Himalayan balsam can out-compete native plants through dense shading, and could be spread elsewhere as the proposed works may distribute its seeds.	The Himalayan balsam on site should be eradicated, ideally before works start. A dedicated problematic species management plan should be written to manage this.	N/A

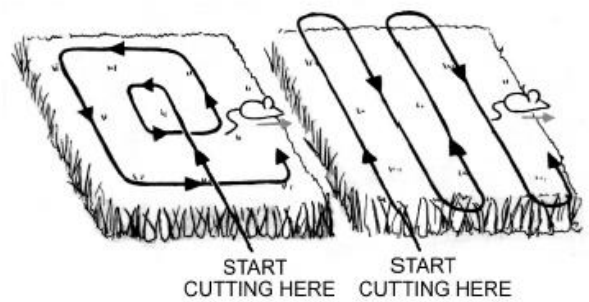
	tennis courts, down the slope in a damp area.			
Invertebrates	Negligible The suburban site offers only limited habitat for even generalist invertebrates.	None foreseen	No further surveys required, but invertebrate enhancements are recommended.	Habitat boxes for generalist invertebrates should be installed on site. ➢ Install 2 Butterfly Houses on the walls of the new buildings facing planting areas. ➢ Install 2 invertebrate hotels/insect towers on new buildings facing planting areas.
Bats	Negligible (roosting) There are no suitable buildings or trees on the development site for bat roosting, due to a lack of features. Bats may, however be using the adjacent tree lines to the as dark corridors for commuting.	None foreseen	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice. • Lighting will be controlled across the developed site to avoid any effects on bats foraging on the adjacent tree lines. • The lighting on the developed site will be limited to new buildings only. No lighting will be installed facing the tree lines, thereby maintaining the existing dark areas within the developed site for bats.	➢ Two Schwegler 2FR bat tubes should be inserted into the southern elevations of the new buildings. This will provide permanent roosting provision for local bats, and link to the green corridors in the local area. These tubes should be built into the fabric of the building with a gap created in the brickwork to correlate with the bat tube entrances. The tubes should be positioned side by side in pairs and will

			• Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust "Bats and Lighting" publications: http://www.bats.org.uk/pages/bats_and_lighting.html • The lighting on the site will: - Use narrow spectrum light sources to lower the range of species affected by lighting - Use light sources that emit minimal ultra-violet light - Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave 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 positioned below the eaves, 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	provide access to the wall cavity as shown in the figure below. The tubes should be no less than three meters off ground level. No artificial light should shine on the tubes and clear flight paths to and from the boxes should be considered. If these tubes are not possible based on the final material of the building, then ➢ Install a minimum of 3 Schwegler type 1WQ bat boxes on the new buildings/ retained trees facing planting areas. They will face in a south/south-westerly direction approximately 3 – 5m above ground level and have clear flight paths to and from the entrances. No new lighting will illuminate any of the bat boxes or trees.

			duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available. All of the above will ensure that the replacement bat roosts within the developed site will not be affected by any external lighting ensuring their long-term use. Habitat enhancements for bats are also recommended.	
Barn owls	Negligible There is no suitable roosting or foraging habitat on site for barn owls. They are not urban birds.	None foreseen.	No further surveys required.	None applicable.
Birds	High Birds could use the trees or shrubs on site for nesting.	Active nests could be destroyed during any vegetation removal.	Any vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged. Habitat enhancements are also recommended.	Habitat Boxes: All boxes should be of the Schwegler type. These are made from woodcrete and are known to be used by those individual species they are designed for. The materials used in their construction means that minimal maintenance is required with an expected lifespan of 25 years plus can be expected. The house sparrow is a London (Biodiversity Action Plan) BAP priority

				species and also a London Species action plan (SAP) Species. ➢ 2x 1SP Schwegler Sparrow Terraces should be installed either within the walls or on the new buildings. These will provide nesting provision for sparrows. Elsewhere, install Schwegler bird boxes on the new buildings and/or retained trees on site e.g. ➢ 2x Schwegler 1B nest boxes ➢ 2x Schwegler 2H Robin Boxes These nest boxes should be positioned 3-5m in height.
Reptiles	Negligible The site provides no suitable habitat for any reptiles. There is no appropriate cover.	The proposed development will have no impacts on widespread or rarer reptiles.	**Mitigation** Avoidance measures during works Below is a methodology to avoid harm to herptiles during the development works. ➢ Clearance of logs, brash, stones, rocks or piles of similar debris will be undertaken carefully and by hand, and then	Install two log piles on the western boundary of the site to act as refugia. Grass left long across the southern boundary would be beneficial for herptile cover.
Amphibians	Negligible Although there are ponds near to the survey site,	None foreseen		

	(three are mentioned present within Waterlow park, 140m to the south) which may provide aquatic habitat for great crested newts or other protected amphibians, the survey and construction site itself does not offer suitable terrestrial habitat (hard standing and mown grass only). As these are both critical for their breeding and life cycle, it is very unlikely that they would be found on site at any time of year. No great crested newts are known from the biological records search either.		removed and used to create habitat piles in longer grass outside of the development area. ➢ If the grass around the development area grows above 100mm before the works start, it would need to be cut using a specific methodology to avoid harm to herptiles: • Firstly, before any cutting the site should be walked over carefully from the north to the south, disturbing herptiles to encourage them to move outside of the development site. Care should be taken not to flatten the grass as it makes It more difficult to cut. • After the walkover, the clearance of vegetation should be undertaken on a warm day without rain, using a strimmer or brush cutter with all cuttings raked and removed the same day to create habitat piles outside of the development area. Cutting will only be undertaken in a phased way which will include: • Cutting vegetation to a height of no less than 10mm (to avoid harm to reptiles in the basal zones of grasses), working to a pattern which avoids trapping reptiles in the middle and increasing the risk of injury (see figure below). • On this site, it would be appropriate to work east to west and back in rows to encourage reptiles to move into the nature reserve to the south.	

			 Two cutting patterns used to avoid harm to reptiles. • Following removal of tall vegetation using the methods outlined above, remaining vegetation will be maintained at a height of 10mm through regular mowing or strimming to discourage common reptiles from returning. • Ground clearance of any remaining low vegetation (if required) and any ground works will only be undertaken after a fingertip search of the areas. • Any trenches left overnight will be covered or provided with ramps to prevent common reptiles from becoming trapped. • Any building materials such as bricks, stone etc. will be stored on pallets to discourage reptiles from using them as shelter. Any demolition materials will be stored in skips or similar containers rather than in piles on ground.	

			Should any herptiles be discovered during construction, which are likely to be affected by the development, works will cease immediately. The developer will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.	
Other Terrestrial Mammals	**Badgers** Negligible. No setts or commuting evidence found. **Water Vole** Negligible. No suitable habitat. **Otter** Negligible. No suitable habitat. **Dormouse** Negligible. No suitable habitat on site.	No impacts foreseen on any other protected mammals.	No further surveys are required.	Fruit trees could be planted on site in the new gardens to increase the carrying capacity of the site.

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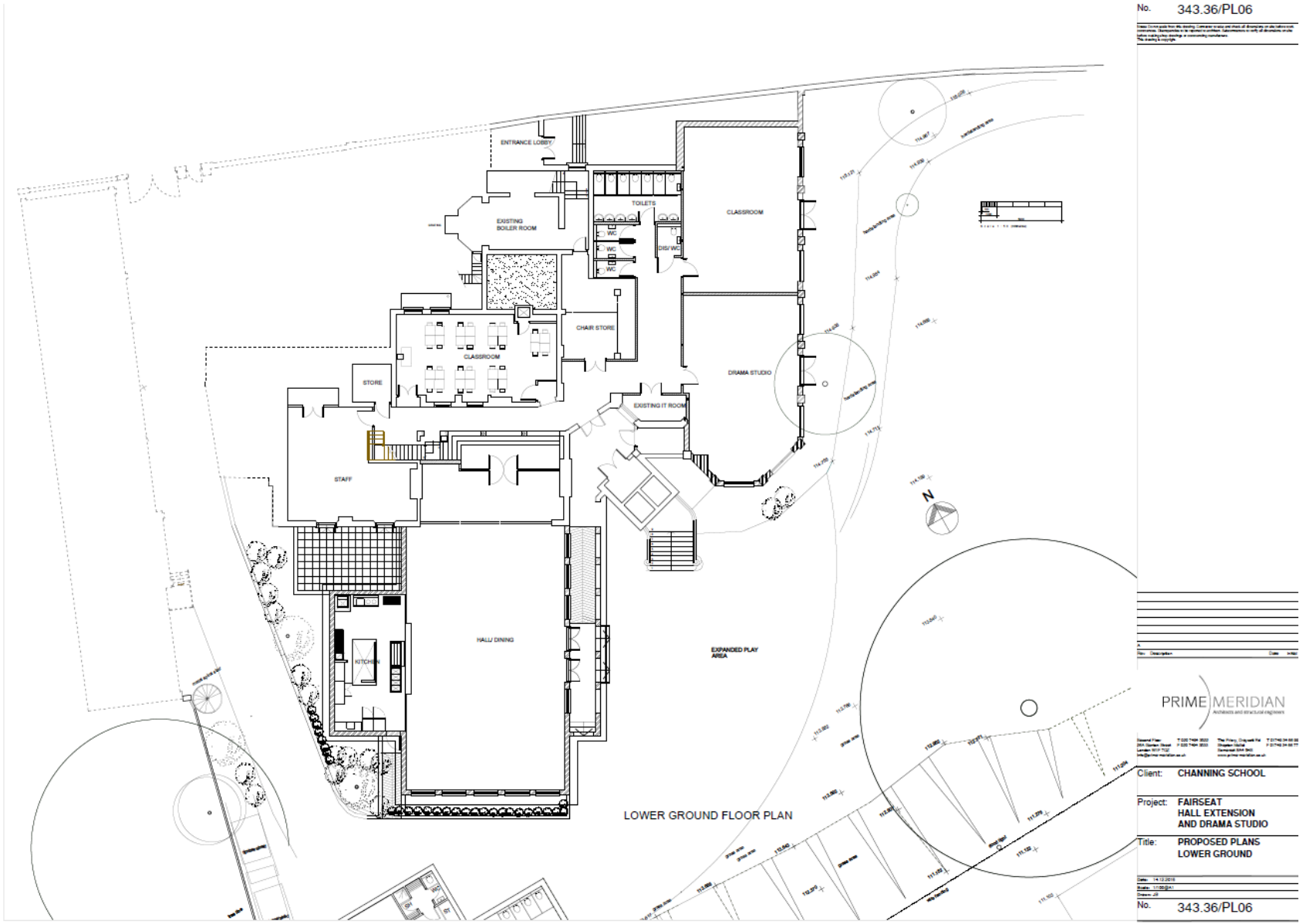
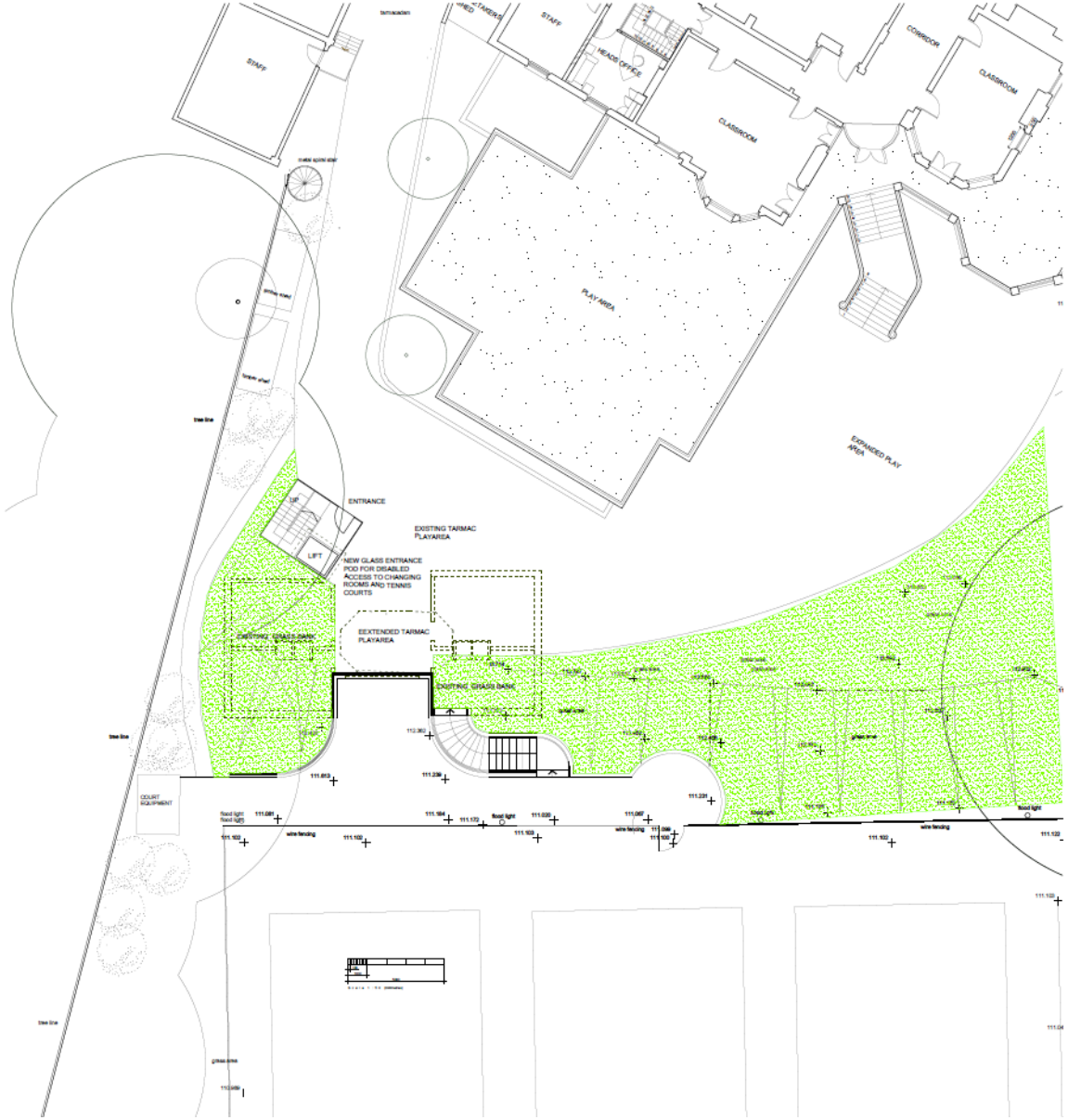
Appendix 1: Current Phase 1 Habitat Survey Map

Appendix 2: Proposed Site Plans (subject to change)





No. 343..40/PL01P

PRIME MERIDIAN
Architects and structural engineers

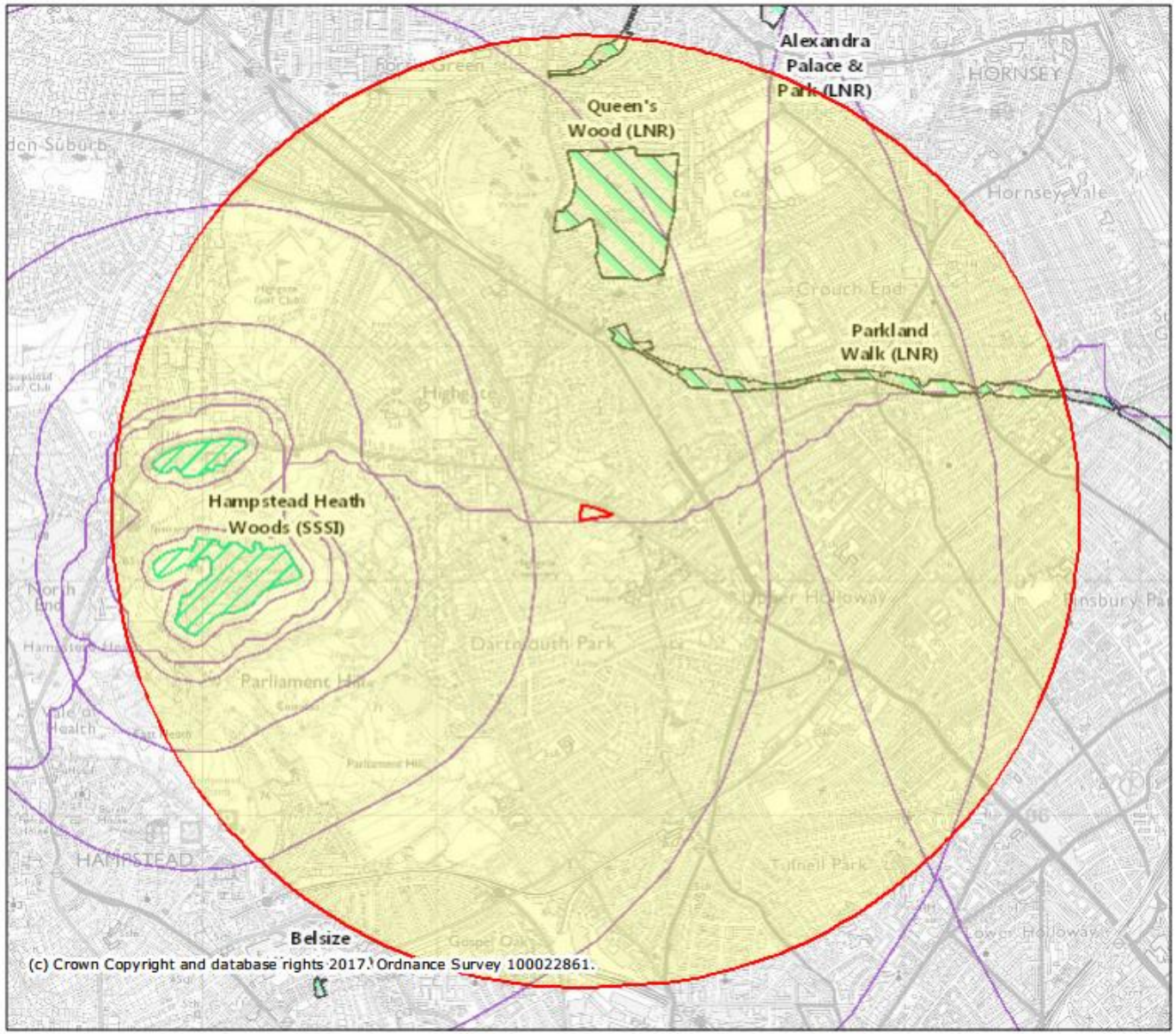
Client: CHANNING SCHOOL

Project: FAIRSEAT RECREATIONAL BUILDING

Title: PROPOSED PLANS GROUND LEVEL

No. 343..40/PL01 P

Appendix 3: Desk Study Information



Legend

- Local Nature Reserves (England)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)

Projection = OSGB36
xmin = 522300
ymin = 184000
xmax = 535000
ymax = 190500

0 0.5 1
km

Map produced by MAGIC on 12 October, 2017.
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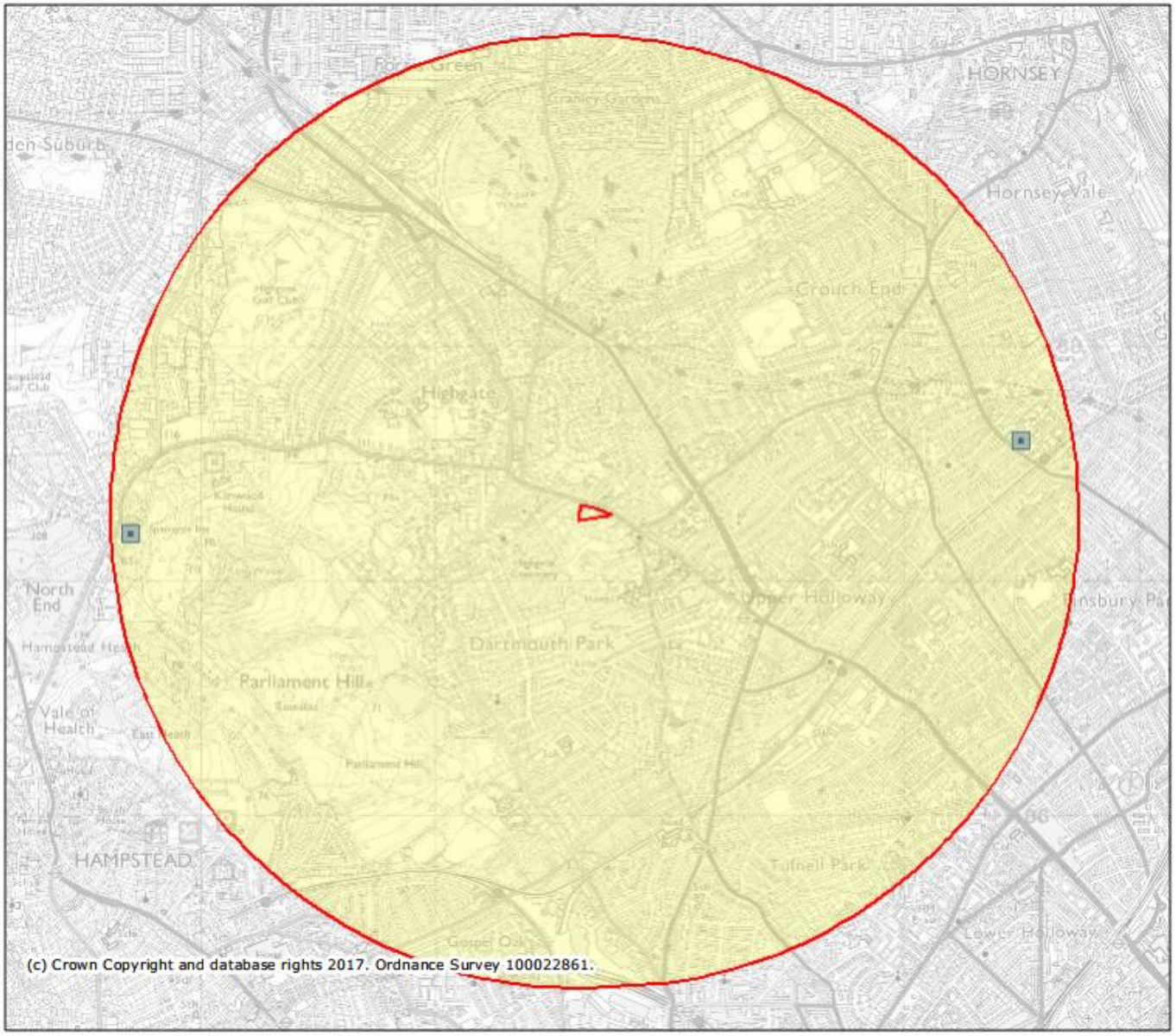

Legend

Granted European Protected Species Applications (England)

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

Projection = OSGB36
xmin = 522300
ymin = 184000
xmax = 535000
ymax = 190500

0 0.5 1
km

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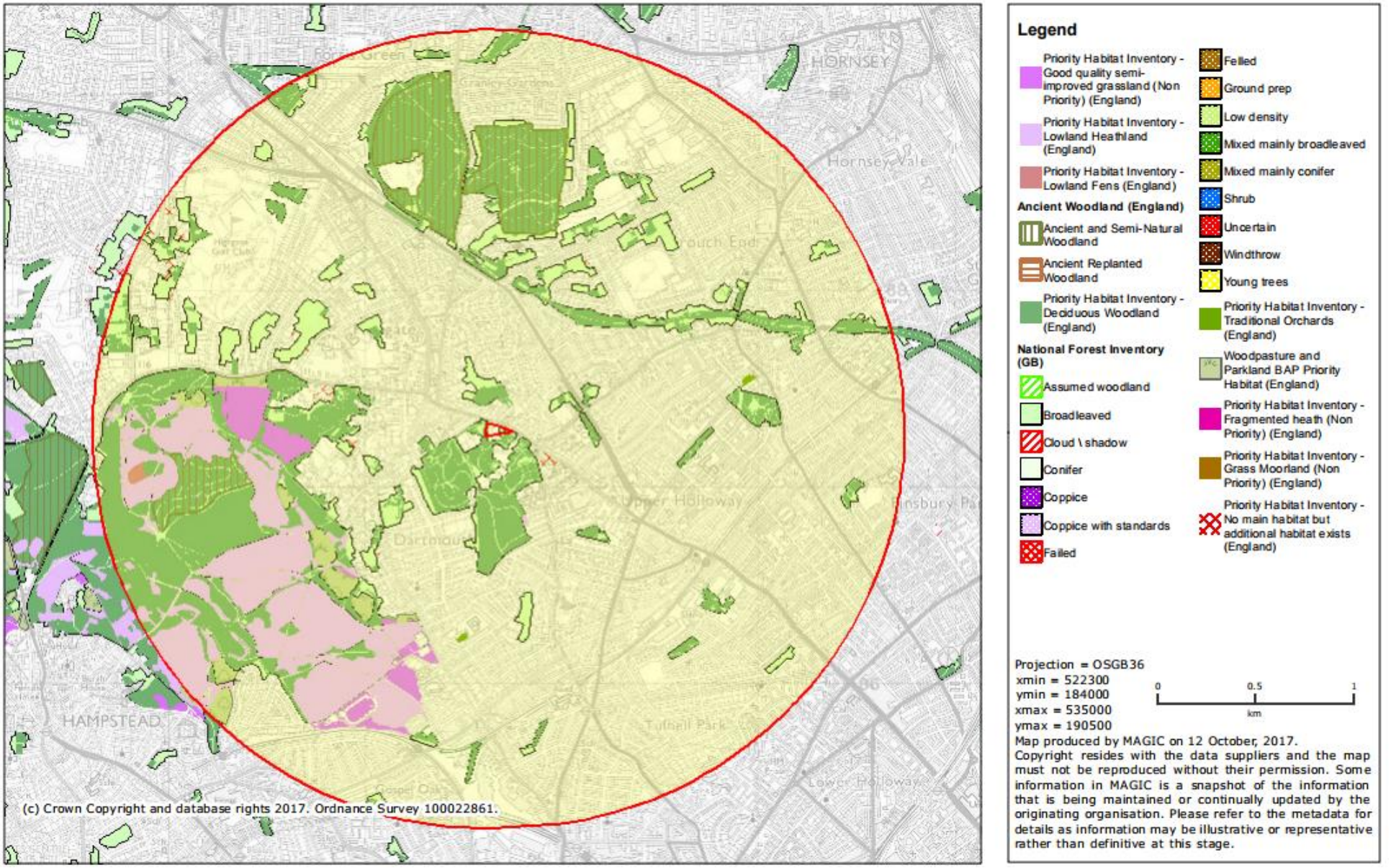
Legend
Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
Priority Habitat Inventory - Lowland Heathland (England)
Priority Habitat Inventory - Lowland Fens (England)
Ancient Woodland (England)
Ancient and Semi-Natural Woodland
Ancient Replanted Woodland
Priority Habitat Inventory - Deciduous Woodland (England)
National Forest Inventory (GB)
Assumed woodland
Broadleaved
Cloud \ shadow
Conifer
Coppice
Coppice with standards
Felled
Felled
Ground prep
Low density
Mixed mainly broadleaved
Mixed mainly conifer
Shrub
Uncertain
Windthrow
Young trees
Priority Habitat Inventory - Traditional Orchards (England)
Woodpasture and Parkland BAP Priority Habitat (England)
Priority Habitat Inventory - Fragmented heath (Non Priority) (England)
Priority Habitat Inventory - Grass Moorland (Non Priority) (England)
Priority Habitat Inventory - No main habitat but additional habitat exists (England)
Projection = OSGB36
xmin = 522300
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xmax = 535000
ymax = 190500
0
0.5
1
km
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HORNSEY
HAMPSTEAD

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 the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting SACs in UK offshore waters (from 12‑200 nm).

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) 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).

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. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

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 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). 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) 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 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 for any development works liable to affect an active badge 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.

Herpetofauna (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 herpetofauna 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.

Effects on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable 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 liable to affect habitats known to support water voles, the relevant countryside agency 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 (e.g. Natural England) 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 (e.g. Natural England) will be required for works liable 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:

Works which are liable 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

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. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White clawed crayfish

The white clawed crayfish Austropotamobius pallipes receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:

The relevant countryside agency 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 for works which are liable 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 (ENGLAND)

National Planning Policy Framework

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.